Multi objective Ant colony Optimization Algorithm for Resource Allocation in Cloud Computing

Prasad Devarasetty, Ch. Satyananda Reddy

Abstract: ***Cloud computing provides the services based on the pay-as-you-use policy. The more utilization of services leads to the utilization of more number of data centres. Therefore, data centres require high energy consumption for computing the tasks. To improve the efficiency of the data centre, resource management using the virtualization technology is the crucial factor. This paper concentrates on the issue of virtual machine placement and also proposes the bio inspired approach for reducing the resource wastage, minimize the energy consumption and communication cost with in the data centre. Ant Colony Optimization (ACO) algorithm is proposed to obtain the solution set for multi-objective problem. The performance of the proposed algorithm is tested with the existing algorithms and it is proved that the proposed algorithm is efficient in terms of energy consumption, communication cost and resource utilization.***

Key words: ***Virtual placement, Cloud, Consolidation, Communication cost, Resources.***

I. INTRODUCTION

From the past decade, cloud computing [1] is treated as one of the efficient computing platforms for service delivery. Cloud computing have the unlimited resources to serve any type of services [6]. The users can use the resources based on the pay-as-you-use policy. In the recent years, many organizations like Google, Amazon, Yahoo and Amazon moved their services in to the cloud for better serving of customers. The service providers use many servers in data centres to operate the services and this leads to the huge energy consumption. According to the researchers, the energy utilization of the data centre is almost equal to the energy consumed by the twenty five thousand households [2-5].

From the industry point of view, reducing the energy consumption leads to minimizing the cost of data centre. The major approach followed for reducing the energy consumption is to turn off the unwanted server and effective utilization of the allocated resources. Virtual machine placement and resource consolidation are the common mechanisms used for efficient utilization of resources in cloud computing. Virtual machine placement is a mechanism to map the virtual machines to the physical machines [7]. This method involves several issues. One of the issues is NP-hard problem. Resource consolidation is the process of selecting the resources which has to be migrated. Due to the NP-hard nature of the issues, the studies only concentrated on developing the single objective functions and also the studies only developed greedy approaches to solve the issues.

This paper concentrated on developing the multi-objective approach which mainly concentrates reducing the energy consumption, increasing the resource utilization and reducing the communication cost between the network components to the data centre. The rest of the paper is discussed as follows. Section 2 deals with the related work regarding the approaches previously suggested by the researchers to address the issues of energy consumption, reducing the communication cost and increasing the resource utilization. Section 3 deals with the problem statement and formulation for the proposed model. Section 4 explains about the multi objective ACO algorithm for VM placement. Section 5 deals with performance evaluation of the proposed model compared to the existing system in terms of defined objectives. Finally, section 6 concludes the paper.

II. RELATED WORK

According to the recent studies, the major algorithms follow the greedy approach to find the optimal solution for the issue of VM placement. These algorithms have the less time complexity to solve the issue compared to the Meta-heuristic algorithms. Though, they are relying on the centralized procedure and it is hard to follow the distribution process in the greedy algorithms.

The algorithms like permutation pack, First fit Decreasing (FFD) [3] and Choose pack are the greedy approaches which are used for the VM placement in cloud [8]. According to the experimental results Choose pack performs faster compared to the FFD and permutation pack. Leinberger and Karypis [9] are the authors who proposed Permutation pack and Choose pack greedy algorithms. In [10], the authors developed Best Fit Decreasing Algorithm (BFDA) which considers CPU utilization for VM placement. The parameters considered for the evaluation of the proposed model is VM migrations, energy consumption and SLA violations. In [11], the author studied the utilization of Markov models for identifying the overloaded VMs in the cloud. The assumption made in this model is not practically applicable to the real time workloads [12].

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Enhanced Usage Pattern Hybrid Approach to Explore High Usage Sets

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Abstract
Retrieving high usage item sets from relative and transactional databases, it defines to identify item sets with respect to high usage relative item sets. Increase large luminous data is posing research concept to predict and effective analysis of data in different types of business oriented applications. There are more number of methods were proposed in recent years. They have a problem to explore high number of data sets from transactions data relations. We propose and develop Enhanced Usage Pattern Hybrid approach for mining high usage item sets with effective models for data selection for mining high item sets. Our proposed approach consists two steps to mine high usage items from transactional data sets. For that, we use dynamic tree structure with two scans of transactional databases. In first scan we explore all the data sets related to transactions, in second scan of data structure, we explore all the high usage item sets. Performance evaluation of the proposed approach is to compare with traditional approaches performed on real time synthetic data sets. Experimental results show effective results in terms of runtime and other parameters with respect to transactional data bases.

Keywords: Transactional databases, Usage Pattern, Data mining, Item sets, Pruning and Customer services

I. INTRODUCTION

Data mining is to identify different item relations from overall transactional data sets and calculate different algorithmic impressions based on user knowledge with different relations and then associate those items with relative attribute formations. Associate attribute relation is one of the fundamental tasks in knowledge discovery and analyzing from large data bases in different business oriented organizations with different item set processing in transactional data bases, for effective decision maker to large data bases is an implicative tendency in that can be process valuable data.

To define data implication between different data sources, association is interesting measure, association between two data sources X and Y i.e. X→Y defined by two interesting parameters with following relations $X \cap Y = \phi$. Apriority [1] was the first calculation method to define above association between different data sources and then some of the other calculation methods are proposed from Apriori. For efficient relation between data sources association rules are maintain threshold based support and confidence. Mining algorithms that can find the different association rules based on several types of attributes with respect to different types of transactions. To extract valuable information is often from unrelated association relations associate with users because of low support efficiency in transactional data sources. If we want to increase threshold value then more and efficient algorithms and more finding rules are required and then they were helped to define association procedure and interest to end user, further more support and other values associate support values at lower support values consists large volume of rules; it is not comfortable for decision making to analyze data mining result. For efficient decision making with an efficient approach to reduce association rules is an aggressive concept as a result. Based on this view of data sets representation with respect to different parameter sequences usage mining is emerging concept in data retrieval procedures. Mine high usage item sets refer to identify different items which consist high profits with respect to transactions. Usage of things in exchange data relations comprises of two angles: 1) the significance of particular formations, which is equal to external data usage items, and 2) the significance of things in exchanges, which s called interior usage. Usage of an item set is characterized as the result of its outside usage and its inner usage. An item set is known as a high usage item set if its usage is no less than a client indicated least usage limit; generally, it is known as a low-usage item set. Mining high usage item sets from databases is a vital assignment has an extensive variety of applications, for example, site click stream examination. First, we found potential high usage item sets (PHUI) for data sets based on transactions and then scan the performance of utilities of transactional data sets.

To explore high usage item activates, to aspect this implementation on different item sets, Propose Hybrid algorithm (combination of both association & classification) to explore high usage item sets from transactional databases. Products set is known as a higher application product set if its application is no not exactly client defects least applications; else, it defines as a low-usage product set. Exploration great application product places from data source is a vital challenge has a comprehensive variety of utilizations, for example, site click flow evaluation business progression in sequence hypermarkets, cross presenting in retail places ,online e-trade administration, portable business environment organizing and despite finding crucial illustrations in biomedical programs.

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2-ABSORBING PRIMARY IDEALS OF SO-RINGS

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ABSTRACT. A partial semiring is a structure possessing an infinitary partial addition and a binary multiplication, subject to a set of axioms. The partial functions under disjoint-domain sums and functional composition is a partial semiring. In this paper we obtain equivalent conditions and some characteristics of 2-absorbing primary ideals in so-rings.

1. INTRODUCTION

Partially defined infinitary operations occur in the contexts ranging from integration theory to programming language semantics. The general cardinal algebras studied by Tarski in 1949, Housdorff topological commutative groups studied by Bourbaki in 1966, Σ-structures studied by Higgs in 1980, sum ordered partial monoids and sum ordered partial semirings (so-rings) studied by Arbib, Manes and Benson[2], [4], and Streenstrup[13] are some of the algebraic structures of the above type.

In [7], we studied some characteristics of 2-absorbing ideals in so-rings. In this paper, we consider the 2-absorbing primary ideals of so-rings and obtain various equivalent conditions of it. Also we obtain some characterizations of $\sqrt{I}$ in the 2-absorbing primary ideals of so-rings.

1991 *Mathematics Subject Classification.* 16Y60.

Key words and phrases. Ideal, primary ideal, 2-absorbing primary ideal, commutative so-ring.

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IRREDUCIBLE & STRONGLY IRREDUCIBLE BI-IDEALS OF Γ-SO-RINGS

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ABSTRACT. The set of all partial functions over a set under a natural addition (disjoint-domain sum), functional composition and functional relation on them, forms a Γ-so-ring. In this paper we introduce the notions of irreducible bi-ideal, strongly irreducible bi-ideal and strongly prime bi-ideals of Γ-so-rings and we prove that a bi-ideal is strongly irreducible if and only if it is strongly prime in a class of Γ-so-rings.

1. INTRODUCTION

In 2014, by extending the binary operation addition in Γ-semirings to partially defined infinitary operation Σ, M. Siva Mala[10], introduced the notion of a partial Γ-semiring as a common generalization of partial semiring by Arbib, manes and Benson[3],[4] and Γ-semiring. Also the author developed the ideal theory for the Γ-so-rings[11] to [16]. In [17] and [18], we introduced the notions of bi-ideal, prime & semiprime bi-ideals in Γ-so-rings and obtained various characteristics of them. In this paper, we introduce the notions of irreducible, strongly irreducible and strongly prime bi-ideals of Γ-so-rings and obtained characterizations of prime, semiprime, irreducible and strongly irreducible bi-ideals in regular Γ-so-rings.

1991 *Mathematics Subject Classification.* 16Y60.

Key words and phrases. bi-ideal, prime bi-ideal, semiprime bi-ideal, irreducible bi-ideal, strongly irreducible bi-ideal, regular Γ-so-ring and intra-regular Γ-so-ring.

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Non-linear modeling of mechanical properties of plasma arc welded Inconel 617 plates

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Abstract

In the present research paper, an attempt is made to perform non-linear modeling of the plasma arc welding (PAW) of Inconel 617 plates with the help of experiments conducted using a central composite design of experiments (CCD). It is to be noted that the PAW is a high depth to width ratio welding process that can be used to join high strength materials like Inconel 617. Furthermore, mechanical properties such as ultimate tensile strength (UTS), percentage of elongation, flexural strength and hardness of the welded joints are highly dependent on the conditions under which the welding is performed. In the present paper, the weld current, weld speed and plasma gas flow rate of PAW are considered as input process parameters to study the effect of these variables on the above mentioned mechanical properties. Industrial pure argon (99.99 %) is used as both plasma and shielding gas during the welding of the 2 mm thick Inconel 617 plates. Surface plots and analysis of variance (ANOVA) are used to test the statistical adequacy of the models. Moreover, the prediction accuracy of the models is tested with the help of experimental test cases and found to be in good agreement.

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Machine Learning Based Adboost Algorithms

Vijaya Ramineni, Y.Surekha, A. Vanamala Kumar

Abstract:AdaBoost is a notable straightforward and successful boosting calculation for characterization. It, nonetheless, experiences the over fitting issue on account of covering class appropriations and is exceptionally touchy to mark clamor. To handle the two issues all the while, we consider the contingent hazard as the altered misfortune work. This alteration prompts two focal points: it can specifically consider name vulnerability with a related name certainty; it presents a "dependability" measure on preparing tests through the Bayesian hazard rule, thus the subsequent classifier will in general have prevalent limited example execution than the first AdaBoost when there is a huge cover between class contingent conveyances.

I. INTRODUCTION

A. Boosting (machine learning)

Boosting is an AI group meta-calculation for principally diminishing predisposition, and furthermore variancein managed learning, and a group of AI calculations that convert feeble students to solid ones. Boosting depends on the inquiry presented by Kearnsand Valiant (1988, 1989): "Can a lot of powerless students make a solitary solid student?" A feeble student is characterized to be a classifierthat is just somewhat connected with the genuine arrangement (it can name precedents superior to arbitrary speculating). Conversely, a solid student is a classifier that is subjectively very much connected with the genuine characterization.

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At the point when originally presented, the theory boosting issue essentially alluded to the way toward transforming a frail student into a solid student. "Casually, [the theory boosting] issue asks whether a productive learning calculation […] that yields a speculation whose act is just marginally superior to irregular speculating [i.e. a frail learner] suggests the presence of an effective calculation that yields a theory of self-assertive precision [i.e. a solid learner]." Algorithms that accomplish theory boosting rapidly turned out to be essentially known as "boosting". Freund and Schapire's arcing (Adapt[at]ive Resampling and Combining), as a general strategy, is pretty much synonymous with boosting.

B. Boosting algorithm

While boosting isn't algorithmically obliged, most boosting calculations contain iteratively learning weak classifiers concerning a development and adding them to a last solid classifier. When they are fused, they are normally weighted by somehow or another that is routinely identified with the slight understudies' exactness. After a frail understudy is joined, the information loads are improved, known as "re-weighting". Misclassified input information put on a higher weight and perspectives that are depicted decisively get dynamically fit. In this manner, future fragile understudies spin more around the perspectives that past powerless understudies misclassified.

There are many boosting tallies. The underlying ones, proposed by Robert Schapire (a recursive bigger part gateway identifying) and Yoav Freund (support by winning part), were not versatile and couldn't manhandle the weak understudies. Schapire and Freund then made AdaBoost, an adaptable boosting assuming that won the respected Gödel Prize.

Just estimations that are provable boosting includes in the obviously for the most part right learning definition can definitively be called boosting calculations. Differing calculations that are close in soul to boosting tallies are a couple of the time called "utilizing calculations", in spite of the fact that they are additionally once in a while mistakenly called boosting calculations.

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Resource Optimization Using Cloud Scheduling

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Abstract:. Relevance of cloud has been increasing since the inception of internet, cloud has been one of the promising technologies which provide services over the internet .There are various cloud providers, Multiple clients need cloud resources over the internet. Clients have multiple option to choose among various cloud providers. Thus cloud providers aim to provide a cost minimal product which can be achieved via The utilization of resources should be scheduled efficiently properly in order to make the cloud system work efficiently. Cloud data center are assigned resources with the help of virtual machine scheduling and simultaneously request for resources has become an problem to address this problem improving the system performance by impacting the cost and scheduling technique VM are needed. In this paper we propose a hybrid resource utilization strategy known as cuckoo-Particle Swarm Optimization (PSO).

Index Terms: Cloud computing, Cloud resource scheduling Cloud workloads, Make span, Profit maximization,. Resource distribution policies, Resource management, Resource scheduling tools,

I. INTRODUCTION

Resource Management comprises of various phases of workload and resources from submission to execution Resource management has 2 steps: i)resource provisioning ii)resource scheduling. Resource provisioning is the analysis where requirements by consumers based on QoS and check proper resources are given to workload where the resource scheduling continues the work of resource provisioning according to the resources selected by the consumer the workload are mapped accordingly as shown in Fig 1intially,consumers submits workload details for workload execution. Broker reads the details and finds the suitable resource according to the workloads, Based on the QoS requirement feasibility is determined. The request is sent by broker to resource scheduling. Broker also manages monitoring, information, releasing of resources after all this resource scheduling is done in second stage. Provisioned resources are in queue while other are kept in resource pool. Submitted workloads are passed workload queue. In this stage, scheduling agenize maps the provisioned resources will provided for workload(s), execute the workload(s) Also arrival the assets again will resources pool then afterward successful completion about workload(s). Dependent upon QoS requirements, planning for assets to sufficient workloads is a testing issue. For an productive planning from claiming resources, it is vital should think about those QoS prerequisites. Resource planning is An hotspot range of exploration clinched alongside cloud because of extensive execution duration of the time and asset expense. Diverse asset planning criteria Furthermore parameters would guided resource scheduling algorithm (RSAs).

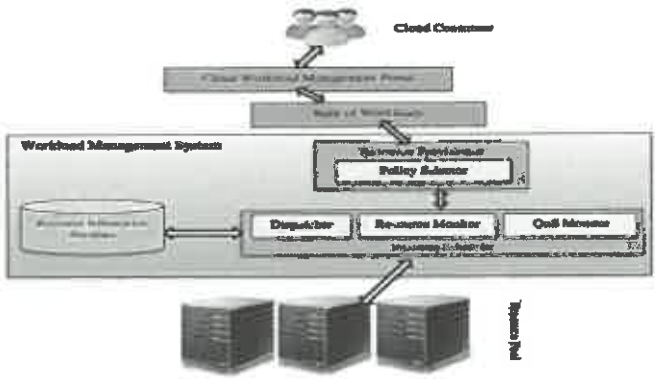

Fig 1: Resource Scheduling in Cloud

Key player in cloud is consumers and Provider, Providers allocates the resources according to the resources demanded by cloud consumer both players have different agenda, providers want more as earn much profit as possible with minimum investment many requests handled on one resource will lead to performance downgrade while the user wants minimum cost and minimum execution time service quality is maintained by rejecting the request which has indefinite result. Scheduling becomes hectic and information trading between is mostly not followed. Challenges in resource scheduling include dispersion, uncertainty which are not solved by RSA. Altering cloud environment properties is not enough. Consumers submits the workload is queued. Resources are assigned to the workflow according to the details provided.

Workload are provided with demanded resources by resource provisioned, resource pool contains all the resources. if occurred shortage of resources on basis of QoS requirements the workload management system send a new request by informing SLA with new QoS requirements. Resources Scheduler is provided with workload just after provisioning of resources is completed successfully. In the next phase result are provided to the Workload Management System. Request provided by the cloud consumer on the basis of request scheduling policy is picked by the policy selector [2] .Cloud Environment also a scheduler that executes diverse planning strategies dependent upon the choice taken toward arrangement selector. In view of the planning policy, the resources need aid allocated of the cloud workloads. The asset scheduler schedules those approaching cloud workloads In light of those workloads points. 1st from claiming all,

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Research of Task Management and Resource Allocation in Cloud Computing

Prasad Devarasetty, Ch. Satyananda Reddy

Abstract—This paper presents the task management framework in which tasks are identified, analysed and grouped based on the user QoS requirements. As a next step, cost and time based scheduling algorithm is employed to select the suitable pair of resources and tasks. The performance of the proposed algorithm is tested with execution time and cost allocated to the resources. Two existing algorithms are considered along with proposed algorithm for performance comparison. The results proved the efficiency of the proposed algorithm.

Keywords — Cost, Time, Scheduling, cloud, agent etc.

1. INTRODUCTION

Cloud Computing has the ability to provide different types of services over geographical regions. Resource allocation in cloud is one of the complex procedures due to the phenomenon of searching best possible combinations of tasks and resources [1-5]. Various methods are developed to solve the problem of resource allocation because different types of on-demand services offered by cloud service providers' causes challenges to the customers for selecting the resources [6, 7-9]. The allocation of tasks to the resources is a complex task in cloud environment and it can be easily solved by Machine Learning concepts. These concepts allocate the resources based on the QoS parameters.

Resource allocation is represented as algorithms which improves the performance of the computing resources by minimizing the cost, energy consumption, execution time and improves the effectiveness [3]. However, allocating more tasks to single resource leads to performance degrades and it takes more time to execute the tasks which leads to user dissatisfaction. Resource scheduling mechanism allocates the tasks to suitable resources, and hence the applications can effectively utilize the resources which ultimately lead to scaling advantage [10].

In this paper, we concentrate on finding the best pair of task and resources according to the user requirements. In the cloud environment, the main QoS constraints are minimizing the execution time of tasks and reducing the cost of resources. This paper proposes cost and time based scheduling algorithm for achieving QoS requirements in cloud environment. The rest of the paper is organized as follows: Section 2 deals with literature survey and the contributions. Section 3 explains about the task management framework with problem statement. Section 4 deals with the cost and time based scheduling algorithm. A comparison is made with existing algorithms in section 5. Finally, section 6 concludes the research work.

2. TASK MANAGEMENT FRAMEWORK

In the cloud environment, resource allocation is the main module of resource management. It essentially allocates the resources to the tasks from the available pool of resources. Based on the user preference, the framework searches the suitable resources to the submitted workload. The resource allocation procedure is categorized in to four steps. In the initial step, the tasks are analysed and grouped based on the user requirements. As a next step, the suitable resources need to be identified from the pool of resources. In the third step, resources are allocated to the tasks based on the requirements of the user. In the final step, resources scheduling is performed based on the selection of appropriate scheduling policy by the user to achieve the optimal QoS [1-2]. Figure 1 shows the task management Framework and Figure 2 shows the flow diagram of task resource scheduling procedure.

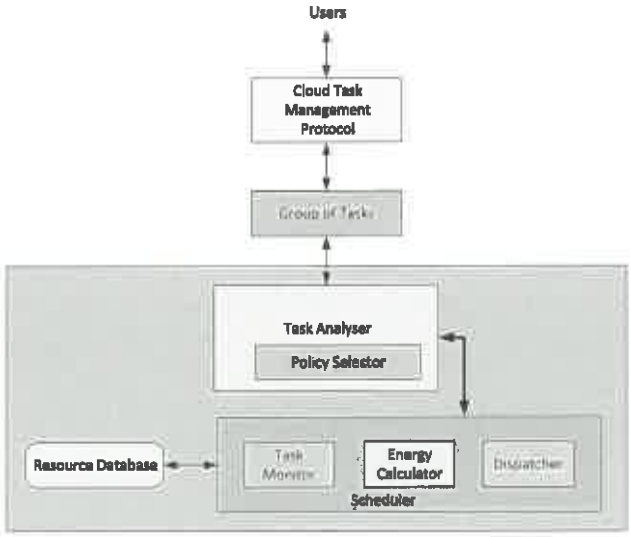

Figure 1: Task Management Framework [1]

The task management frameworks execute the task requests as follows [1]:

- The cloud users submit their tasks to the task management framework. As a next step, the user authentication and authorization is processed.
- The task management system requests the user to submit the requirements to execute the tasks.

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Optimal allocation of multiple FACTS devices considering power generation pricing for optimal reactive power dispatch using kinetic gas molecule optimisation

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Abstract: Optimal reactive power dispatch (OPRD) is a very immense issue in power system, which is a complicated non-linear optimisation issues. Therefore, a good metaheuristic algorithm called kinetic gas molecule optimisation (KGMO) is proposed for solving multi-objective OPRD (MOPRD) problem which is enhanced by calculating acceleration coefficients and inertia weight dynamically rather than a constant value. Also, three flexible AC transmission system (FACTS) devices like static VAR compensator (SVC), thyristor controlled series compensator (TCSC) and unified power flow controller (UPFC) are optimally allocated in the test system. Since the cost is increases considerably with these devices, so, power generation pricing also calculated in this work. This research is implemented in IEEE 30 bus system and it is validated from MATLAB, which shows the value of power loss as 4.3583 and voltage deviation as 0.26499 with cost of 469.6417 $/MVAR, which is compared with implemented particle swarm optimisation (PSO) results.

Keywords: flexible AC transmission system; FACTS; kinetic gas molecule optimisation; KGMO; optimal reactive power dispatch; ORPD; multi-objective ORPD; multi-objective OPRD; MOPRD; static VAR compensator; SVC; thyristor controlled series compensator; TCSC; unified power flow controller; UPFC.

Reference to this paper should be made as follows: Panthagani, P. and Rao, R.S. (xxxx) 'Optimal allocation of multiple FACTS devices considering power generation pricing for optimal reactive power dispatch using kinetic gas molecule optimisation', *Int. J. Advanced Intelligence Paradigms*, Vol. X, No. Y, pp.xxx–xxx.

ARCHIVES

Camouflaged Foreground Object Detection With Conventional Methods

Chennamsetty Pulla Rao, Dr. A Guruva Reddy, Dr. C.B. Rama Rao

Abstract

Detection of a camouflaged object is a continuous research problem in many computer vision applications where similar intensity information among foreground and background regions. An Image consists of three types of functional information like: Spatial, Spectral and temporal, the camouflage problem cannot be solved by having these three types of functional information or even together. Conventional objective and subjective methods have given a sort of solution to distinguish foreground and background but the difficulty is observed where ever the colour entity information is very close i.e: very small difference between FG and BG. This paper proposed a framework with a probabilistic approach to classify FG and BG using principle features at each pixel. Certain basic features of an image by the background representation is then modeled by significant basic features under the framework at each pixel of basic features. The characterized background approach will be used to detect the statistical information of foreground measurements. The proposed method in comparison with survey methods found to be satisfactory and can be useful in computer vision applications, texture classification, military, and civilian, etc..

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Trust-aware FuzzyClus-Fuzzy NB: intrusion detection scheme based on fuzzy clustering and Bayesian rule

Neenavath Veeraiah[1,2] · B. Tirumala Krishna[3]

Abstract
The dynamic nature of the nodes on the mobile ad hoc network (MANET) imposes security issues in the network and most of the Intrusion detection methods concentrated on the energy dissipation and obtained better results, whereas the trust remained a hectic factor. This paper proposes a trust-aware scheme to detect the intrusion in the MANET. The proposed Trust-aware fuzzy clustering and fuzzy Naive Bayes (trust-aware FuzzyClus-Fuzzy NB) method of detecting the intrusion is found to be effective. The fuzzy clustering concept determines the cluster-head to form the clusters. The proposed BDE-based trust factors along with the direct trust, indirect trust, and the recent trust, hold the information of the nodes and the fuzzy Naive Bayes determine the intrusion in the nodes using the node trust table. The simulation results convey the effectiveness of the proposed method and the proposed method is analyzed based on the metrics, such as delay, energy, detection rate, and throughput. The delay is in minimum at a rate of 0.00434, with low energy dissipation of 9.933, high detection rate of 0.623, and greater throughput of 0.642.

Keywords Mobile ad hoc network · Intrusion detection · Trust · Fuzzy Naive Bayes · Fuzzy clustering

1 Introduction

A mobile ad hoc network (MANET) [1–3] is an organized network with the collection of numerous nodes that communicate among themselves without any controller. There is a host and a router in the MANET and the communication between the nodes that are far from their communication range is assisted with the intermediate nodes to exchange their message [4]. In general, the characteristics of the MANETs are: they possess multi-hop routing, dynamic topology, high user density, and they possess scalable nodes that move freely in and out of the MANET network [5, 6]. MANETs possess the capability to operate independently or it tends to communicate with any fixed network using a gateway or interface. The nodes in the network are mobile and hence, the topology of the network changes rapidly and they are organized without any limitations [7]. The operating modes of the individual nodes in the MANET are sensing, computing and communicating. The sensing node uses less battery energy, whereas the communication mode requires more battery energy [8, 9]. The amount of energy consumed in the communication mode depends mainly on the range of transmission, which grows exponentially with the signal propagation. Transmission and reception of data in wireless nodes is executed by the radio module. The energy is consumed to serve communication between nodes [5, 10]. Under the critical situations, the optimal Energy Efficiency design ensures the highly economical way to utilize the mobile device energy and thereby, ensuring a complete functioning of the MANETs [1].

The communication between the nodes with less energy is initiated using a routing protocol and the appropriate functioning of the protocol depends on the mobile nature of MANETs [11–13]. The selection of the protocols depends on the Networks characteristics, such as density, size, and

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Theoretical studies on structural, electronic and optical properties of kesterite and stannite $Cu_2ZnGe(S/Se)_4$ solar cell absorbers

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Abstract

Structural, electronic and optical properties of $Cu_2ZnGe(S/Se)_4$ semiconductor materials in their kesterite and stannite phase have been investigated using density functional theory (DFT) approach using full potential linearized augmented plane wave (FP-LAPW) method. Modified Becke-Johnson (mBJ) exchange correlation is used for computing physical properties. These kesterite and stannite Cu_2ZnGeS_4 and $Cu_2ZnGeSe_4$ are direct band semiconductors with band gap values ~1.15 eV and 1.0 eV for Cu_2ZnGeS_4 and 0.64 eV and 0.24 eV for $Cu_2ZnGeSe_4$, respectively at Γ point. A scissor correction of 1 eV raised these band gap values equal to the experiment values. Optical properties are investigated in terms of refractive index, extinction coefficient, reflectivity, optical conductivity, and optical absorption using dielectric constant.

Introduction

Copper based quaternary chalcogenides are attractive compound semiconductors for their possible applications in optical devices mainly in solar cells as efficient absorbers. The excellent light harvesting properties, earth abundant elements and relatively low toxicity of constituents make them suitable for the future photovoltaics. Among quaternary chalcogenides $Cu_2ZnSn(S/Se)_4$ (CZTS/Se) are explored as the promising alternate absorber material to $CuIn_xGa_{1-x}Se_2$ (CIGSe) and CdTe [1,2]. A considerably good efficiency of 12.7% is reported for CZTS/Se solar cell with CdS and In_2S_3 double buffer layer [3]. However, there are limited reports with such high efficiencies and mostly efficiencies are limited around 4–5%. There are continuous efforts to overcome the limitations of CZTS/Se based solar cells such as high voltage deficit, high interfacial and bulk recombination, inferior back contact etc [4]. Thus, there is a need to look for alternative prominent absorbers with desirable electronic and optical properties suitable for high performance solar devices. Ge based quaternary chalcogenides also show similar structural properties like CZTS/Se. Incorporating Ge in place of Sn proportionally increases the band gap of absorber and with

EVALUATION OF HARD COATING MATERIALS PERFORMANCE ON MACHINABILITY ISSUES AND MATERIAL REMOVAL RATE DURING TURNING OPERATIONS

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Abstract The potential of various varieties of hard outer surface coats of carbide inserts on surface roughness, material removal rate (MRR) and flank wear, are scrutinized based on an experimental study using standard orthogonal array L_{16}(4 ^3 x 2 ^1). For this motive, AISI 304 austenitic stainless steel is turned applying five divergent varieties of coated carbide inserts over a gamut of cutting parameters that include cutting speed, feed depth of cut and nose radius. Among the selected coated carbide inserts, turning by physical vapour deposition (PVD) coated with TiAlN-TiN layers cemented carbide insert obtained the lowest average surface roughness value (1.06 μm) and the lowest average flank wear value (0.1580 mm). The maximum average MRR (29248.9mm^3/ min) is obtained by chemical vapour deposition (CVD) [Ti (C, N) + Al_2O_3] layer cemented carbide coated tool. It is found out that the fundamental theoretical tendency of surface roughness values in respect of feed rate is different from the experimental values. Further, the most significant factors affecting the machinability issues and MRR are identified using analysis of variance (ANOVA). Reasonably accurate mathematical models are developed for prediction of machinability issues and MRR within limits.

Key words: Surface roughness, Flank wear, MRR, AISI 304 austenitic stainless steel, ANOVA, Coated carbide inserts

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AEROTHERMAL CHARACTERISTICS OF A RECTANGULAR DUCT WITH PERIODIC TRAPEZIUM RIBS

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Allocated positions of 3D arrangements in soft, sensibility Robots with automation through Deep neural Learning

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ABSTRACT

Designing the machine (robot) soft robots with uncontrolled requirements to process with authentic, online proprioception of 3D design through combined soft sensors. Implementing the new features for suitable and a soft machine with robot's 3D configuration implemented in Artificial intellenge and taking the previous data and will analyzed in a soft, sensibility of various smooth area of the body. The implementation can be seen and shown the kirigami qualify the different methodologies to speed and vigorously recognizing the soft robots known and collected different products, a well known kinematic values for soft robot shapes, inspecting of design of the networks to verifying soft robot design. Though the hysteretic, decreasing from the various methods, RNN (recurrent neural network) specifies the particular rules and regularization of the kinematic of arguments and, thus, robot can be molded. The model of neural network trained and known the values of the network and analyzed the standard values with dynamic controls, with the whole runtime environment the network layers will be compared and with 50 percentage captured. The machine is very important and can very useful for daily essential new with good features in soft robotic perception. The experimental work is tested and anticipates the model is seen separate new places directed to controlled with closed circle in soft robotics. Evaluating this configuration with learning's like deep learning and neural network.

Keywords: Facial Expression, Feature Extraction, Key point detection, face recognition, Classification.

DOI: xxx

1. INTRODUCTION

The machine(robot) shows and with good and essential and an designing a different model for designing robots for improving changing, strength, safety, its importance and by specifying the problems that different in machine [1]. In spite the robot features are from last years ago the performance can be done based the task given to the robot the task given to the machine is progressing from past few years, conducting self made models and samples of tasks in soft robots remains for ever for multipurpose and analyzes with different field.

The importance of can be made by specifying two things make the machine or robot seems to be somewhat problem to maintain. The first one is the work done with robot is continuous and one who operate these type robots can used different methodologies view based conducting and maintain it is very heavily effect.2. Combining all the material with sensed equipments is most important for the next future to have good and dynamic process of work. These well equipped and construction and implementing needs the products, materials, devices[7].Frequently, typical devices are more difficult in gathering all the and control and can been reach through different enabling methods, other than capture vision systems with movement[4], [9] and magnetic tracking [10].these different approaches will be proved experimentally, soft robots need well formed implementations internally for soft sensors for much more better and expermentally,self maintained.

So, the problems from this soft robotic estimating and following with standards of both physical things of machine. Things that can seen in different levels are the tasks that can be known and will be implemented and different alternate things can be verified.[10].The different model based and approaches and data-driven control strategies are useful for standard. Robots are essential to run dynamically observed and the values that can be changed continuously.

The present the things are happening in personally and is based the different learning algorithms and different sensor evaluations in the machine (robot) [3], these systems will perform with simple tasks even without actuation capacity and shown in graphically viewed the design with more difficult of soft robots.

To know the segment of working, modular soft robot allocated fluidic actuators with 12, consisting the separately (Fig. 1).We implemented every simple value consisting of root mean square error (RMSE) with best known combined kinematic, with pre-valued of 3D configuration and captured with correct measures the steady state values of the soft robot arm, taking different values of inputs from our soft sensors showing exponentially lagging of non-monotonic ways.

1) Implementing kinematic and creation of fast and mixed piezo resistive silicone sensors.
2) Model can be given values and combining the every soft robot's shape to specified scales.
3) A deep neural network with different learning methods to verifying an estimated and values.

Soapy

Camouflage detection with texture statistical characterization in autonomous systems

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Abstract

Purpose – The purpose of the research work is to detect camouflaged objects in autonomous systems of military applications and civilian applications such as detecting insects in paddy fields, identifying duplicate products in different texture environments.

Design/methodology/approach – Camouflaged objects detection is performed by smoothing texture with nonlinear models and characterizing with statistical methods to detect the objects.

Findings – There are few challenges in existing camouflaged objects detection due to the complexities involved in the detection process. This work proposes a constructive approach with texture statistical characterization for camouflage detection. The proposed technique is found to be better than existing methods while assessing its performance using precision and recall.

Research limitations/implications – Even though there is lot of research work carried, there are few challenges for autonomous systems in camouflage detection due to the complexities involved in the detection process such as texture modeling and dynamic background problems and environment conditions for autonomous system.

Practical implications – Camouflage detection finds potential applications in security systems, surveillance, military and autonomous systems. The proposed work is implemented in different environments for camouflage detection.

Social implications – Social problems such as image acquisition environment, time of day, desert, forest and grass fields of paddy.

Originality/value – The proposed method detects camouflaged objects in autonomous systems where it is applied for images of different kinds. It is found to be effective on images recorded in battlefield and challenging environments.

Keywords Camouflage detection, Texture analysis, Gray-level co-occurrence matrix (GLCM), Normalized co-occurrence matrix (NCM), Statistical modeling

Paper type Research paper

1. Introduction

Camouflage detection aims toward the detection of foreground image that is hidden in the background image. In general, many autonomous vision systems undergo the problem of detecting camouflaged objects in complex background environment condition. While detecting the object from background, there are many issues such as illumination, moving background, shadow and random texture in the background (Ariel and Yehezkel, 2000). Hence, complex models need to be developed through stochastic approaches for better understanding of random environments in camouflaged images. There are many statistical models proposed by researchers to detect objects' complex backgrounds using GLCM, wavelets-based approaches and texture statistics (Anderson and McOwan, 2013; Huerta *et al.*, 2007; Kavitha *et al.*, 2011; Sastry *et al.*, 2004). Since camouflaged objects are usually

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THERMOPHORESIS AND BUOYANCY EFFECTS ON CHEMICALLY REACTIVE UPPER CONVECTED MAXWELL FLUID FLOW INDUCED BY AN EXPONENTIALLY STRETCHING SHEET: APPLICATION OF CATTANEO-CHRISTOV HEAT FLUX

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ABSTRACT

The main intention of this study is to explore Maxwell fluid under the influence of thermophoresis and buoyancy forces induced by exponentially stretching sheet under chemical reaction. Cattaneo –Christov heat flux model is used to explore heat and mass characteristics with variable magnetic field, and chemical reaction. Variables of similarity were induced to transmute partial differential equations into dimensionless equations and are resolved numerically by elegant method bvp 4c. Behavior of various critical parameters on velocity, temperature and concentrations is graphically presented and discussed. Non Newtonian nature of the Maxwell fluid is clearly explored by the Maxwell parameter, it was found that for higher values of Maxwell parameter velocity profiles decreases. Thermal and solutal buoyancy forces acts in favor to velocity and thermophorotic parameter acts against concentration. Impact of Skin friction, Sherwood and Nusselt numbers on the flow configurations for diverse critical parameters are exposed realistically via graphs. Arithmetical results that obtained in the current exploration are confirmed with previously explored values in very marginal way.

Key words: *Maxwell fluid, Cattaneo Christov heat flux model, Buoyancy forces, Upper Convection*

1. INTRODUCTION

MHD flow intensifies the curiosity of many researchers in modern era for the reason that it plays immense role in numerous applications in all fields of science and technology like plasma physics, aerodynamics, astrophysics and super conduction coils, polyethylene industries, coatings, biomedical applications, drug transportations and so forth. Numerous classical theories and transport models of heat and mass transfer are available in the literature. In these models both thermal and concentration relaxation features were involved. Fourier (1822) and Fick (1855) described the phenomenon of heat and mass transfer. The main inadequacy of the Fourier's law known as "Paradox of heat conduction" is that it leads the energy equation to a parabolic equation. To overcome this paradox, several modified versions of the Fourier's law have been introduced. Cattaneo (1948) in his experiment included heat flux relaxation time required to establish steady conduction once a temperature gradient is imposed. Later Christov (2009) proposed a modification to the time derivative in the Maxwell-Cattaneo model with the Oldroyd upper-convected derivative preserving material invariant formulation. Hayat et al. (2016) studied three -dimensional flow of nanofluid with Cattaneo–Christov double diffusion under Brownian motion and thermophoresis effects. Sui *et al.* (2016) in their paper reported that higher values of slip parameter decelerates velocity and skin friction. Awais *et al.* (2018) analyzed that heat transfer rate decays for advanced relaxation time whereas it increases for higher Prandtl number.

The viscosity of the fluids like paints, greases, lubricant oils coal tar, jellies, and paste varies depending upon the influences like shear in fluid, pressure and temperature. These fluids are non-Newtonian in nature. In view of various rheological properties of non-Newtonian fluids several constitutive relationships between stress and rate of shear are examined. Fluids of non-Newtonian types are mainly distributed among integral, rate and differential types. Maxwell fluid falls under rate type non-viscous fluids category. This class illustrates the relaxation time effects. Fetecau (2003) obtained exact solution for Maxwell fluid flow. Umer Farooq *et al* .(2019) considered Buongiorno model to explore properties of Maxwell fluid with nanomaterial over stretching surface. Wubshet Ibrahim *et al.* (2020) scrutinized upper convected slip effects of stagnation point flow of

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Solid State Technology

An Effective Approach for Virtual Machine Migration and Dynamic Placement Using Elephant Herd Optimization

J. Venkata Krishna, Dr. G. Apparao Naidu, Dr. Niraj Upadhayaya

Abstract

Cloud computing is a platform for offering computational services as a method to deal with multiple problems in virtualized data management. Therefore, it is necessary to position and migration of virtual machines in order to accomplish several contradictory objectives. This work explores the state-of-the-art in the field in regards to the difficulty of these tasks and the vast number of existing proposals. Cloud Measurement combines new technologies that shape our lives in a way that saves investments in the upfront infrastructure for consumers operating on VMs on physics machines provided by a cloud service. Multiple VMs on the same PM could have different work completion times due to the heterogeneity of numerous works. PMs are heterogeneous in the meantime as well. Consequently, multiple VM placements have differing completion periods. Our goal is to reduce the completion time for VM input requests through a realistic schedule for VM placement. This dilemma is NP-hard so it can be simplified to a problem with knapsack. We suggest an offline approach for VM placement by way of emulated VM migration, and an actual migration mechanism for VM solves the online VM placement. The migration algorithm is a heuristic approach, where we explicitly position the VM to its best PM, given that it is capable of doing so. Otherwise we can move another VM from this PM to handle the new VM if the migration limitation is met. In addition, this work incorporates and suggests the introduction of the online dynamic positioning Elephant Herd Optimization (EHO) approach, and the assessment results show the high efficiency of the proposed algorithm.

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Hybrid Privacy for Social Media Content using Convolutional Neural Networks (CNNs)

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Abstract: One of the fast-growing fields in computer science engineering is Online Social Networking Sites (OSNS). Every day many people are registering with OSNS to share ideas, make friends, and do other types of activities. With the new users in the OSNS, large data is generated every day by storing users' profiles for further activities. In OSNS, security and privacy are most widely used to prevent attacks on OSNS sever and also personal profiles. It is very important to every user to have privacy for the multimedia content which is accessed by the user. Deep Learning (DL) is the most trending domain nowadays to work on OSNS. In this paper, A Hybrid Privacy for Social Media Content system is introduced to detect the type of image that is uploaded by the OSN user. The proposed system is focused on providing privacy to prevent the user's data from being attacked. The proposed system is integrated with robust pre-processing, Convolutional neural networks (CNNs), and Adaptive Privacy Policy Prediction (A3P). Results show the performance of the proposed system.

Keywords: CNN, A3P, OSNS, DL, Privacy.

Introduction

Online Social Networking Site (OSNS) becomes more popular to communicate the multiple users at the time. This will create more virtual communication among the OSNS users [1]. This social network represents the relationship between various users, companies, and their activities are represented in a social graph. In the graph, all these objects are represented as edges of the graph. By using this platform, the users will create relationships among similar users in terms of views, ideas, and other types of real-life connections among the users [2]. Adaptive Privacy Policy Prediction (A3P) is one of the privacy policy which is used to set the privacy for the user uploaded images. Integration of CNN with A3P gives the accurate and better classification of images and privacy for the users profile data.

OSNS become the most popular and this becomes the culture for a huge number of online users. Merging similar profiles with various communication techniques enables the users to be "in touch" with the OSNs users. Deep learning (DL) is most widely used to identify the various types of images according to the given input. This is mainly focused on classifying the images based on the dataset. The user can upload and share the images and texts in OSNS. Many users check someone's profiles and misuse the profiles by morphing the profile images and photos of OSNS users. DL provides a huge alert on image classification done in OSNS. In this paper, the hybrid privacy algorithm is developed by using the Convolutional neural networks (CNN) and

Research Article

Kadivendi Srinivas*, Pandu R. Vundavilli, and M. Manzoor Hussain

Experimental investigation on microstructural characterization and mechanical properties of plasma arc welded Inconel 617 plates

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Abstract: Welding of Inconel is a difficult task due to its tendency to crack and posing intricacies to the welder. However, it is extensively used in applications where resistance to oxidation at elevated temperatures is required. Therefore, it is important to note that the welding of Inconel alloys is demanding. Under such circumstances, one has to automate the welding of Inconel 617 alloy to eliminate some of the process uncertainties. Plasma arc welding (PAW) is a highly non-linear process that can be automated easily, and it can provide more focussed arc to weld the high strength and creep-resistant alloys. In the present research, PAW process is employed on 2 mm thick Inconel 617 plates by varying the key process parameters, such as welding current and welding speed. Initially, bead on plate (BoP) experiments were conducted to determine the suitable range of welding parameters to weld the super alloy. Subsequently, butt welding of the plates was performed based on the results of BoP welding. Furthermore, a study was conducted to determine the influence of the welding process parameters on the microstructural and mechanical properties of the butt joints.

Keywords: Inconel 617 super alloy, plasma arc welding, microstructure, mechanical properties

1 Introduction

Inconel 617, solid solution nickel-based alloy, has been extensively used in the elevated temperature applications due to its tremendous oxidation resistance, better mechanical properties and phase stability at higher temperature [1]. This alloy is mainly used in aircraft and land-based gas turbine engines for combustor, transition ducting and exhaust system components [2]. Super alloy 617 is also used for the manufacture of machinery to operate the Next Generation Nuclear Plant service temperatures from 650 to 1,000°C [3]. Inconel 617 maintains its tensile properties with slight change, at a wide range of temperatures (77–1,093 K) in various environments like salt/vacuum exposures for long periods [4]. Nickel-based super alloys are considered to be very difficult to weld and repair because of their vulnerability to heat-affected zone (HAZ) and weld metal cracking during fabrication, post-weld heat treatment (PWHT) and subsequent operation [5]. Janaki Ram et al. [6] conducted experiments on 2 mm thick Inconel 718 using electron beam welding. They reported microstructures of bead on plate (BoP) welding, high temperature tensile properties and stress rupture properties. Shah Hosseini et al. [7] had welded the Inconel 617 and SS 310 materials by using gas tungsten arc welding. Furthermore, they investigated the zonular mechanical properties of weldment by performing shear punch test. Henderson et al. [8] described the characteristic defects observed in the welding of Ni-based super alloys. They also analysed the weldability of nickel-based super alloys using gas tungsten arc, electron beam, laser welding and friction or inertia bonding. Richards and Chaturvedi [9] presented the effect of minor elements like C, B, S, P and others on the weldability of nickel-based super alloys. Moreover, Fontana et al. [10] described the high-power CO_2 and Nd:YAG laser welding of super alloys for manufacturing of aero engines and power plant components. They observed solidified microstructures in the fusion zone and the microfissures in the HAZ of Inconel 718. Furthermore, they also

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Computational comparison and experimental performance analysis on heat pipes using concentrating solar parabolic trough collector

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Abstract

The heat pipes in solar applications uses are important and it is significantly growing nowadays. Capable of meeting the world's challenges with a threat to the climate; a shortage of conventional energy sources, usually fossil fuels, high electricity costs, and it is inexpensive; therefore, the renewable energy of solar energy is an excellent source, reaching total amount of energy is 34,00,000 EJ in each year, all over the world. This is between 7000 and 8000 times the annual global primary energy consumption. Thereby, a Concentrating Solar Parabolic Trough Collector is suggested in this paper, which can be used to analyze the performance of various heat pipes. Using solar parabolic trough collector to analyze the performance of different heat pipes rather than considering the supply of electric power input. Using a parabolic trough collector that concentrates solar energy on an evacuated tube heat pipe, which converts radiation energy into electrical energy heat, the experimental work demonstrates the use of solar energy. Condensers, evaporators, and three heat pipes consisting of aluminum galvanized iron, and stainless steel materials are the main components. A porous wick structure and an ammonia solution-filled working fluid consist of each heat pipe. Continuously recirculating the working fluid through temperature variation. The readings are taken using connected thermocouples on three heat pipes by continuously varying the mass flow rate. The vacuum pressure gauge to maintain the heat pipes generates the vacuum inside space. At various mass flow rates of heated water from the parabolic trough collector, experimentation was also performed. The result of this study calculates the mass flow rate at the end of the process of the different heat pipes used here. Furthermore, different inclinations are estimated in a variety of situations, such as at temperatures of 15°, 30°, 45°, and 60°. In the experimental analysis, outlet temperatures of heat pipes are measured and the temperature distribution contours are evaluated using the analysis of computational fluid dynamics.

Keywords

concentrated solar parabolic trough collector, heat pipe, heat transfer, thermocouple, thermometer, mass flow rates, computational fluid dynamics

Introduction

The development of technology uses energy from the sun that is available in most places. Using photovoltaic modules and solar thermal collectors for residential and commercial applications at temperatures of 60°C–300°C, solar energy is extracted. Solar concentrators along with solar collectors are devices employed for the energy of concentrating solar for different functions, viz solar concentrator air heaters, solar collector-based water heaters, Concentrating Solar Parabolic Trough Collector (CSPTC)-based steam generators, CSPTC-based solar water treatment technologies, CSPTC-based solar cookers.[1] To directly transfer heat, solar thermal collectors utilize heat-absorbing panels. The solar panels for hot water are referred to commonly for solar collectors but may concern systems such as solar towers and parabolic troughs.[2] For heating, solar energy is utilized here and to produce steam in large quantities, which can run the generator to develop electricity. Imaging and non-imaging types are the types of solar collectors. A concentrator of type non-imaging with the ability to concentrate rays on a smaller absorber surface is the compound parabolic concentrator.[3] When the sunray falling on the absorber does not maintain the concentration with such a CSPTC design.[4]

The line-focus concentrated solar system that is used to develop working fluids at medium or high temperatures is the type the CSPTC.[5] The basic types are thermal oil and water/steam, according to the heat-transfer medium types in the solar absorber. In several countries, particularly in the USA, a solar energy generating system has been developed with oil of thermal as a heat transfer fluid. Consequently, the green electricity generated has boosted the impetus for the

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Abstract

The study of residual stresses induced during machining is of considerable importance due to their effect on fatigue life of machined components. The metallurgical changes occurred due to thermo-mechanical phenomenon in cutting process affects the distribution of residual stress in machined components. Ultrasonic vibration assisted turning (UVAT) is effective machining process for low thermal conductivity materials like Ti6Al4V alloy and improves the surface characteristics by reducing cutting force and cutting temperature. In this paper, experimental and finite element (FE) studies are conducted to study the circumferential and axial residual stress distribution in UVAT of Ti6Al4V alloy. FE model is developed to study the effect of vibrating parameter (ultrasonic power intensity) and cutting parameters (cutting speed, feed rate, and depth of cut) on the residual stress profiles of machined surface. The FE simulation results of cutting force and cutting temperature are validated with experimental results. The circumferential and axial surface residual stresses obtained from FE simulation are also compared with experimental results using X-ray diffraction method. The effect of thermo-mechanical loading on residual stress distribution is analyzed with respect to force components (cutting force and feed force) and cutting temperature. Finally, the effect of each cutting parameter on subsurface layer of machined component is analyzed.

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Defect Detection using Depth Resolvable Statistical Post Processing in Non-Stationary Thermal Wave Imaging

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Abstract

Defects that are generated during various phases of manufacturing or transporting limit the future applicability and serviceability of materials. In order to detect these defects a non-destructive testing modality is required. Depth resolvable subsurface anomaly detection in non-stationary thermal wave imaging is a vital outcome for a reliable prominent investigation of materials due to its fast, remote and non-destructive features. The present work solves the 3-Dimensional heat diffusion equation under the stipulated boundary conditions using green's function based analytical approach for recently introduced quadratic frequency modulated thermal wave imaging (with FLIR SC 655A as infrared sensor with spectral range of 7.5-14μm and 25 fps) to explore the subsurface details with improved sensitivity and resolution. The temperature response obtained by solving the 3-Dimensional heat diffusion equation is used along with random projection-based statistical post-processing approach to resolve the subsurface details by imposing a band of low frequencies (0.01-0.1 Hz) over a carbon fiber reinforced polymer for experimentation and extracting orthonormal projection coefficients to improve the defect detection with enhanced depth resolution. Orthonormal projection coefficients are obtained by projecting the orthonormal features of the random vectors that are extracted by using Gram-Schmidt algorithm, on the mean removed dynamic thermal data. Further, defect detectability of random projection-based post-processing approach is validated by comparing the full width at half maxima (FWHM) and signal to noise ratio (SNR) of the processed results of the conventional approaches. Random projection provides detailed visualization of defects with 31% detectability even for deeper and small defects in contrast to conventional post processing modalities. Additionally, the subsurface anomalies are compared with their sizes based on full width at half maxima (FWHM) with a maximum error of 0.99% for random projection approach.

Keywords: Non-Stationary Thermal Wave Imaging (NSTWI); Fast Fourier Transform (FFT); Correlation; Random Projection Transform (RPT).

1- Introduction

Subsurface analysis for non-stationary thermal wave imaging (NSTWI) gaining importance from the past decades due to its distinct wide, fast, non-invasive and remote testing properties. Different processing techniques are available to get the hidden features of the material. Out of them, the conventional phase approach is mostly used due to reduced non-uniform emissivity and radiation. Even though the conventional phase-based analysis gives the subsurface details, but it is not used to get deeper details due to its limited frequency resolution. This paper focuses on the recently introduced depth resolvable post-processing approach to provide fine subsurface details with improved frequency resolvable NSTWI technique.

Active infrared thermography is one of the non-destructive testing (NDT) methods to test the integrity of the material,[1] without impairing its future utility. In active infrared thermography, subsurface analysis is done by comparing the thermal response obtained by variations in thermophysical properties of diffused waves at anomalies of different depths. Pulse thermography (PT), lock-in thermography (LT), pulse phase thermography (PPT) and non-stationary thermography are various techniques of active thermography classified on the employment of optical input.

A large power rectangular input with less duration is used to test the integrity of the object in PT,[2] but the obligation of more power along with non-uniform effects limits it. In

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Energy efficient cluster based routing for wireless sensor networks using moth levy adopted artificial electric field algorithm and customized grey wolf optimization algorithm

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Keywords:
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ABSTRACT

Clustering is an effective strategy for routing algorithms in Wireless Sensor Networks (WSNs), which increases the network's lifetime and scalability. In the clustered WSN, the Cluster Head (CH) plays a vital role in data transmission. So far, much research work has already existed in regards to cluster-based routing. Despite this, they have challenges with fault tolerance, unequal load balancing, and local optimal solutions. To address these problems, this research presents a novel method for cluster based routing that makes the routing progress more effective to maximize the network lifetime. This has been carried out under two phases: selecting the optimal cluster head via the new Moth Levy adopted Artificial Electric Field Algorithm (ML-AEFA), and the data transmission is carried out by the new Customized Grey Wolf Optimization (CGWO) algorithm. Here, the selection of the optimal CH is performed under the consideration of energy, node degree, distance among the sensor nodes, distance among the CH and Base Station (BS), and time of death node. Finally, the implemented method's performance is compared to that of existing schemes using various measures. In particular, the network life time of the proposed work for scenario 1 (number of nodes = 100) is 38.77%, 38.77%, 35.04%, 34.43%, and 33.08% better than the existing GWO, MSA, AEFA, BOA + ACO, and improved ACO methods respectively.

1. Introduction

WSN plays a vital role in our day-to-day life as the networks are widely used in several fields [1] like military monitoring, manufacturing and industrial automation, underwater detection, monitoring areas, agricultural field, defense domain, weather forecasting, medical field, traffic control networks and various commercial applications [2]. Nevertheless, the routing protocol design might affect due to the factors like real-time monitoring, nodes deployment approach, security, and energy consumption [3, 4]. This network [5, 6] includes thousands of sensor nodes for evaluating, receiving and sensing the data that were distributed in the environment [7]. Moreover, these sensor nodes [8, 9] are more complex and it uses limited battery as their power source [10]. Henceforth, the key issue is the inadequate power sources that lead to node failure [11].

WSN routing is the major aspect, as this comes out with the responsibility of data transmission more efficiently [12, 13]. There exist different routing protocols including Central data, hierarchical, and location-based routing protocols, mainly which provides quality of service guarantees and data flow [14]. In addition, the networks are categorized into homogeneous and heterogeneous networks on the basis of sensor nodes initial energies [15, 16]. The major hierarchical routing protocols consists of the Hybrid Energy Efficient Distributed (HEED), Stable Election Protocol (SEP), Low-Energy Adaptive Cluster Hierarchical (LEACH), and Distributed Energy-Efficient Clustering (DEEC), etc. The hierarchical routing protocols are implemented through different clustering algorithm [17]. Here, the sensor nodes are splitted into member nodes and CH nodes based on the clustered topology management [18, 19]. Further, the CH node could collect and combine the information inside its cluster and forwarded between the clusters and BS [20].

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RESEARCH ARTICLE

Prediction of software defects using deep learning with improved cuckoo search algorithm

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Summary

The software project model needs a defect prediction model to find defect-prone file software systems. The fault-prone model prediction, predicting bugs, and bug removal can undertake the software industry to achieve software quality. Therefore, automatically forecasting the number of errors in software modules is important, and it may assist developers in allocating limited resources more efficiently. Several methods for detecting and repairing such flaws at a low cost have been offered. These approaches, on the other hand, need to be significantly improved in terms of performance. Hence in this article, we implement an ensemble technique for the software defect prediction and prediction of the software bug. Also, we proposed a hybrid technique to predict several defects in the software system. The proposed approach uses principle component analysis for feature extraction which is to improve further performance and control the optimization problem. Classifiers were applied to five PROMISE datasets to determine the greatest implemented classifier with respect to the prediction achievement measuring factor. Our proposed model yields greater results on solving defect prediction problems and showing enhancement toward the existing model.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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Transcending Patriarchal and Cultural Construct in Bapsi Sidhwa's *The Pakistani Bride*

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***Abstract*—This study aims to show how patriarchal civilizations physically, emotionally, and socially oppress and enslave women. Sidhwa has shown Pakistani gender-based class system quite effectively in her work. She discusses marginalized and double-colonized Pakistani women as victims of patriarchal culture who confront a variety of national and household challenges, and overcomes patriarchal and cultural constructs in order to be in peace with society and culture. This paper 'Transcending Patriarchal and Cultural Construct in Bapsi Sidhwa's *The Pakistani Bride*', attempts to show how women in patriarchal cultures and societies suffer many issues in their lives and how they repress their needs, longings, and emotions in order to find a comfortable position in their households as well as in society at large.**

***Index Terms*—patriarchal, cultural, oppression, marginalized, liberty**

I. Introduction

Bapsi Sidhwa is the most well-known English-language author in Pakistan. In the field of common wealth fiction, she is a fresh and essential voice. She was born into an illustrious family in Karachi on August 11, 1938. Sidhwa's family relocated to Lahore shortly after she was born, but there were few Parsees there, and the Bhandara family was cut off from mainstream Parsee life. Sidhwa's work benefits greatly from his multilingual and multicultural upbringing. Sidhwa self-published her novel *The Crow Eaters* in 1978, at a period when publishing in English was almost non-existent in Pakistan. *The Crow Eaters* has since been published and translated in a number of European and Asian countries, and while *The Pakistani Bride* (1982) was Sidhwa's first novel, it was the second to be published under the moniker Crackling India, also known as *Ice-Candy Man*. In Germany, Sidhwa's third novel won the Literature Prize, and the American Library Association named it a Notable Book the same year. *An American Brat* was published in 1993, and Sidhwa's recent work, *Water*, was released in 2006.

Women the world over, through the ages, asked to be murdered, raped, exploited, enslaved, to get importunately impregnated, beaten up, bullied and disinherited. It was an immutable law of nature (Sidhwa, *Pakistani* 226). By saying so in her second work, *The Pakistani Bride* (1982), Bapsi Sidhwa draws our attention to the wife's social standing in Pakistan. The novel was initially titled The Bride, but was then renamed The *Pakistani Bride* and published in India in 1982 for a better comprehension of the story. Bapsi Sidhwa's novel *The Pakistani Bride* addresses a variety of issues that Pakistani women face. Sidhwa explores women's status at various levels of the social system. Women in the region are denied the right to speak out on local, national, and international concerns. Their fundamental rights are being eroded. The female characters in the tale are strong and powerful. To achieve their identity, they fight against Pakistan's chauvinistic patriarchal society. At last, women reclaim control of their lives.

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APPLICATIONS OF EMERGING GREEN TECHNOLOGIES FOR EFFICIENT VALORIZATION OF AGRO-INDUSTRIAL WASTE: A ROADMAP TOWARDS SUSTAINABLE ENVIRONMENT AND CIRCULAR ECONOMY

Assessing the bioactive potential of low-cost textile dyes extracted from brown seaweeds and their dyeing properties

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Abstract

This study focuses on the extraction and dyeing properties of natural fabric dyes derived from brown seaweeds, namely *Padina tetrastromatica*, *Sargassum tenerrimum*, and *Turbinaria ornata*. Various solvents (acetone, ethanol, methanol, and water) and mordants (CH_3 COOH, $FeSO_4$, and $NaHCO_3$) were used to extract the dyes and achieve different shades with excellent fastness properties. Phytochemical and FTIR analyses were performed to identify the phytochemicals responsible for dyeing. The dyed cotton fabrics exhibited a range of colors based on the mordants and solvents used. Fastness assessments revealed that aqueous and ethanol dye extracts exhibited superior properties compared to acetone and methanol extracts. The influence of mordants on cotton fibers' fastness properties was also evaluated. In addition to the above findings, this study makes a significant contribution to the field by exploring the bioactive potential of natural fabric dyes derived from brown seaweeds. The utilization of these abundant and low-cost seaweed sources for dye extraction provides a sustainable alternative to synthetic dyes, addressing environmental concerns associated with the textile industry. Furthermore, the comprehensive analysis of different solvents and mordants in obtaining various shades and excellent fastness properties enhances our understanding of the dyeing process and opens avenues for further research in the development of eco-friendly textile dyes.

Keywords Natural dye extraction · Mordants · Fastness properties · Fabric dyes · Brown seaweeds

Introduction

A brightly colored organic substance called a dye can firmly adhere to substrates like fibers, food, and other items through chemical and physical bonds between the dye group and the group already present on the substrate. The leftover dyes from various industries, including those in the textile, pulp and paper, pharmaceutical, and tannery industries, are among the many organic pollutants that are introduced into

Highlights
- Properties of natural dyes were studied.
- Dye extraction from brown seaweeds was explained in detail.
- CIE- L* a* b* analysis was reported and explained in clear.
- Chemical constituents of the dyes were studied.
- Durability of the seaweed dye was elucidated.

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TECHNICAL ARTICLE

Corrosion Behavior of Commercially Pure Aluminum Processed through Conventional and New ECAP Dies

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This research article presents the Corrosion behavior of Equal Channel Angular Pressing (ECAP) and annealed commercial pure aluminum. To investigate experimentally, the ECAP process has been carried out up to third pass of Route A and Route C through a conventional and new dies and the results of the process showed a significant grain refinement with the high-angle of grain boundary. ECAP through a new die resulted in reduced friction, minimized recrystallization, and refined grain size. After the first pass and third pass Route C processing through the conventional die, the sample showed improvement in hardness of about 79 and 127%, respectively, and for the new die the values are found to be 83 and 151%. The corrosion studies were carried out through immersion test, salt spray analysis, and potentiodynamic polarization on annealed and ECAP-processed specimens. The immersion test showed a reduction in the corrosion rate after first pass followed by a slight increase in corrosion rate with further passes of ECAP. The results of both salt spray and polarization methods showed improved corrosion resistance with increasing the number of passes in ECAP process. The polarization curve of ECAPed specimens revealed an active region followed by a passive region while no passivating condition for the annealed specimen. Similarly, EIS plot showed diffusion layer formation with ECAPed samples. SEM analysis showed small and uniform pits with an ECAPed sample while larger pits with an annealed sample. Tafel kinetic ensured the improvement of corrosion resistance in ECAPed specimens due to UFG structure with HAGB and significant refinement in the microstructure. The specimens were processed through Route C in a new die provisioned for corrosion resistance enhancement.

Keywords aluminum, corrosion, ECAP, immersion test, polarization, salt spray test

1. Introduction

Aluminum and its alloys are light in weight, have a high strength-to-weight ratio, and exhibit excellent corrosion resistance because of the formation of a thin protective passive layer on the surface of components. Because of these qualities, the applications of aluminum alloys were found in many applications like automobiles, aerospace, and marine applications. Being FCC-structured material, the aluminum alloys show low critical resolved shear stress. To resolve this, the aluminum alloys are processed through precipitation hardening, dispersion strengthening, and/or grain size strengthening. ECAP is also a kind technique used for grain size reduction involving severe plastic deformation through shear without altering the work-piece dimension. It results in highly strained ultrafine grains/nanograins and this lead to superior strength and ductility (Ref 1-5) of the materials.

Young Kuk Kim (Ref 6) performed the ECAP process on low-carbon steel and obtained a ferrite grain size of 0.2 μm. The microstructural characterization revealed the presence of high dislocation density inside the grains and grain boundaries. Further, ECAPed sample subjected to annealing at 753 K resulted in cementite precipitation which improved the microstructure stability (Ref 6). Dong Hyuk Shin (Ref 7) reported a 100% improvement in the strength of low-carbon steel subjected to the ECAP process due to the formation of ultrafine grain with homogenously distributed fine cementite particles (Ref 7). Zenji Horita (Ref 8) reported significant improvement in 0.2% offset strength and ultimate tensile strength of a series of aluminum-based alloys (1100, 2024, 3004, 5083, 6061, and 7075) subjected to the ECAP process (Ref 8). Terhune (Ref 9) reported the formation of homogenous microstructure and microtexture on repetitive ECAP of pure aluminum by route B_C. The grain size of the sample was significantly reduced to 1 μm along with an increased population of high-angle boundaries $\geq 15°$ after 12 ECAP passes (Ref 9). Miroslav Greger (Ref 10) have reported improved tensile strength of about 960 MPa for pure titanium during ECAP (Ref 10). Krishna Mohan Agarwal (Ref 11) explores the application of the ECAP process for producing ultrafine-grained titanium alloy for biomedical applications. Most of the ECAP research works are mainly focused on microstructural refinement of grains, micro texture orientation and its resulting influence on mechanical properties such as tensile strength, impact toughness, fatigue properties and also thermal stability

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Research article

Recent advances in remediation strategies for mitigating the impacts of emerging pollutants in water and ensuring environmental sustainability

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ARTICLE INFO

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ABSTRACT

The proliferation of emerging pollutants (EPs), encompassing a range of substances such as phthalates, phenolics, pharmaceuticals, pesticides, personal care products, surfactants, and disinfection agents, has become a significant global concern due to their potential risks to the environment and human well-being. Over the past two decades, numerous research studies have investigated the presence of EPs in wastewater and aquatic ecosystems, with the United States Environmental Protection Agency (USEPA) categorizing these newly introduced chemical compounds as emerging contaminants due to their poorly understood impact. EPs have been linked to adverse health effects in humans, including genotoxic and cytotoxic effects, as well as conditions such as obesity, diabetes, cardiovascular disease, and reproductive abnormalities, often associated with their estrogenic action. Microalgae have shown promise in the detoxification of both inorganic and organic contaminants, and several large-scale microalgal systems for wastewater treatment have been developed. However, the progress of algal bioremediation can be influenced by accidental contaminations and operational challenges encountered in pilot-scale research. Microalgae employ various processes, such as bioadsorption, biouptake, and biodegradation, to effectively remediate EPs. During microalgal biodegradation, complex chemical compounds are transformed into simpler substances through catalytic metabolic degradation. Integrating algal bioremediation with existing treatment methodologies offers a viable approach for efficiently eliminating EPs from wastewater. This review focuses on the use of algal-based biological remediation processes for wastewater treatment, the environmental impacts of EPs, and the challenges associated with implementing algal bioremediation systems to effectively remove emerging pollutants.

1. Introduction

The global phenomenon of globalization has led to the regular discharge of various unknown toxic chemicals into terrestrial and aquatic environments. The 3rd World Water Forum held in Kyoto, Japan, in 2002 raised awareness about the release of nearly 2 million tonnes of pollutants from sewage, agricultural waste, and industrial waste into water channels worldwide, resulting in the production of 1500 km³ of wastewater daily (Gallareta-Olivares et al., 2023). The toxicological effects of these chemical exposures and their impact on public health have become a growing concern (Plattard et al., 2021). Emerging pollutants (EPs), including organic compounds such as pharmaceutical pollutants, brominated flame retardants, personal care products, perfluorinated compounds, and plasticizers, have been discovered in water surfaces, wastewater, and sediments, causing increasing environmental

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Deep learning-based sustainable subsurface anomaly detection in Barker-coded thermal wave imaging

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Abstract

Deep learning-based sustainable subsurface for anomaly detection in different materials is an objective to improve the reliability of thermographic inspection. This article aims to describe a method that uses Barker-coded thermal wave imaging to identify subsurface anomalies in materials. The novelty of the proposed methodology is to detect smaller defects at a higher depth even on a fully corroded sample of mild steel. Experiments were carried out with different kinds of samples like mild steel and glass fiber reinforced plastic (GFRP). Various commonly used modern post-processing techniques are applied alongside the proposed techniques for detecting subsurface anomalies. Subsurface anomalies visualized using the proposed deep learning method give better visualization and results when compared to that of other approaches. In addition to it, region-based active contour segmentation-based detection is also proposed for the GFRP sample. This study results in a high signal-to-noise ratio (SNR) of value 108 dB; the least error in defect size is nearly 0.01% using full width at half maximum (FWHM), and the aspect ratio is nearly 1 for the proposed convolutional neural network (CNN)-based processing approach.

Keywords Deep learning · Probability of detection · Barker-coded thermal wave imaging · SNR · Active contour segmentation

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1 Introduction

Non-destructive testing and evaluation (NDT&E) practices play prominent responsibility in examining the numerous resources to test the integrity of structures. From a few decades, focused research has been carried out towards defect detection (cracks, voids, disbonds, etc.), concerning various applications namely civil, electronics, mechanical, and aeronautics. In addition to the numerous methods under non-destructive testers, active infrared thermography comes under non-contact, non-damaging, non-invasive, and reliable techniques and is utilized for subsurface anomaly identification of several materials [1–5]. Infrared thermography is categorized into two methods of inspection: passive thermography and active thermography. Passive thermography is performed by measuring the natural thermal response over the object's surface for subsurface defect characterization. However, passive thermography is unable to detect deeper defects with good contrast, due to its limitedness to provide sufficient contrast over the sample object tested. Towards the goal of providing

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A novel hybrid machine learning approach for traffic sign detection using CNN-GRNN

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Abstract. The traffic signal recognition model plays a significant role in the intelligent transportation model, as traffic signals aid the drivers to driving the more professional with awareness. The primary goal of this paper is to proposes model that works for the recognition and detection of traffic signals. This work proposes the pre-processing and segmentation approach applying machine learning techniques are occurred recent trends of study. Initially, the median filter & histogram equalization technique is utilized for pre-processing the traffic signal images, and also information of the figures being increased. The contrast of the figures upgraded, and information about the color shape of traffic signals are applied by the model. To localize the traffic signal in the obtained image, then this region of interest in traffic signal figures are extracted. The traffic signal recognition and classification experiments are managed depending on the German Traffic Signal Recognition Benchmark-(GTSRB). Various machine learning techniques such as Support Vector Machine (SVM), Extreme Learning Machine (ELM), Linear Discriminant Analysis (LDA), Principal Component Analysis (PCA), Convolutional neural network (CNN)- General Regression Neural Network (GRNN) is used for the classification process. Finally, the obtained results will be compare in terms of the performance metrics like accuracy, F1 score, kappa score, jaccard score, sensitivity, specificity, recall, and precision. The result shows that CNN-GRNN with HL techniques by attaining 99.41% accuracy compare to other intelligent methods. In this proposed technique is used for detecting and classifying various categories of traffic signals to improve the accuracy and effectiveness of the system.

Keywords: Traffic signal images, traffic signs, median filter, gabor filter, forecasting

Acronym description

GTSRB	German Traffic Signal Recognition Benchmark
SVM	Support Vector Machine
ELM	Extreme Learning Machine
SLFNs	single-hidden layer feedforward neural networks
MP	Moore-Penrose
CNN-GRNN	Convolutional neural network-General Regression Neural Network
LS	least-square

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RESEARCH Open Access

Performance evaluation of hybrid multilevel inverter with a high-frequency switching technique

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Abstract

This proposed work deals with the implementation of a single-phase topology with using hybrid for multilevel inverters. It is observed that the proposed structure improves the performance of the hybrid multilevel inverter with high-frequency switches for positive levels and reverse voltage with negative levels. This paper studies a novel construction for an asymmetrical hybrid single-phase multilevel inverter. This paper also studies the operation of multi level inverter under depreciating sources condition due to fluctuation in input. The PWM method, i.e. APOD and CO, has been incorporated into the simulation of single-phase 7-level, 9-level, and the 11-level hybrid inverter. These two methods are compared to one another and to standard methods in terms of THD for different values of the modulation index, and they are found to be superior. Overall loss of 50% of the THD is almost equal to rated output voltage, it is observed in cascaded multilevel inverters. The working and performance of the proposed model are simulated in MATLAB Simulink software and the results are discussed in detail.

Keywords: Cascaded hybrid multilevel inverter, THD, Inverter, Pulse width modulation, Performance

Introduction

The development of power electronics and switching devices yielded to development of multilevel inverters and their appropriateness for grid connections. There is a different kind of multilevel inverters having diversity in their operation [1–4]. From the power converter technology, the structures access the alliance of renewable energy systems for power generation. So, the researchers have more attention in this field to develop various topologies with different switching patterns to reduce part count as well as system performance improvement. In this connection cascaded multilevel inverters with a connection of input voltage sources to reach high-quality output voltage, input currents. So, in the power sector in the medium voltage range cascaded multi-level inverters (MLIs) substitute other trends [5, 6].

Recently a variety of modulation strategies are encountered in multilevel inverters. Because of advancements in multilevel inverters spreading in all corners of the power

Scopus

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Power factor improvement using silicon based switching devices for changing load parameters

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ABSTRACT

Systems power factor provides information on how effectively it uses the electrical power being provided to hold out real work. Losses rise as a results of poor power factor, and therefore the utility is penalized. In general, inductive loads, which are reactive in nature, make up AC loads. As a result, loads require and consume reactive power from the supply source which leads to excessive voltage drop in the line if they draw a lot of lagging current from the source, which could potentially result in the line's voltage collapsing if the drop is too high. When inductors cause a phase difference between voltage and current, the information is sent to the micro-controller, where the program takes control and activates the right number of opto-isolators interfaced to the triac silicon-based semiconductor device at its output to bring shunt capacitors into the load circuit to improve power factor to the desired range Semiconductors such as silicon or germanium are generally used for making triac. The most commonly used is silicon, due to its high abundance and the fact that it can operate at a higher temperature than germanium.

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1. INTRODUCTION

In general, AC loads are inductive loads that are reactive in nature. Inductance and capacitance are other circuit factors that control current flow [1]. The majority of industrial loads are inductive, which unnecessarily burdens the system by pulling lagging current. An electric network must maintain a constant voltage profile and create lossless power systems [2]. The traditional way to balance reactive power is to use a capacitor bank. When there is simply a resistive load in a circuit, the power factor is one, but when there is also an inductive or capacitive load, it is less than one. Due to higher power at the utility grid end, the generation and transmission costs rise when the power-factor is less than unity. As the load changes continuously, real-time reactive power adjustment is necessary. When this occurs, a fixed capacitor may overcompensate, causing an over voltage at the load end [3]. Therefore, a quick-acting device that can improve power factor and manage reactive power is required; this is where flexible alternating current transmission system (FACTS) devices come into play [4]. The FACTS device sometimes referred to as the flexible AC transmission system device, utilized external circuits, including semiconductor devices, to produce regulated output. The STATCOM, static synchronous series compensator (SSSC), and static VAR compensator (SVC) devices are the most well-known ones. In this project, controlled output for power factor enhancement is achieved by using a SVC device [5].

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Takagi–Sugeno–Kang Fuzzy Controller-based Single-Stage Grid-Connected PV System

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Abstract Grid-connected solar power plants are widely established in many places worldwide. Photovoltaic (PV)-based grid connected solar plants are attracting recently due to improvement in controlling of power converters. Single-stage grid-connected systems can reduce the number of converters connected in power plants which result in reducing the cost of the system. However, DC to DC converters are generally used in PV systems to enhance the operation of maximum power point for best utilization. The inverters also can be used to extract maximum power from PV systems through new controlling techniques in power electronics devises. Therefore, an extra DC to DC converter is not required to make PV at its maximum power point condition. However, this technology can be used for small-scale solar power plants since all PV arrays in solar power plant cannot receive the same irradiance. Takagi–Sugeno–Kang (TSK) fuzzy controller has significant priority than proportional plus integral controllers when rapid changes are there in input. Hence, TSK-based single-stage controller is developed in this paper for grid-connected 1MW solar plant. Generally distribution system is connected with unbalanced loads, hence these unbalanced loads will create forcefully unbalanced currents in electrical grid. Unbalanced grid currents further create many problems to other loads. Therefore, the proposed controller is designed to help making grid currents balanced during unbalanced local loads. Further, the inverter can compensate reactive power demanded by local loads to minimize reactive power supplied by grid. Extensive results are

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Hybrid Association Rules to Classify and Discovering Item sets based on User Knowledge

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ABSTRACT

Increase large luminous data is posing research concept to predict and effective analysis of data in different types of business oriented applications. Intelligence of business maintenance is an aggressive concept to provide analysis customers, employees and suppliers for more effective decision making. It is basic representation to update and enhance their business in different formats like quality of service, and achieve profitability for business organizations. To provide analysis of data effectively, traditionally some of the data mining approaches like Classification, Clustering and Association were used to provide and increase the efficiency in real time business organizations. Based on in depth analysis of data relates to data delivery, reporting and predictive analysis, data mining techniques have failure to elaborate business in real works. So it aims to explore the advanced and statistical techniques apart from existing data mining or modeling approaches. In this paper, we propose and implement a novel HDM approach (which consist Association rules and Classification rules) for effective analysis of large data sets. Our approach is increases the services like quality of service, customer service, and report generations in business organizations. Furthermore, hybrid data mining approach is designed to assist to user throughout data analyzing task. By applying our new approach over large data to integrate domain expert knowledge in post processing to reduce set of rules in business intelligence service analysis. Our experimental results show effective maintenance of customer service to reduce quality of filtered rules by domain expert knowledge with interactive process in real world business organizations.

Keywords: Intelligence of Business, Data mining, Hybrid approach, Classification, Clustering, Customer services, Quality of service and crystal reports.

I. INTRODUCTION

In business oriented organizations, mining information is the data innovation for different web application developments. Data mining is the way to retrieve data based on usage with respect to data relations present in data base. Knowledge based data discovery with respect to associate attributes. Association rule mining sequences is one of fundamental issue knowledge discovery procedure to define different data item sets while processing different transactional data bases, for effective decision maker to large data bases is an implicative tendency in that can be process valuable data.

To define data implication between different data sources, association is interesting measure, association between two data sources X and Y i.e. X→Y defined by two interesting parameters with following relations $X \cap Y = \phi$. Apriori [1] was the first calculation method to define above association between different data sources and then some of the other calculation methods are proposed from Apriori. For efficient relation between data sources association rules are maintain threshold based support and confidence. Mining algorithms that can find the different association rules based on several types of attributes with respect to different types of transactions. To extract valuable information is often

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MHD FLOW OVER AN EXPONENTIALLY STRETCHING SHEET WITH VISCOUS DISSIPATION AND HEAT GENERATION

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I. INTRODUCTION

In the last few decades, fluid flow with heat and mass transfer on a continuously stretching sheet has attracted considerable attention because of its many applications in industries, engineering and manufacturing processes. Examples of these applications include the glass-fiber production, wire drawing, paper production, plastic sheets, metal and polymer processing industries, hot rolling and continuous casting of metals and spinning of fibers. The kinematics of stretching and the simultaneous heating or cooling during such processes play an important role on the structure and quality of the final product. Many researchers inspired by Sakiadis [1,2] who initiated the boundary layer behavior studied the stretching flow problem in various aspects. Extension to that, an exact solution was given by Crane [3] for a boundary layer flow caused by stretching surface. Gupta [4], Carragher and Crane [5], Dutta *et al.* [6] studied the heat transfer in the flow over a stretching surface taking into account different aspects of the problem. Magyari and Keller [7] observed that the study of boundary layers on an exponentially stretching continuous surface with an exponential temperature distribution. Sanjayanand and Khan [8] studied the heat and mass transfer in a viscoelastic boundary layer flow over an exponentially stretching sheet. They found that the viscoelastic parameter enhances the thermal boundary layer thickness. The effect of viscous dissipation on the mixed convection heat transfer from an exponentially stretching surface was studied by Partha *et al.* [9]. They observed a rapid growth in the non-dimensional skin friction coefficient with the mixed convection parameter.

The characteristics desired of the final product in an extrusion process depend on the rate of stretching and cooling. Hence, it is very important to have a controlled cooling environment where the flow over the stretching sheet can be regulated by external agencies like a magnetic field. An exponential variation of a magnetic field is used, among other applications, to determine the diamagnetic susceptibility of plasma. Pavlov [10] considered the magnetohydrodynamic flow of an incompressible viscous fluid over a linearly stretching surface. Sarpakaya [11] extended Pavlov's work to non-Newtonian fluids. Subsequent studies by Andersson [12], Lawrence and Rao [13], Abel *et al.*[14], Cortell [15] concerned the magnetohydrodynamic flow of viscoelastic liquids over a stretching sheet.

Most of the earlier work neglected radiation effects. If the polymer extrusion process is placed in a thermally controlled environment, radiation could become important. Many researchers have considered the effect of thermal radiation on flows over stretching sheets. The influence of thermal radiation on the boundary layer flow due to an exponentially stretching sheet is studied by Sajid and Hayat [16]. Studies by Raptis [17], Raptis and Perdikis [18] address the effect of radiation in various situations. The effects of radiation on hydromagnetic boundary layer flow of a continuously stretching surface have attracted considerable attention in recent times due to its numerous applications in industry. Kameswaran *et al.*[19] observed that radiation effects on MHD Newtonian liquid flow due to an exponential stretching sheet. Seini and Makinde [20] studied effects of radiation and chemical reaction on MHD boundary layer flow over exponential stretching surface. Siddheshwar and Mahabaleswar [21] studied the effects of radiation and heat source on MHD flow of a viscoelastic liquid and heat transfer over a stretching sheet. Bidin and Nazar [22] studied the effects of numerical solution of the boundary layer flow over an exponentially stretching sheet with thermal radiation. Elbashbeshy and Dimian [23] analyzed boundary layer flow in the presence of radiation effect and heat transfer over the wedge with a viscous coefficient. Thermal radiation effects on hydro-magnetic flow due to an exponentially stretching sheet were studied by Reddy and Reddy [24]. Raptis *et al.* [25] studied the effect of thermal radiation on the magnetohydrodynamic flow of a viscous fluid past semi-infinite stationary plate and Hayat *et al.* [26] extended the analysis for the second grade fluid. Jat and Gopi Chand [27] found that the effects of dissipation and radiation on MHD flow and heat transfer over an exponentially stretching

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Teacher Designed Material Focusing on Integrated Skills Approach (ISA) To Teach a Prose Lesson – An Empirical Study

Dr. M. Srilakshmi and K. Jayasree

Abstract

According to Nunan (1992) teaching materials are often the most substantial and observable component of pedagogy. In general, students are taught English by using available course textbooks. In most of the cases learning materials in the text books are not appropriate to the requirements of the students. As long as teachers have the objectives of teaching, they should not get discouraged by such a situation. Once the teacher has the objective in mind and is familiar with the needs of the learners, he/she can develop his/her own materials for the learners to accomplish the objectives or to fulfill the learner's needs. While working on Teacher-produced materials, teachers have to be skillful in choosing or designing integrated activities for their students. Integrating the four language skills enhances the focus on realistic communication which is essential in developing students' competence in English. This article throws light on material developed by teacher integrating the four language skills to teach a selected prose lesson.

Introduction

According to Tomlinson (1998) materials development refers to anything which is done by writers, teachers or learners to provide sources of language input in ways which maximize the likelihood of intake. Generally, teachers try to use all teaching material given in the textbook. Text books are not aimed at any specific group of learners and they often try to focus on one particular skill in an unnatural way. In most of the cases a textbook does not always meet the variety of conditions in a language class (Ur, 1996; Richards, 2003). So, taking into consideration the demands and needs of students, teachers need to find teaching materials unavailable in the textbooks and alter them. In designing materials, teachers' observation and comprehension of their students is very important. While designing material the teacher must take into account the learning needs, learning preferences, learning interests, students experience etc. Also, materials development allows the teacher to promote the integration of skills as contrasted with the segregation approach. This enables the learners to acquire a clear picture of the nuances and complexity of the English language. Integrating language skills in developing material allows the teacher to keep an eye on students' progress in various skills at the same time. This way of designing material integrating the skills develops interest in students for English language and they look at it not just as a key to pass an examination but as a tool to interact with people and succeed in the later phase of their life.

Focus of This Article

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The Pathetic Story of 'Sorry'

Dr. M. Srilakshmi, M.A., M.Phil., Ph.D. and
M. Kiranmai, M.A., M.Phil., (Ph.D.)

Prelude

'Sorry' is one of the most misused words these days. When it comes to the true meaning of apologizing, the word 'Sorry' loses it's meaning as it is used without much thought and deliberation. Apologizing just for the sake of apologizing is meaningless. People cannot truly say 'Sorry' if they can't admit to themselves that they have made a mistake. The meaning of the word 'Sorry' gets diluted when it is used without a true resolve to change something, do better next time and admit oneself for a mistake. It can reflect regret that something happened, without actual remorse. The time has come to give the word 'Sorry' back its power. This story is a modest attempt to enlighten the society regarding the misuse of the word 'Sorry'. The paper deals with the story told by the word 'Sorry' personifying itself. The word 'Sorry narrates it's origin and different usages followed by a few instances on how it's status got deteriorated. Finally, it leaves the readers to choose between two options which definitely will enable the reader to introspect. Through the story the paper tries to bring change in the reader at the personal level and the society at the general level.

Story

For the clarity of readers:

1) 'I' and 'ME' = The word 'Sorry' personified
2) Phrases use ME, uses ME, using ME=saying sorry
3) To avoid confusion the words **I** and **ME** are given in bold letters.

The task of writing one's story is a difficult one. It is with a kind of guilt and fear **I** began to write my story. **I** have, as all have, a hesitation in unfolding the events of my life. A few impressions, both good and bad, in my life stand out vividly from the time of my origin. Many incidents of vital importance in my life have been forgotten in the excitement of watching my usage for different purposes. Therefore, not to be tedious, **I** shall try to present in a series of sketches only the episodes that seem to me to be useful for the benefit of the society.

I do not remember exactly but history says that **I** originated before 900 B.C. from old English Sarig which means 'painted, distressed', of West Germanic Origin, from the base of the

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Semi-2-Absorbing Ideals Of So-Rings

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Abstract- A partial semiring is a structure having an infinitary partial addition and a binary multiplication, subject to a set of axioms. In this paper we introduce the notions of 2-m-system, semi- 2-absorbing ideal and 2-p-system in so-rings and obtain their characteristics.

Keywords - Ideal, 2-absorbing ideal, semi-2-absorbing ideal, 2-m-system, 2-p-system, commutative so-ring.

I. INTRODUCTION

Partially defined infinitary operations occur in the contexts ranging from integration theory to programming language semantics. The general cardinal algebras studied by Tarski in 1949, Housdorff Topological commutative groups studied by Bourbaki in 1966, $\sum$ - structures studied by Higgs in 1980, sum-ordered partial monoids and sum-ordered partial semirings(so-rings) studied by Arbib, Manes and Benson [2], [4], and streenstrup [13] are some of the algebraic structures of the above type.

G.V.S. Acharyulu [1] and P.V.Srinivasa Rao [10] developed the ideal theory for the sum-ordered partial semirings (so-rings). Continuing this study, in [12] & [7] we introduced notation of 2-absorbing ideals of so-rings and obtained their characteristics in a commutative so-ring. In this paper, we introduce the notion of 2-m-system in so-rings and prove that a proper ideal Q is 2-absorbing ideal if and only if $R \setminus Q$ is a 2-m-system of R. Also we introduce the notions of semi-2-absorbing ideal and 2-p-system in so-rings and prove that a proper ideal Q is semi-2-absorbing ideal if $Q = ABS(Q)$, the set of intersection of all of 2-absorbing ideals of R containing Q.

II.PRELIMINARIES

In this section we collect some important definitions and results for our use in this paper.

2.1. Definition. [4] Let M be a non-empty set M, $\sum$ is a partial addition defined on some, but not necessarily all families $(x_i : i \in I)$ in M. Then the pair (M, $\sum$) said to be a *partial monoid* if they satisify the following axioms:

(i) Unary Sum Axiom. Consider $(x_i : i \in I)$ is a one element family in M, $I = \{j\}$. Then $\sum(x_i : i \in I)$ is defined and equals x_j.

(ii) Partition-Associativity Axiom. Consider $(x_i : i \in I)$ is a family in M, $(I_j : j \in J)$ is a partition of I. Then $(x_i : i \in I)$ is summable if and only if $(x_i : i \in I_j)$ is summable for every $j \in J$ and $(\sum(x_i : i \in I_j) : j \in J)$ is summable. We write $\sum(x_i : i \in I) = \sum(\sum(x_i : i \in I_j) : j \in J)$.

2.2. Definition. [4] Let $(R, \sum, ., 1)$ is a quadruple where $(R, \sum)$ is a partial monoid, $(R, ., 1)$ is a monoid with multiplicative operation '.' and unit 1. Then $(R, \sum, ., 1)$ is said to be a *partial semiring* if the additive and multiplicative structures obey the following distributive laws: Suppose $\sum(x_i : i \in I)$ is defined in R. Then for all y in R, $\sum(y.x_i : i \in I)$ and $\sum(x_i.y : i \in I)$ are defined and $y.\sum(x_i : i \in I) = \sum(y.x_i : i \in I)$, $\sum(x_i : i \in I).y = \sum(x_i.y : i \in I)$.

2.3. Definition. [4] A partial semiring $(R, \sum, ., 1)$ is said to be *commutative* if $xy = yx$ for every $x, y \in R$.

2.4. Definition. [4] Let $(M, \sum)$ be a partial monoid. The binary relation $\leq$ on a partial monoid is said to be a *sum-ordering* if we have the following axiom: $x \leq y$ if and only if there exists a 'h' in M such that $y = x + h$ for $x, y \in M$.

2-ABSORBING AND WEAKLY 2-ABSORBING SUBSEMIMODULES

N. RAVI BABU[1*], DR. T.V. PRADEEP KUMAR[2], DR. P.V. SRINIVASA RAO[3]

ABSTRACT. A partial semiring is a structure possessing an infinitary partial addition and a binary multiplication, subject to a set of axioms. The partial functions under disjoint-domain sums and functional composition is a partial semiring. In this paper we obtain equivalent conditions and some characteristics of 2-absorbing subsemimodules and weakly 2-absorbing subsemimodules in partial semirings.

Index Terms: Semimodule, 2-absorbing subsemimodule, weakly 2-absorbing subsemimodule, commutative partial semiring.

Introduction

Partially defined infinitary operations occur in the contexts ranging from integration theory to programming language semantics. The general cardinal algebras studied by Tarski in 1949, Housdorff topological commutative groups studied by Bourbaki in 1966, Σ-structures studied by Higgs in 1980, sum ordered partial monoids and sum ordered partial semirings (so-rings) studied by Arbib, Manes and Benson[2], [3], and Streenstrup[13] are some of the algebraic structures of the above type.

In 2014, M. S. Reddy[12] introduced the notion of 2-absorbing subsemimodules in partial semirings which is the generelisation of subsemimodules in partial semirings. In this paper, we consider the 2-absorbing subsemimodules of partial semirings and obtain various equivalent conditions of it. Also we obtain the characterizations of weakly 2-absorbing subsemimodules interms of weakly 2-absorbing partial ideals of partial semirings.

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Study of Thermo-Optical Parameters for Device Applications by Image Analysis Website

L. N. V. H. Somasundar • Published 2018 • Materials Science, Physics

Thermo optical behavior of two azomethine liquid crystals: 4-n-alkanoyloxybenzylidene-4-bromoanilines (Cn-1H2n-1COO-, n = 8); 8ABBA and 3-hydroxy-4-{[(4 iodophenyl) imino] methyl} phenyl alkanoates (Cn-1H2n1COO-, n = 18) ; 18ABIA comprising terminal bromo and Iodo substituent's are investigated towards optical device applications by Image analysis technique in conjunction with Polarizing Optical Microscopy which is based on intensities of the liquid crystal textures as a function of temperature... Expand

Figures and Tables from this paper

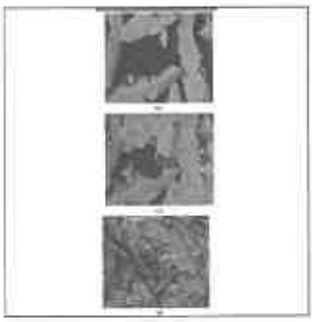

Figure 1

Crystals.

Compound	Phases I-Sm A-Sm B-Cr DSC	Transition temperatures (°C) POM and Image analysis
8ABBA	105.78 – 91.03 – 46.16	104.5 –95.5 – 47.5
18ABIA	107.4 –104.6 – 79.5	106.0-102.5 – 78.0

(Cr:Crystal;sm A – Smectic A; sm B – Smectic B; I:Isotropic).

Table 1

Figure 2

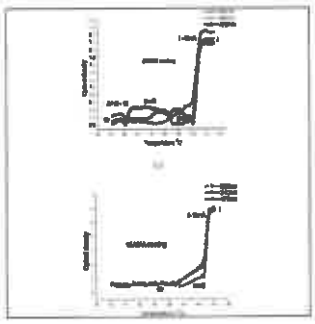

Figure 3

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Optical properties of a mesogen by image analysis

S. Sastry S. Ha B. Gowri Sankara Rao K. Mallika T. V. Kumari Materials Science, Physics • 2012

An image analysis technique in conjunction with polarising optical microscopy (POM) is proposed for assessment of the thermo-optical properties of homogeneously aligned chiral ester liquid crystals... Expand

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Research paper

Modeling and Analysis of Kaplan Turbine Blade Using CFD

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Abstract

Fluid assumes a basic part in huge numbers of the items that we experience each day from clear applications, for example, water treatment frameworks and auto and flying machine streamlined features to limit pushing. CFD investigation which empowers item outline and examination in a virtual domain has revolutionized liquid progression via robotizing the arrangement, notwithstanding for issues that are numerically substantial. By recognizing physical powers and stream attributes that are in some cases difficult to gauge or pick up knowledge into, CFD arrangements can help an organization drastically enhance time to showcase. Kaplan Turbine is Reaction, Axial and Adjustable Flow Turbine. In this Project displaying of Kaplan Turbine Will be finished by expecting shaft diam-eter, sprinter breadth and profile of the edge in Cero parametric Software. Computational Fluid Dynamic Analysis will have performed by im-porting the model in to CFD Software Ansys Fluent by expecting Initial Boundary Conditions (i.e. bay weight and Velocity. By Fixing Blade Twist point and differing flexible edge. Diverse CAD models will draw, and variety of stream parameters can be created along the turbine (i.e. weight and Velocity) in Ansys familiar Software. The above examinations to be performed for various Blade bend points. Suit-capable charts will be created between stream parameters. By this we will be in the situation to judge, which point is the most best one (the most best edge is the one which changes over the entire weight and speed of the liquid into valuable shaft work).

Keywords: *Use about five key words or phrases in alphabetical order, Separated by Semicolon.*

1. Introduction

A hydraulic powered machine is a gadget in which mechanical vitality is exchanged from the fluid moving through the machine to its working part (sprinter, cylinder and others) or from the working individual from the machine to the fluid coursing through it. Water driven machines in which, the working part gets vitality from the fluid moving through it and the bay vitality of the fluid is more noteworthy than the outlet vitality of the fluid are alluded as pressure driven turbines. Water driven machines in which vitality is transmitted from the working part to the streaming fluid and the vitality of the fluid at the outlet of the pressure driven machine is not as much as the outlet vitality are alluded to as pumps. It is outstanding from Newton's Law that to change energy of liquid, a power is required. Correspondingly, when energy of liquid is changed, a power is created. This standard is made use in water driven turbine. In a turbine, cutting edges or basins are given on a haggle against water to change the energy of water[1]. As the energy is changed with the water going through the wheel, the subsequent power turns the pole of the wheel performing work and creating power. A pressure driven turbine utilizes potential vitality and motor vitality of water and changes over it into usable mechanical vitality. vitality influenced accessible utilized to run an electric power generator which is straightforwardly which is acquired from the water driven vitality is known as Hydro-electric vitality. Water driven turbines have a place with the class of roto-dynamic apparatus

1.1 Classification of Hydraulic Turbines

1. According to the type of energy at inlet

a. Impulse Turbine(IT)
In the IT, the aggregate leader of the approaching liquid is converted in to an extensive speed head at the exit of the supply nozzle. That is the whole accessible vitality of the water is changed over in to dynamic vitality. Even though there are different sorts of motivation turbine plans, maybe the most straightforward to comprehend is the Pelton wheel turbine. It is most proficient when worked with a vast head and lower stream rate.

b. Response Turbine(RT)
RTon the other hand, are most appropriate - for higher stream rate and lower head circumstances. In this kind of turbines, the turn of sprinter or rotor (pivoting some portion of the turbine) is somewhat because of motivation activity and mostly because of progress in weight over the sprinter cutting edges; along these lines, it is called as response turbine. For, a response turbine, the penstock pipe sustains water to a line of settled cutting edges through packaging. These settled edges change over a piece of the weight vitality into active vitality before water enters the sprinter. The water entering the sprinter of a response turbine has both

Effective Reading Strategies to Teach Prose: An Empirical Study

The IUP Journal of English Studies, Vol. XIV, No. 2, June 2019, pp. 116-121

Posted: 4 Aug 2020

M Srilakshmi (https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=4283424)
DVR & Dr. HS MIC College of Technology

Date Written: 2019

Abstract

It is found that the ability to read a printed text plays a vital role in developing a student's comprehension. Many students struggle to comprehend what they read in their class because they lack not only deep involvement with their text but also strategies which help them in understanding a text. Pre, while, and post reading activities assist the learners in successfully reading, understanding, learning, and enjoying a selected text and make reading more communicative. This empirical study emphasizes on pre, while, and post reading activities to teach prose. For this study, two prose lessons of equal complexity were selected and taught to one group. The first lesson was taught using the traditional method, and the second lesson was taught using pre, while, and post reading activities. A questionnaire and a checklist were prepared to evaluate the students' attitude, and data with written answers was collected. Informal discussions were held after the sessions. The findings of the study revealed that pre, while, and post reading activities helped the students improve their reading skills.

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The Last Burden: The Realistic Picture of the Degeneration of Indian Family

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Dr. G. Chenna Reddy, Associate Professor

Abstract

Family and marriage are basic structures of Indian society. With the advent of western education and consumerism, there is a collapse of value systems. This has led to the degeneration of the Indian family and this process is captured well by Upamanyu Chatterjee's second novel The Last Burden. Everyone in Shyamanand's household suffers from alienation. Especially, the sons of the family Burfi and Jamun struggle to find their place in the fast changing socio-economic conditions. They feel life bleak and purposeless. But the novel ends with a positive note hinting at the change in Jamun's attitude towards family. He expresses his willingness to take care of his father Shyamanand.

Keywords: Upamanyu Chatterjee, *The Last Burden,* alienation, family, filial relations, identity, cultural clash

The Last Burden written in 1993 is the second novel of a popular postmodern author Upamanyu Chatterjee. He has created a storm in the Indian literary scene with his first novel *English, August*. *The Last Burden* highlights the attitude of the Indian youth considering any relation a burden. It gives a realistic picture of the middle class Indian families and the emerging patterns in the joint family structure. Upamanyu Chatterjee in this novel has shifted his focus from public issues to private agonies of a family. The story revolves around the frictions in the middle-class Hindu Brahmin family of Shyamanand, a retired government servant. The family which lives in a town by the sea comprises of his wife Urmila, two sons Burfi and Jamun. The elder son is married to Joyce and has two sons Pista and Doom while the younger son works away from the family.

The novel recreates the family life at the end of the twentieth century. When his mother suffers from the heart attack, the protagonist Jamun returns to his home. It's not at all a happy family reunion. The events at home and his mother's sickness make him recollect the past events of his childhood, the death of aya, stroke of his father and his relations with Kasturi. The author

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EEG SIGNAL DENOISING BASED ON WAVELET TRANSFORM USING XILINX SYSTEM GENERATOR

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ABSTRACT: The effect on EEG signal with low power is because of noise sources like muscle noise , electrical noise etc....The de-noising methods exists by using the wavelets such as Biror4.4, symlet, coif, and haar and also exists on the basis of the combination of the universal threshold, Discrete wavelet transform(DWT), statistical threshold and stationary wavelet transform (SWT). Each of them comes from different wavelet families and includes different properties (Cengiz et al., 2016). When we are applying these wavelets, we decide which one to use depending on the requirements of the application. There is a significant improvement in the results within performance parameter such as Normalized Mean Squared error (NMSE), Correlation Coefficient (CC) and Signal to Artifacts ratio (SAR). DWT based denoising of EEG signal implementable on FPGA with Xilinx System Generator is done by using the simulink model. The previous methods are therefore not enough to satisfy the reliability requirement of the applications in harsh environments. In this paper, a technique to extend 3-bit burst error-correction (BEC) codes with quadruple adjacent error correction (QAEC) is pre-scented.

Keywords: EEG, denoising, SWT, DWT

INTRODUCTION

In the Electroencephalogram (EEG) the non-invasive sclap electrode is used to record the asynchronous neural activites in the brain. To detect the neurological disorder the degree of decontamination directly affects the quality of extracted feature from EEG signal. For denoising of neurological signal several techniques are proposed. Among them wavelet based de-noising outperforms than others .

WAVELET TRANSFORM (WT):

Wavelet transform emerged as superior tool for the analysis of non-stationary signal like EEG. Time frequency representation of the signal is provided by Wavelet transform. To get the wavelet coefficients a finite duration wave having finite energy with average zero is (called a wavelet), is correlated with input signal. Symlet, haar, coif and bior wavelets are suitable.

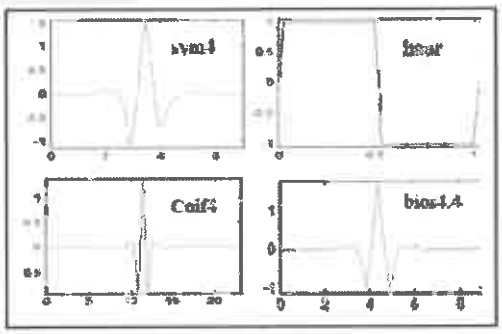

Figure 1: Common Mother Wavelet functions used for de-noising of EEG signal (Plotted with MATLAB function)

Discrete Wavelet Transform (DWT) :

For signal decomposition using wavelet at different levels DWT is an non-redundant and highly efficient transform. Signal is applied to high pass and low pass filters until the desired frequency range is obtained to find the detailed (d_k) and approximate (a_k) coefficients. At each filtered output the down sampling is done by 2. Later, for reconstruction signal is up sampled by 2 and IDWT is applied.

Solution to Direct Torque Control of Induction Motor with Artificial Bee Colony Algorithm

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Abstract: The undesired flux ripple and torque may occur in conventional direct torque control (DTC) induction motor drive. DTC can improve the system performance at low speeds by continuously tuning the regulator by adjusting the Kp, Ki values. In this Artificial Bee Colony Algorithm (ABC) is proposed to adjust the parameters (Kp, Ki) of the speed controller in order to minimize torque ripple, flux ripple, and stator current distortion.The ABC based PI controller has resulted is maintaining a constant speed of the motor irrespective of the load torque fluctuations.

Keywords: Artificial Bee Colony Algorithm, Forager Bee, Scout Bee Direct Torque Control, PI controller.

I. INTRODUCTION

Induction motors are the most widely used machines in AC drives because of their rugged construction and cost. To control the torque and flux of the induction motor different strategies are available as per the literature. DTC was patented by Manfred Depen brock in the US and in Germany, the latter patent having been filed on October 20, 1984, both patents having been termed direct self-control (DSC). However, Isao Takahashi and Toshihiko Noguchi described a similar control technique termed DTC in an IEEJ paper presented in September 1984 and in an IEEE paper published in late 1986. The DTC innovation is thus usually credited to all three individuals. The only difference between DTC and DSC is the shape of the path along which the flux vector is controlled, the former path being quasi-circular whereas the latter is hexagonal such that the switching frequency of DTC is higher than DSC. DTC is accordingly aimed at low-to-mid power drives whereas DSC is usually used for higher power drives.

Direct torque control is one of the methods which is used in variable frequency drives for the control of the induction motor. Direct torque control has emerged over the last decade to become one possible alternative to the well-known Vector Control of Induction Machines. In DTC, the stator flux and the torque are directly controlled by selecting the appropriate inverter state. The output of the speed regulator (PI controller) results in generation of the reference torque. However the PI controller cannot result in perfect control if its parameters Kp, Ki are not properly chosen. The undesired torque and flux ripple may occur in conventional direct torque controlled induction motor drive. DTC can improve the system performance at low speeds by continuously tuning the regulator by adjusting the Kp, Ki values. Many artificial intelligence techniques and random search methods have been employed to improve the control parameters.

Artificial Bee Colony Algorithm (ABC) is proposed to adjust the parameters (Kp, Ki) of the speed controller in order to minimize torque ripple, flux ripple, and stator current distortion. ABC is generally considered as a reliable, accurate, robust and fast optimization technique. ABC has been successfully applied to solve a wide range of numerical optimization problems.

II. MATHEMATICAL MODELING OF INDUCTION MOTOR

Mathematical modelling of the induction motor was done based on the equations (1) – (5).

$$V_{qs} = R_s i_{qs} + \frac{d}{dt}\varphi_{qs} \qquad (1)$$

$$V_{ds} = R_s i_{ds} + \frac{d}{dt}\varphi_{ds} \qquad (2)$$

$$0 = R_r i_{qr} + \frac{d}{dt}\varphi_{qr} - \omega_r \varphi_{dr} \qquad (3)$$

$$0 = R_r i_{dr} + \frac{d}{dt}\varphi_{dr} + \omega_r \varphi_{qr} \qquad (4)$$

$$T_e = \frac{3}{2}\left(\frac{p}{2}\right)(\varphi_{ds} i_{qs} - \varphi_{qs} i_{ds}) \qquad (5)$$

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A Comprehensive Study on Blockchain Technology

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Abstract - *A Blockchain is an emerging Technology now-a-days mostly from last two years a more funding is also spent on research of the technologies used. This Technology is used almost in all the sectors of real world applications which use E-Tag or Electronic or Online. It can change the dimensions of the digital operations by performing distributed ledger transactions in daily human's life by averting the third parties. Blockchain Technology is situated under the cryptocurrencies such as Bitcoin, Ethereum, Facton, Bitshares, Namecoin and Truthcoin platform and implemented in a Distributed environment with decentralized database having strong consistency, reliability and security support. This paper will gives a demonstration about the future challenges, working and some of the applications of Blockchain Technology.*

Key Words: Bitcoin, Blockchain Technology, Blockchain3.0, Cryptocurrency, Distributed ledger transactions, Ethereum.

1. INTRODUCTION

A Blockchain is one of the biggest buzzword in the technology now-a-days. First major application of Blockchain Technology was Bitcoin, which was released in 2009. A bitcoin is a public ledger system of every transaction taken place through the internet in a secure and safe manner. The bitcoins Blockchain works in a decentralized way. While traditional digital currencies are issued by central banks whereas Bitcoin used in Blockchain has no central authority. Instead, this Bitcoin was maintained by a network, which solves the complex mathematical problems. The Difference between Blockchain and Bitcoin is shown in the table1.

Motivation behind this technology is in the year of 2009, the world is feel shocked with a disastrous collapse in the financial sector and a political leaders were examine about what could be done and what should be done, a bitcoin technology has been came into picture all around the world. This project has defined entirely new form of money; it has caused a state of confusion and accepts this change willingly and enthusiastically. In which both rules and its execution are provided by the software rather than the human beings. Bitcoin achieve two things: it makes the money to be transparent and replaces the need of private organizations for transferring money over the internet [1].

The success of Bitcoin project, a Blockchain Technology is very useful in almost all of the applications which use the internet. This technology was developed for efficient, reliable, cost effective and secure systems for developing financial transaction of a distributed ledger system. Failures of current transactional systems are:

- Business transactions are in-efficient, expensive and chances of attacks are high.
- Transactions time is too long for settlement of money.
- Limited transparency and inconsistent information.
- If a bank is centralized then cyberattacks and fraud will be more.
- The intermediator that is need of third parties validation adds inefficiencies.
- Transactions cash is in small amounts ad done only in local.

An increasing in transactions volumes, complexities, E-transactions, In-app purchases, mobility of people and devices, emergence of IOT (Internet of Things) needs a faster payments, transparency, reliability and security in a distributed public ledger environment [4].

Not only Bitcoin, there are some other companies which develops a Blockchian platform to help firms to build technology related processes. Ethereum, Ripple, Hyperledger, IBM, R3 are some decentralized technologies developed for Blockchain Platform. Interoperability is the one problem that there is no guarantee that each one is compatible with the other. Carlos Torres Vila, CEO, BBVA says that this technology brings the more efficient processing, cheaper, more traceable and Alicia Pertusa, Head of Digital Transformation at the investment banking division of BBVA, She said that the loan issue process is saving the 40 to 50 percent of time on Blockchain over the traditional loan process. This process is not just causing disruption to the process but it shows the impact on the running of current products [5]. Tokens are used in traditional process whereas block chains are used here and these blockchains are unstructured in nature. This BBVA Blockchain loan trail was between two parties initially but later this technology greatly helps to processes of syndicated loans for many parties. They wanted to build it step by step later add more parties to our system.

1.1 Origins and underpinnings

The Innovation Foundations of Blockchain Technology includes the multidisciplinary fields such as software engineering, cryptographic science, Distributed computing, and economic game theory are as shown in the below

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A STUDY OF PARTITION NOVELS OF ANITA RAU BADAMI'S *"CAN YOU HEAR THE NIGHTBIRD CALL? ANDBAPSISIDHWA'S ICE-CANDY-MAN"*

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Abstract:

This paper critically analyzes the partition fictions of Bapsi Sidhwa's *Ice-Candy-Man* and Anita Rau Badami's *Can You Hear the Nightbird Call?*.Bapsi Sidhwa received several awards including the Lila Wallace Readers' Digest Writers' Award and the Li Beraturepre is from Germany for the Novel *Ice-Candy-Man. Can You Hear the Nightbird Call*? is a noteworthy work done by Anita Rau Badamiwhich made her a celebrity at the international platform. Towing high among the other authors, Bapsi and Anita are vibrant writers of India origin. These fictions portray with force, wisdom and passion the agony which tortured and tormented the human spirit during the pre and post-independence. Their narratives are strikingly significant as their experiences are shared openly, of course, with their own spectacles of caste, creed, religionand nationality. Yet the authors' narratives help the readers to learn about Indian historyand enables them to be aware of the injustice done to many in the name of religion.
Keywords: Human spirit, post-independence, celebrity, vibrant, narratives.

Introduction:

According to W. H Hudson, "Literature is a vital record of what men have seen in life, what they have experienced of it. What they thought and felt about these aspects of it which have the most immediate and enduring interest for all of us."

Literature mirrors the society that is beautiful, ugly and melodious; a cacophonous song of humanity on the earth. It is the treasure of human soul and mind which reflects the real face of

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AN APPROACH TO SECURED CLOUD DATA STORAGE WITH INDUSTRIAL IOT

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ABSTRACT

Cloud computing is the enormous stockpiling region where assets are accessible from wherever to everybody as administration. Distributed computing is the use of various administrations like programming advancement stages, stockpiling and programming over the web. Security is a fundamental hindrances for improvement of the distributed computing. Cloud security incorporates the arrangement of strategy, control and occasion to save the cloud-based framework, information and foundation. With improvement of Internet of things (IOT), gadgets are connected to assemble huge data about the clients and their exercises with no communication. A blend of IOT and industry is a fundamental one to advance robotization and data of industry. Modern Internet of Things (IIOT) limits the mistake, costs, increment effectiveness and wellbeing in assembling and mechanical cycles. For getting cloud climate information and IIOT, many examination works has been presented lately. Yet, the security assaults and disappointments raise extraordinary ruckus against IOT network with lesser information classification rate (DCR) and confirmation exactness (AA). To resolve these issues, distinctive got distributed storage procedures are assessed in this examination.

Keywords: Cloud Computing, Security, Industry, Unique Identity, Automation, Atmosphere.

I. INTRODUCTION

In data innovation, distributed computing is a creating field. For putting away and preparing IOT information, Cloud is an optimal stockpiling area. Web of Things associates all actual items through various organizations gadgets to introduce productive, solid and secure administrations for all applications. IOT is an inescapable organization which performs checking and actual climate control through get-together, preparing and inspecting information from sensors. The IOT is the between systems administration of actual articles, gadgets, vehicles, structures and extra things which are embedded with hardware, programming, sensors, and organization network, permits these items to gathers and exchange information. Web of things have a wide space of utilizations like savvy home, keen urban areas, shrewd medical services framework, keen traffic signal lights, associated vehicles, keen climate checking in businesses, brilliant matrices, keen metering, water network observing, and keen coordinations and some more. The application extent of IOT isn't restricted with the previously mentioned applications. Anyway IOT security is an extraordinary test in light of its heterogeneous nature. This paper examines the protected cloud information stockpiling issue in mechanical IOT with various strategies.

This article is requested as follows: Conventional got distributed storage procedures with IIOT are clarified in Section 2. Segment 3 presents the concise conversation about got distributed storage methods with IIOT. The potential correlations are depicted in segment 4. The limits and related works are depicted in segment 5. Area 6 finishes up the paper.

II. LITERATURE SURVEY

To determine the security issues, a graphical model was acquainted in [1] with show the weakness relations in IIOT organization. It incorporates location and assault ways end with more serious danger and jump length. Yet, planned model was not worked on through cost models for network solidifying against weaknesses. The acknowledged norm for cost displaying was inaccessible. In [2], a Lightweight security instrument was intended for Machine-to-Machine (M2M) correspondences in IIOT. For hash and XOR tasks, a lightweight

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ARTICLES

Implementation Of Low Power Based Concurrent Error Detectable Carry Select Adder With Testability Technique

PDF

Chennamsetty Pullarao, Ponduri Sivaprasad

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Versions

- 2021-07-21 (2)
- 2021-07-21 (1)

Abstract

This Paper Proposes Concurrent Error Detectable Adder With Testability. The Proposed Adder Is Designed Using Multi-Block Carry Select Adder. An Output Of The Adder Is Obtained By A Fault Modeled As A Single Stuck-At Fault Can Be Find By Comparing The Predicted Parity Of The Sum With The Parity Of The Sum And Comparing The Duplicated Carry Outputs. The Adder Is Testable With Ten Input Patterns Under Single Stuck-At Fault. This Property Detection Of A Fault Before The Occurrence Of A Second Fault Is Easier. The Concurrent Error Delectability To Detect Erroneous Results And The Easy Testability To Find A Fault During Functions Are Important For Realizing Reliable Systems. The Concurrent Error Delectability And The Testability Of The Proposed Adder Are Proved. A 32-Bit Adder Has Been Designed And Its Concurrent Error Delectability Covers 100% Test Coverage Through The 10 Patterns Has Been Confirmed By Fault Simulation.

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EXPERIMENTAL ANALYSIS OF PERFORATION SHAPED VERTICAL HEATED ALUMINIUM FINS UNDER FORCED CONVECTION HEAT TRANSFER

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ABSTRACT

Heat transfer from impinging jets is a relatively new technological development that has already attracted the interest of heat transfer engineers and designers, involved with the design of modern jet power plants and related machinery. This study presents, heat transfer rate at different heat input conditions for a perforation shaped vertical aluminium flat fin as a heat sink. The maximum heat dissipation rate for the different Z/d ratio's and velocity is going to be calculated by using at different heat input conditions. The analysis part done by using ansys fluent CFD programme. The studies of experimental and numerical were carried out for a aluminium heat sink with same nozzle diameter, two different velocity rates at four different input conditions. The variations of heat transfer rate to z/d ratio's and for Re-Nu analysed and compared. Finally the maximum heat transfer rate going to observed at optimum parameter's. Hence plots are drawn using experimental as well as numerical results. Both numerical and experimental results were taken as good agreement.

Key words: Computational Fluid dynamics, Reynolds and nussult number, Heat sink, Height to diameter ratio(Z/d).

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NOMENCLATURE

A- area (m^2)
Cp- pressure coefficient
d- Nozzle diameter (m)
Q- heat dissipation rate (w)
h -convection coefficient (w/m^2 k)
I -Current (A)

Experimental Study on Concrete by Partial Replacement of Sand with Sawdust &Cement with Fly Ash

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Abstract— This project focused at the replacement effects on the addition of fly ash, sawdust in concrete as a partial replacement of cement and natural fine aggregate. Natural fine aggregate are replaced by sawdust in 5,7.5,10,12.5 and 15% by weight in the concrete. Cement is replaced by fly ash in 5,7.5,10,12.5 and 15% by weight in the concrete. Sawdust and fly ash is available as natural material and also useful for minimize the fine aggregate and cement and also cost in the construction field. The sawdust is sieved using a 4.75mm sieve. Using mix M25 grade of concrete and has to ratio of 1:1:2 [cement: sand: aggregate]. The specimens are tested after 7,28 days of curing. The experiment is carried out by finding the slump value, compressive strength.

Keywords: Saw Dust, Fly Ash, Cement, Fine Aggregate, Courese Aggregate

I. INTRODUCTION

- Saw dust is the waste product which is available huge in quantity and which can be used as substitute of fine aggregate.
- In the last decade, construction industry has been conducting research on the utilization of waste product in concrete. Each waste product has its own specific effect on properties of fresh and hardened concrete.
- Conservation of natural resources and presentation of environment is the essence of any development.

The problem arising from continuous technological and industrial development is the disposal of waste material. If some of the waste material are found suitable in concrete making not only cost of construction can be cut down and also safe disposal of waste material can be achieved.

The use of waste product in concrete not only makes it economical but also solves some of the disposal problems technology is used in the field of concrete technology that modifies concrete properties.

- Fly ash is the finely divided mineral residue resulting from the combustion of ground or powdered coal in electric power generating thermal plant.
- Fly ash is a beneficial mineral admixture for concrete. It influences many properties of concrete in both fresh and hardened state. Moreover, utilization of waste materials in cement and concrete industry reduces the environmental problems of power plants and decreases electricity generation costs. While in the fresh state, the fly ash improves workability.
- This improved workability allows for lower water-to-cement ratios, which later leads to higher compressive strengths.

In the hardened state, fly ash contributes in a number of ways, including strength and durability. While fly ash tends to increase the setting time of the concrete. Concrete being the most important and widely used material is called upon to possess very high strength and sufficient workability properties. Efforts are being made in the field of concrete technology to develop such concretes with special characteristics. In the present experimental investigation the fly ash has been used to study the effect on compressive on M25 grades of concrete

II. OBJECTIVES

1) To prepare light weight saw dust concrete of nearly equal advantages like conventional concrete.
2) To prepare economical concrete.
3) Good disposal of waste (Saw dust).

III. SCOPE

It has many advantages over traditional concrete, such as,

- Internal curing due to the absorbed water in the saw dust.
- Better heat dissipation and heat insulation property.
- Efficient in case of acoustics.
- Lack of availability of fine aggregates can be compensated.

IV. MATERIALS & TESTS

A. Sawdust

Sawdust is obtained from wood. The saw dust consist of chippings from various hardwoods. It was sundried and kept in waterproof bags.

Fig. 1: Sawdust

Sr. No.	Constituents	Percentage (By weight)
1.	SiO2	87
2.	Al2O3	2.5
3.	Fe2O3	2.0
4.	MgO	0.24
5.	CaO	3.75
6.	Loss of Ignition(LOI)	4.76

Table 1: Chemical characteristics of saw dust

1) Specific gravity of sawdust

The test was conducted by density bottle. The calculated Specific gravity of sawdust is 0.91.

2) Water absorption of sawdust

The calculated Percentage of water absorption is 47%.

Original Article

Mapping Of Geomorphology For The Exploration Of Landforms In Ananthapur District, Andhra Pradesh Using Remote Sensing And GIS

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Abstract

Geomorphological map is an essential tool for various types of planning and developmental activities in an area such as land use planning, agriculture, forestry, civil-engineering, exploration and utilization of mineral resources,groundwater development,terrain evaluation etc. The geogmorphological mapping for Ananthapur district area was carried out with the help of SENTINEL - 2A satellite(June 23rd 2018) Spatial Resolution 10m, Multispectral, Digital data imagery on 1:50,000 scale by visual interpretation techniques. Remote Sensing(RS) and Geographical Information Systems(GIS) play a basic employment in creating topical maps and incorporating examination for mapping, overseeing and observing the regular assets. RS and GIS innovations have propelled another period in the field of connected topography and geomorphology. Geomorphology is the exploration of landforms present on the Earth's surface and their deliberate examination is vital and special,keeping in mind the end goal to decipher them as marks of the past and continuous topographical procedures. The present examination intends to outline geomorphological highlights in the location of Ananthapur district in perspective of visual picture interpretation system. The examination territory principally contains Moderately Weathered Pediplain(39%) trailed by Shallow Weathered Pediplain(21%) and Structural Hill(16%).These maps would be helpful in further investigation for common earth assets arranging, administration and basic leadership. Topical maps of geomorphology have been produced on satellite information. Standard visual clarification strategies as per the norms given by NRSC have been pursued and depicted on-screen digitations of highlights.

Keywords: Geomorphology, Natural Resource Planning, Remote Sensing (RS),Geographical Information Systems (GIS) and GPS

I. INTRODUCTION

Remote sensing data is an important and effective tool to evaluate the hydrogeomorphological and hydro geological zones,which will be highly depending up on the physical, geological, hydrogeological and geomorphological characteristics[1]. Therefore, studies have been carried out using remote sensing & GIS techniques for hydrogeomorphological investigation. Besides these, many other studies in India and abroad have been carried out for the hydrogeomorphological evaluations using remote sensing data. Hence, through survey of literature proved that, the remote sensing is a quick and efficient method for demarcating and evaluating the zones of ground water. In the study area, the remote sensing has been effectively used as an important tool to delineate hydrogeomorphological features using standard remote sensing techniques.

II. STUDY AREA

The area under the investigation lies between 76'-50'' to 78'-30'' Eastern Longitude and 13'-40''to 15'-15'' Northern Latitude. The area is located in Ananthapur District of Andhra Pradesh. District forms the important part of Rayalaseema region. Its northern and central regions are a high plateau, generally undulating, with large granite rocks or low hill ranges rising occasionally. In the southern parts, surface is more hilly. Six rivers flowing within the Ananthapur district. Penna,Chitravathi,Vedavathi,Papagni, warnamukhi and Thadakaleru. District has 949 villages. The study area Ananthapur District was taken consisting of 3 revenue divisions covering a total area of around 19130 km^2. The economy of the district is predominantly agrarian with very few industries with a very scanty rainfall of 563 mm,district is one of the most backward province of the Andhra Pradesh state. Prominent crops are groundnut, rice, sunflower, chilly, bengalgram, orghum and cotton.

A Geo-Spatial approach to the Land Use/Land Cover mapping of the Ananthapur district, Andhra Pradesh, India

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Abstract:
In the present investigation, the land use/land cover mapping of Ananthapur district in the state of Andhra Pradesh has been carried out using Resourcesat-1, LISS IV satellite imagery based on standard visual interpretation techniques. The identified land use / land cover features are Aquaculture, Deciduous Dense/Closed Forest, Deciduous Open Forest, Deciduous Scrub Forest, Forest-Blanks, Deciduous dense forest, Deciduous open forest, Forest-plantations, Kharif(single crop), Kharif +Rabi(double-cropped), Plantation, Tank, Towns/cities(Urban), Villages(Rural), Barren-rock, Wastelands, Gullied land, hills with dense vegetation, Water-channel-area,Wastelands-hills with scrub, Wastelands Land without-scrub, Salt affected land and Stone-waste. Out of all these features, the maximum area is covered by Kharif(single crop) (50.74%) followed by Kharif +Rabi (double-cropped) (19.76%), Wastelands hills with scrub (5.64%) and Plantation (1.46 %) etc.

Keywords: Land Use, Land Cover, Resourcesat-1, LISS IV, Satellite imagery, Visual Interpretation
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Introduction

Land and water have been the basic elements of life supporting systems on our planet since the dawn of civilization (Redclift, M. 2002). All great civilizations flourished where these resources were available in plenty and they declined or perished with the depletion of these resources. In recent years, the land resource has been subjected to a variety of pressures, yet it is surviving and sustaining mankind. The concerned matter is the way, land is being overexploited which is leading to threat to the environment. Out of all the species on the earth, man is the chief culprit to this degradation. He views land in terms of its utility to meet his perceived needs and wants. The most easily categorized varieties of land from the utility point of view are land fit for use, land with potential for use and land which appear useless in the foreseeable future.

Here probably lies the genesis of the problem of land degradation and erosion of ecosystems. Mahatma Gandhi said -"The Earth has enough for everybody's need but not for anybody's greed". Preserving, protecting and defending the land resources have been part of our age-old culture. The respect for the importance of land resources is best depicted in the conventional concept of Panchabhutas – land, water, fire, sky and air that constitute a set of divine forces. There are innumerable examples of the traditional conservation practices and systems which are still surviving and are effective. But with the advent of modern age and the newer forces, this tradition is quickly deteriorating mainly on account of – consumerism, materialistic value systems, short-term profit-driven motives and greed of the users. As a result, land is degraded, soil fertility depleted, the rivers polluted and the forests destroyed.

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SENTIMENTAL ANALYSIS OF TWITTER DATA USING NLP AND MACHINE LEARNING TECHNIQUES

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Abstract:
Every social networking site, including Facebook, Twitter, Instagram, and others, has emerged as a major information source. It has been discovered that a corporate organisation can benefit from data extraction and analysis from social networking sites for their product promotion. One of the most common platforms for people to voice their opinions and sentiments about a product is Twitter. In our study, we examine how the general public feels about a product using data from Twitter. First, in order to filter tweets, we created a pre-processed data framework based on natural language processing (NLP). In order to analyse sentiment, we also use the Bag of Words (BoW) and Term Frequency-Inverse Document Frequency (TF-IDF) model concepts. This project aims to precisely categorise good and negative tweets using BoW and TF-IDF. The accuracy of sentiment analysis can be significantly increased by utilising TF-IDF vectorizer, and simulation results demonstrate the effectiveness of our suggested solution. Using NLP, we were able to analyse sentiment with an accuracy of 85%.

Index Terms—Natural language processing (NLP), Twitter, data mining, Sentiment analysis

Introduction:
The amount of data produced by internet services nowadays is enormous and is growing rapidly every day [1]. Microblogging is practised on social networking sites, where it has developed into a powerful instrument for communication among Internet users [2]–[3].Every business, large and small, has joined social networking sites to share their products and look for customer ratings. In order to measure customer happiness and improve their product, the corporation will employ sentiment analysis to understand how customers feel about their products. In particular, the established approach for sentiment analysis is used frequently to examine relationships between any device, famous person, sports team, and other entities.

After Facebook, Twitter is the second-largest social networking site, producing 21 million tweets each hour and 347,222 tweets per minute [1]. As a result, it opens the door for sentiment analysis and data

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Best performance of Cloud security uses Division and Replication of Data

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Abstract:
Security issues arise when data is outsourced to a third-party administrative authority, as is done in cloud computing. Attacks by other users and cloud nodes could lead to a data compromise. High security measures are therefore necessary to safeguard data in the cloud. The applied security method must, however, also consider how to speed up data retrieval. In this study, we propose the division and replication of data in the cloud (DROPS), which takes a combined approach to performance and security challenges. In the DROPS process, a file is divided into pieces, and the pieced-together data is replicated among cloud nodes. Each node only keeps a single piece of a specific data file, preventing the attacker from learning any useful information even in the event of a successful attack. In addition, the nodes that store the fragments are spaced out by a predetermined amount using graph T-coloring to prevent an attacker from speculating where the fragments reside. Additionally, the DROPS methodology frees the system from computationally expensive procedures by not relying on conventional cryptographic techniques for data protection. We demonstrate how unlikely it is to find and compromise every node holding a single file's pieces. We contrast the DROPS methodology's performance with that of several other techniques as well. The enhanced level of security comes with a small performance penalty.

Introduction:
The use and administration of the information technology infrastructure have been transformed by the cloud computing paradigm [7]. On-demand self-services, widespread network access, resource pooling, elasticity, and measurable services are characteristics of cloud computing [22], [8]. Because of the aforementioned qualities, cloud computing is an obvious contender for adoption by companies, organizations, and individual individuals [19].
However, increasing security risks come along with the advantages of low cost, minimal management (from a users perspective), and greater flexibility [7].

One of the most important factors preventing the widespread use of cloud computing is security [14], [19]. Cloud security issues may result from cloud characteristics (data recovery vulnerability, Internet protocol vulnerability, etc.), cloud service offerings (structured query language injection, weak authentication schemes, etc.), or cloud technology implementation (virtual machine (VM) escape, session riding, etc.). [5]. The participating entities must all be secure for a cloud to be secure. The highest level of security for any system with numerous units is equal to the level of security for the weakest entity [12]. As a result, in a cloud, asset security is not solely dependent on a person's security measures [5].The nearby entities could give an attacker a chance to get past the user's defenses.

Users of the cloud service for off-site data storage must move data in a virtualized,

DESIGN A DETECTION MODEL OF DDOS ATTACKS IN SDN ENVIRONMENT USING DECISION TREE AND SUPPORT VECTOR MACHINE

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ABSTRACT: Network architecture of Software Defined Network (SDN) is an efficient design that offers network operators to maintain network infrastructure effectively. Virtualized network services are offered by the SDN paradigm which encourages compatible architectures for a network to use infrastructure hosted service computing. There is a high risk over the Internet by the Distributed Denial of Services (DDoS) attacks. Attack detection within the controller in early stage is a critical task. In this study, Decision Tree (DT) and Support Vector Machine (SVM) are the two techniques are used in DDoS attacks detection within SDN environment. A particular server is attacked at a time by DDoS attack which is a multiple collaborated system. Support Vector Machine (SVM) and Decision Tree (DT) are the two machine learning based techniques used in this paper for detection of malicious traffic attacks. The result analysis concludes the comparison of SVM and DT classifiers in terms of various parameters like Accuracy, Precision, Recall and F1-Score. From the experimented results, it is clear that DT attains high accuracy of 98.2% when compared with SVM which has 85.4% accuracy.

KEYWORDS: Distributed Denial of Services (DDoS) Attacks, Software Defined Networks (SDN), Decision Tree (DT) and Support Vector Machine (SVM).

I. INTRODUCTION

Computer network system is built with a collection of devices such as routers and the network [1]. The network policies are configured by the network administrator within a network area device by using simple commands in interface. This target is achieved by using limited tools. The interfaces that are used in existing devices are collective and collaborative performance among various software vendors is a complex issue. This leads to the flaws in a network that lacks creative innovation. The network conditions are rapidly changing due to the emerging trends over the Internet.

SDN architecture [2] is developing technology that overcomes the drawbacks of conventional network. Software Defined Networking (SDN) is defined by Open Networking Foundation (ONF) as "network control plane having physical separation from the forward plane and several devices are controlled by the control plane" [3]. Data plane acts as a packet forwarding hardware in SDN and control plane behaves as "brain" of the device where the programs are easily built in network control plane. It generates an abstract of the network infrastructure which is underlying.

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ULTRA WIDE BAND RADAR SYSTEM FOR THROUGH WALL HUMAN VITAL SIGNS DETECTION

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Abstract -

This task is primarily based totally on UWB Radar, which recognises a individuals movements. Without having to touch somebody, this can be used to identify human signals. We focused on exploiting respiratory movements to locate stationary human targets behind a wall. A Doppler-based method is utilised to identify breathing movements, and a new methodology based on the short time Fourier transform, as well Various metrics are subjected to a clutter reduction technique based on singular value decomposition.

Key Words: *Ultra Wide Band, Doppler sensor, Breathing motion*

1. INTRODUCTION

In recent years, Because of its high range resolution and penetrability, UWB radar has been used for the detection of humans, moving subjects, imaging through walls, search and rescue, indoor positioning, and public order and security.

Impulse ultra-wideband (UWB) radar has been used to stumble on residing human beings in the back of barriers in current years be difficult because thorax movement is typically only a few millimetres, and signal attenuation can be severe. Ultra-wideband (UWB) generation has emerged as a famous desire for such packages because of its excessive variety decision and penetration via maximum constructing material

The excessive bandwidth of UWB radar effects in excessive variety resolution, which aids withinside the separation of more than one objectives.

This small movement can be used to distinguish a human from other objects behind a wall or beneath rubble, but it becomes difficult due to the high clutter from the wall and other objects inside a room. This project is based on UWB Radar, which recognises a person's movements.

Without having to touch somebody, this can be used to identify human signals. We focused on exploiting respiratory movements to locate stationary human targets behind a wall. A Doppler-primarily based totally approach is used to hit upon respiration motion. A new technique based on the short time Fourier transform, as well Various metrics are subjected to a clutter reduction technique based on singular value decomposition.

2. PROBLEM IDENTIFICATION& PROBLEM SOLVING

2.1. EXISTING METHOD

The tremendous majority of conventional radars hit upon objectives the usage of harmonic pulse signals .The carrier frequency of such radars is substantially greater than the bandwidth of the signals employed. As a result, these radars can only provide low-resolution detection.

Drawbacks:

1. To produce short time pulses
2. Fine and sensitive

2.2. PROPOSED METHOD

In this proposed system we are using Doppler Sensor which detects the motion of the person and sends the signal to image processing section. So we can see identify properly. After that here we are detecting temperature also by using MLX9061 IR Temperature Sensor. The signals are sent using Lowpass Filter

3. LITERATURE SURVEY

3.1 EXPERIMENTAL STUDY OF HUMAN RESPIRATORY DETECTION USING UWB GPR:

Ground Penetrating Radar (GPR) systems are now used for civil applications such as detecting buried pipes, mines, and military fields. The detection of human vital signs through obstacles such as walls and rubble is one of the most current GPR applications in the civil and defence industries.

System parameters will be designed for this purpose, and data acquisition will be completed successfully. On radar data, the Fast Fourier Transform will be used to extract the signal of respiratory motion.

3.2 AROUND-THE-CORNER RADAR: HUMAN BEING DETECTED IN NON-LINE OF SIGHT:

This studies appears on the trouble Multiple routes are used to discover a human in a non-line of sight (NLOS) surroundings in an city context. It presents the results of actual measurements taken in an underground curved tunnel. The experiment's targets, a sphere and a human being, were placed within the detection device's

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AUTOMATIC APPEARANCE MASK AND BODY TEMPERATURE FINDING SYSTEM

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Abstract – *We define our face mask and body temperature detection system implemented using Raspberry Pi. This project was designed to progress a portable face mask detection and temperature understanding device if a person was wearing a face mask and their temperature was within a certain range, it was identified. An MLX90614 infrared (IR) sensor was interfaced with a raspberry pi and used to detect an entity's temperature within its pitch of view. The applied distance of this static IR sensor is 2cm-5cm. The discovery software application reads the entity temperature from the IR sensor and converts the Celsius temperature to Fahrenheit using the smbus2 python package and the mlx90614 locally stored folder. If the observed temperature is within the defined range and the MobileNetV2 model detects that the person is wearing a mask, a green box appears around their head. If the observed temperature is outside of the range and the model predicts the person is not wearing a mask, a red box appears on the person's face.*

Key Words: Appearance Mask Finding, Raspberry PI, Deep Learning.

1. INTRODUCTION

Finding appearance masks can be a hard job. Throughout this period, it established additional attention due to the supper of coronavirus disease. Therefore, countless homelands accept the rule "No entry without masking." The front finding is a critical safety problem and Covid-19 prevention. Masking reduces the risk of secondary exposure to infected patients, irrespective of the symptoms. The identification of masks is carried out in airports, clinics, workplaces, and academic areas. The finding of masks has consequently become a challenging and highly critical issue. Facial recognition is however quicker if not masked Detection of façades is a key safety issue and prevention of Covid-19. Popular in the medical field, masking lowers the associate's potential risk of exposure to sick patients, whether or not they demonstrate indications. Airports, health centres, workrooms, and hypothetical departments are used to mask findings. Mask finding has therefore become an extremely important and difficult problem. However, face appreciation is key as the removal of the coated face is very complex compared to a conventional face. Face appreciation without masking is meeker. That's such a vast number of facial characteristics as the nose, mouth, and kidney measurements within the masked face. In the field of the drug, masks reduce the danger of probable experience to the nursing associate. Within the covered face, there are so many physical characteristics such as the nose, mouth, and kidney measures. The mask in the health field reduces the associate's potential risk of exposure to infected patients whether or not they have symptoms. A lot of mask detection focuses on two procedures.

1) Examine the face

2) Remove the feature

Face recognition is the first phase; we're looking for someone's face in a photograph. Particularly in the treatment exposed appearances in a dual, the multiple mask Associate is detected. It is also resolute through a childhood method of discovering substances. Viola-Jones limit, adaptive Boost Algorithm and GROW are the standard face detection algorithms for square meters (Histogram of Gradient). Multi-stage detectors and individual short detectors are the two types of object detection techniques used here (SSD). Here, a vast number of papers on the measurement of mass detection have been analyzed. For mask detection, many rectangle measurement methodologies are employed, such as video analytics and image linguistics segmentation.

1.1 Deep Learning

Deep learning methods are designed to learn orders of qualities that combine lower-level features with higher-level traits. At various abstract levels, auto-learning capabilities enable a computer to learn sophisticated functions that translate the input directly to the output without the use of human-designed qualities. learning to distinguish between good and bad shots from the input source. The instruction of thoughts allows the machine to learn complex concepts through simpler concepts. we build a graph that demonstrates how these definitions have been stacked upon each other, the map is complex and consists of numerous layers. This is why we call AI deep information in this presentation. In problematic portions of deep learning, the influence (and also productivity) is analogous. These resources are not objective a few benches, but pixel data images, text recordings, or audio recordings. They are even positions. Deep learning makes it possible to learn data symbols with various degrees of difficulty through processer models consisting of several computing layer models.

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Water Supply Measurement and Management System Based on IoT with Water Leakage Detection

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Abstract:

Every living creature need water. Water has become a highly useful part in everyone's life. We receive water from rivers, ponds, and other waterbodies, and it is delivered to people via pumps or water tanks. It is supplied not just to people but also to enterprises, hospitals, and other organizations. However, when comparing water supply between rural and urban locations. When compared to rural areas, metropolitan areas receive more water. However, urban areas misuse this. They are taking more water than they are using. They are wasting water by taking more of it. Rural communities are receiving less water than usual because urban areas are taking more water. As we can see, water is being squandered. Leakage is another reason that wastes water. When there is a leak, in the current system, a man must go ahead and repair the leakage spot. It takes time, and there is a possibility that additional water will be wasted. By considering these two and avoiding them, the proposed system that we are following is measuring, monitoring, and leak detection employing the major functions such as Arduino UNO (ATMEGA 328p) and ESP8266 WI-FI module. The sensors involved in this are the level sensor and the flow sensor. We can update the data in the cloud by using the thing speak cloud.

Key Words: *Arduino UNO, ESP8266 WI-FI Module, Level Sensor, Flow Senor.*

1. INTRODUCTION

A .Motivation:

The inspiration originates from the real-world issues that we experience these days due to a lack of water. Every year, between 250 and 500 million m3 of drinking water is lost in numerous megacities. Saving this amount may offer drinking water to an additional 10 to 20 million people in each megacity. We can see how much water is wasted by looking at the numbers above. We can estimate how much water is lost by comparing water waste in different countries.

The graph above depicts the percentage values of water waste in various cities around the world. We can gradually deploy this project in certain locations to reduce this.

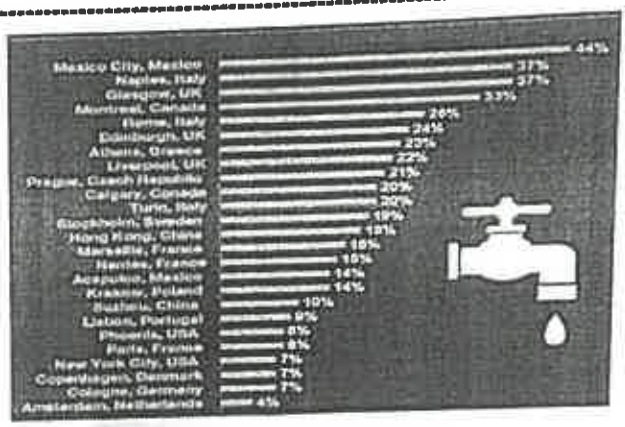

Fig 1 : wastage of water in different cities

The population of the twenty-first century is rapidly increasing. Few people have access to clean drinking water, which is a major issue in today's world. Due to the huge population, there are also circumstances when water theft and leakage occur. We can control and monitor the water supply using this technology, reducing the amount of water wasted due to leaks and theft by consumers.

B. Objective:

Water is the most precious and valuable resource for all humans; however, today's water supply systems are having trouble operating in real-time because of a lack of water resources due to reduced rainfall. As the world's population grows, so does the number of people living in cities. As a result, water has become a critical issue that affects water distribution, conservation, consumption, and quality. The main objective to implement this project is to design and develop a low cost reliable and efficient technique to make proper water distribution by continuous monitoring and also we can solve water-related difficulties by controlling it from a central server.. Based on our objectives and the difficulties in today's water delivery systems, we may conclude that a proper monitoring and regulating system is essential. So, we are focusing on real-time water supply monitoring in this project. Water supply can be ensured through continuous water level monitoring, allowing for optimal distribution of the available water in tanks, water flow monitoring, and whole pipeline monitoring.

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An Improved Frequency Resolution Using a two Channel two Phase Microcontroller Lock-In Amplifier

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ABSTRACT

Frequency resolution is the smallest portion of change in resulted frequency can be detected.Generally traditional amplifiers which are used for amplification of signals lead to scenarios where the noise levels are in millivolt range and thus leading to poor signal-to-noise ratio. Here we are using two phase lock in amplifier with two channels to send the two different information at a time to improvise the frequency resolution andto generate two alternating voltages of same frequency.When there is a need to send information for long distances, we definitely use some techniques for the security purpose of data. But due to some external disturbances, noise is added to the information which makes the loss of information sometimes. At that time enhancement of frequency resolution plays a vital role by converting the analog information into digital information. The conversion of data happens when the sampling frequency must be twice the frequency of input signal.This helps in extraction of signal of interest at a specific frequency from an output signal which contains significant noise levels at other frequencies. This approach can also be applied in embedded design to measure frequency dependent sensors with high quality factor and also in scientific instrumentation such as scanning probe microscopes or even for educational purposes.

Key words –Frequency, lock-in, lock-in-amplifier, resolution, sampling, signal-to-noise ratio.

1.INTRODUCTION

Two-phase lock-in amplifiers are instruments that measure the amplitude and phase of amplitude modulated signals. It is used in multitude of experiments in science and technology in diverse scenarios. The most common application is in the improvement of the signal-to-noise ratio of an experiment. The lock-in exploits the limited bandwidth of noise and modulates the excitation source of the experiment in a different frequency to finally demodulate a cleaner response signal.

In this case, the dynamic reserve should be enhanced to better recover the signal from the noise. At different scenario, the LIA can be used to measure the frequency dependent response of devices and experiments. Different from the applications cited before, this application requires an instrument with enhanced frequency resolution and bandwidth of operation allied to the signal recovery capabilities.

The actual state of art commercial digital LIAs works in the tens of mega Hertz bandwidth and cost in the range of thousands of dollars. These instruments are power hungry equipment that uses field programmable gate arrays and or custom integrated circuits to achieve these high frequencies of operation. If the characteristics of the application requires lower bandwidth and/or low power consumption, microcontroller-based lock-in can have its niche since they have generally operated in lower frequencies than FPGAs. They are less flexible in operation, however, possessing advantage of significantly lower cost.

A sine wave excitation can be generated by direct digital synthesis and digital to analog converter. This approach generates a low distortion sine wave signal, frequency response proportional to sampling rate of digital to analog converter, but the speed of operation is limited. So, to overcome the lower speed of operation and need of fast external DACs, square wave can be used for demodulation and excitation in microcontroller LIAs. By using square wave demodulation or excitation, odd harmonics would appear and it can distort the output of signal lock-in.

In microcontroller, square wave is generated at timer peripheral. Frequency resolution of a signal generated by this has limited bandwidth. When high quality frequency resolution is required, square wave can be dithered to achieve better resolution. The process of square wave dithering consists of inclusion of minimum changes in the period of the signal to generate a fractional change n the principal harmonic frequency when the signal is averaged over suitable time. The square wave dithering is mainly used in pulse width modulation signals to enhance the dc component granularity.

It was shown that this process can also enhance the frequency resolution. The measurement of quartz tuning forks mechanical resonators is an example where high frequency resolution is required from a LIA. QTFs have been used in different applications as humidity and temperature sensing, density/viscosity sensors, as a probe in scanning probe microscopy, and in many other sensing applications. These devices are mass fabricated and inexpensive, and they also possess a high-quality factor, enabling sensitive resonant frequency measurements.

The high Q is the constraint that should be taken in account when choosing the LIA to measure QTFs. The range of frequencies that the resonance takes place is narrow, under few Hertz, consequently, finer frequency resolution is preferred instead of high dynamic reserve or high with high-frequency granularity with minimum external circuitry in a microcontroller, dithering the timer to achieve the required frequency steps needed to resolve the QTF sensors resonant curve.

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PHOTOVOLTAIC THERMOELECTRIC GENERATOR MONITORING SYSTEM USING DAQ AND ATMEGA328P

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ABSTRACT

In this project, we are going to measure the voltage produced by the PV &TEG module during the entire day from sunrise to sunset. The ATMEGA328P microcontroller chip which is Arduino used in this project is capable of measuring the voltage every second in real-time. By using the data acquisition technique to automatically collects and record data from sensors. Sunlight can be converted into electricity to generate renewable energy. In this PV-TEG system, the photovoltaic module in this system converts the solar heat energy into electrical energy up to some small wavelengths of the solar energy. The long wavelengths of solar energy are converted into heat energy to use this lost energy we use the TEG module. In this module, the heat energy is applied at one side and another side is attached to a cold side due to this temperature difference the TEG module generates usable renewable energy. For energy management, that is the voltage produced by the Photovoltaic cell and the thermoelectric generator is stored by using the IoT-based management.

***Keywords** - Photovoltaic, Thermoelectric generator, Data Acquisition, Microcontroller, Arduino.*

1. INTRODUCTION

The hybrid photovoltaic-thermoelectric system (PV-TE) recently gained a lot of recognition because of its potential to use solar energy across the entire spectrum and to increase the energy efficiency of the combined system. Solar energy is considered to be one of the most renewable energy sources as it is easily available, clean, and cheap. Nowadays, solar energy production has been given more importance because of fast technological development and possible usage towards the worldwide energy demands.

The information about climate-energy sources and temperature availability are associated with the locations. Energy plays an integral role in the socio-economic development of any society. Power plays a great role wherever there is a livelihood. So for storage of information, we are using the Data acquisition system technique.

The data acquisition system (DAS) plays an important role in any monitoring system and is used to collect data from different sensors of a PV system. Then, this data is digitalized for storage and the DAS sends data to the control centre for processing and presentation. The data acquisition system should be automatic using an A/D system to convert the analog signal from the instruments to digital form. Here, we are using the principle of data acquisition that we are storing the data of the produced voltage by using the iot cloud (using thing speak).

A data acquisition system (DAQ) is a device used to automatically collect and record data from sensors and electronic equipment, which are later used for simulation and data analysis.

The data acquisition device is broadly used in all systems relating to technology in all electronic spheres. It has been used to gather data for a system related to meteorological and electrical parameters because of its ability to collect and store data over a more extended period. In particular, in Photovoltaic (PV), the DAQ was used in monitoring the electrical parameters. It is pretty valuable for a PV system as it can collect a range of data over a long period without an operator having to inspect them thoroughly.

2. EXISTING SYSTEM

In this, we are using both sunlight and heat energy to generate electricity. But unfortunately, there is no existing system for this that uses both sunlight and heat energy to generate electricity, and currently, all the existing systems are based on sunlight only to generate electricity.

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EXPERIMENTAL INVESTIGATION OF VCR SYSTEM BY USING DIFFUSER AT VARIOUS DIVERGENCE ANGLES

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ABSTRACT

This paper discusses the concept of design and testing of diffusers placed in vapour compressor refrigeration system. The experiment was performed on three divergence angles of diffusers placed at condenser inlet. The three divergence angles of diffusers are 10^0, 15^0 and 20^0. Diffuser is mainly used to improve the coefficient of performance (COP) of the system. Coefficient of performance(COP) can be improved by increasing the refrigerating effect and decreasing the compressor work. The refrigerant coming from compressor is having high velocity. To avoid the problems of high velocity refrigerant one of the way is to use diffuser at condenser inlet. By using diffuser this high velocity refrigerant coming from compressor is converted into pressure energy due to increase in diameter of diffuser. Thus by using diffuser we can improve the coefficient of performance of the system. The performance coefficient is investigated with and without diffusers. During the test, the coefficients of performance (COP) of the system without diffuser and with diffuser were found. It was concluded that COP was increased by 35.10%.The parameters of the system were also investigated in this present work. After analyzing with various diffuser divergence angles, diffuser with the divergence angle $\alpha=15^0$gives best results in improving performance of VCR system.

Key words: Diffuser, Vapour Compression Refrigeration System, COP, Divergence angles

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NOMENCLATURE

COP	coefficient of performance,
C_p	specific heat of water,kj kg^{-1} K^{-1}
dT	change in water temperature,^{0}C
dt	time logged corresponding to dT
h	specific enthalpy,J kg^{-1}
m	mass of the water,kg
Q	refrigeration effect, kj
VCR	vapour compression refrigeration

MOTORCYCLE NUMBER PLATE DETECTION WITHOUT HELMET

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Abstract: We currently face a number of issues with India's traffic restrictions, many of which have workable solutions. It is illegal to operate a motorbike or scooter without a helmet. India has seen an upsurge in the number of accidents and fatalities as a result of traffic violations. The current system largely uses CCTV records to monitor traffic offences, requiring traffic police to zoom in on the licence plate in the event that the rider is not wearing a helmet and look into the frame where the infringement is taking place. However, given the high frequency of traffic offences and the rising daily usage of motorbikes, this demands a significant amount of labour and time. What if there was a system that would check for traffic violations like riding a motorbike or moped without a helmet and, if found, would automatically extract the number plate number of the offending vehicle. Recent studies have successfully completed this work using features like CNN, R-CNN, LBP, HOG, and HAAR, among others. However, these works have limitations in terms of effectiveness, precision, or how quickly objects may be identified and categorized. In this research project, a non-helmet rider detection system is constructed in an effort to automate the detection of the traffic infraction of not wearing a helmet and the extraction of the number plate number of the vehicle. Object Detection with Deep Learning at three layers is the key idea. People, motorcycles or mopeds were discovered at the first level using YOLOv2, helmets were detected at the second level using YOLOv3, and licence plates were detected at the final level using YOLOv2. After that, OCR (Optical Character Recognition) is used to obtain the number plate registration number. All of these methods are subject to predetermined restrictions and circumstances, particularly the part that extracts licence plate numbers.The efficiency of the execution is essential because this job uses video as its input. We developed a comprehensive solution for both helmet detection and extracting licence plate numbers using the aforementioned approaches.

Index Terms: - CNN, R-CNN, LBP, HOG, and HAAR

I Introduction

Helmets decrease the likelihood that the skull will slow down, which reduces head motion to nearly nothing. As time goes on, the helmet's cushion absorbs the impact of collisions. head stops moving. Additionally, it disperses the force of the hit across a wider region, protecting the skull from serious wounds. More significantly, it serves as a mechanical shield between the rider's head and whatever it is they come into touch with. If a full helmet of good quality is worn, injuries can be reduced. The purpose of traffic regulations is to instill a sense of discipline so that the risk of fatalities and serious injuries can be greatly reduced. However, in practise, these laws are not strictly followed. To solve these issues, effective and workable methods must be developed. Existing practises include employing CCTV to manually monitor traffic. But in this case, performing so many iterations is necessary to achieve the goal, and this requires a lot of human resources. Therefore, cities with millions of residents and a large number of moving cars cannot afford to use this subpar manual approach of helmet identification. So, combining YOLOv2, YOLOv3, and OCR, we now offer a methodology for comprehensive helmet detection and licence plate extraction. The basic phases in a helmet detection system include dataset collecting, moving object identification, background subtraction, and object categorization using neural networks.

2. Literature survey

2.1 Detection of Helmet on Motorcyclists

In this paper, the process of classification and descriptors are used to detect the vehicles and then detect the persons with 2 wheelers and detect if they are wearing the helmet or not. The processes used in this projects are:

Vehicle segmentation and classification:

Detection of the background: A reference of the road as background is considered so that the motion of the vehicle can be¬ detected with respect to the stable object (road).

Segmentation of moving objects:Using background subtraction, the moving objects (vehicles) are differentiated with the¬ background which gives only an image of the vehicles and the background will be eliminated.

Vehicle classification:The vehicles are classified as motorcycles or non-motorcycles and a feature vector is¬ obtained for each generated image and passed on to random forest classifier to categorize vehicle as motorcycle or a no motorcycle..

ATTENDANCE CAPTURE SYSTEM USING FACE RECOGNITION

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Abstract: For Every Organisation, today Attendance is the most significant factor to document the Person's presence. The presence of a person in an organization indicates that the person is fulfilling their obligation to visit the organization. Attendance is typically taken manually. It can be signed or called out one at a time. Face recognition can be used to track attendance from everyone in an organisation.Face recognition has played a significant part in image processing. We implement Machine Learning Algorithms such as Support Vector Machines (SVM) and Haar-Cascade Algorithms in the existing system for Face Recognition. We use the YOLO framework, a Deep Learning Technique, in the suggested system. The System can recognise a person's face using these techniques.

Index Terms: - Support Vector Machines (SVM) and Haar-Cascade Algorithms

1 Introduction

Old-fashioned attendance systems are no longer effective for tracking student attendance. Every year, the number of students enrolled in schools and universities grows.

The attendance of students is really important. As a result, it is vital to discuss an effective system that automatically records a student's attendance. Maintaining attendance is critical in all schools/colleges for assessing student performance. In this sense, each school/college has its unique technique. Some students are manually recording attendance using attendance registers, marking attendance sheets, or a file-based system, while others have embraced ways of automatic attendance using biometric approaches. However, under these approaches, students must wait in line for an extended period of time. There are numerous biometric systems on the market, but the key authentications are the same across all modalities. Every biometric system has an enrollment process in which the unique identifier is entered.A person's characteristics are saved in a database, and then the person goes through some identification and verification steps. These two methods compare a person's biometric feature to a previously stored template acquired at the time of a student's enrollment.

Biometric templates can be of several types, such as fingerprints, eye iris, voice, and so on. For automatic attendance of students in the classroom environment without student intervention, our system employs the facial recognition approach. The new attendance management system's development goal is to computerize.

We implemented an attendance management system to track students' attendance. With the implementation of this attendance system, students who skip courses without the permission of the faculty are no longer permitted.

Learning has become harder. The purpose of an attendance management system is to count the number of students and encourage them to attend lessons on time in order to improve the quality of instruction.

A roll call is usually done to determine whether or not a student is present in class, which wastes a lot of time. Face recognition has made enormous advances in recent years, thanks to rising technology and the development of deep learning, which leads us to a new way of thinking about how to handle the problem of student registration. So, in order to save time, the idea of automatically counting the number of students in a class based on facial recognition is implemented.

This system was created by utilizing a facial recognition approach, which is used to recognize an individual's face. Many alternative face recognition algorithms have been devised to improve the system's efficiency. The system gives higher accuracy due to the usage of a wide variety of facial features such as shape, color, LBP, wavelet, auto-correlation, and so on. However, face identification remains a difficult problem for us due to fundamental difficulties with numerous aspects such as illumination changes, face rotation, facial expression, and so on.

2. Literature survey

Face recognition, one of the most effective applications of

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BRAIN TUMOR DETECTION AND SEGMENTATION MRI IMAGES USINGMACHINE LEARNING

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Abstract— brain tumor detection and segmentation MRI Images is very useful in recent years. Due to MRI Images, we can detect the brain tumor. For detection of unusual growth of tissues and blocks of blood in nervous system can be seen in an MRIImages.Thefirststepofdetectionofbraintumoristocheckthesymmetricandasymmetric Shape of brain which will define the abnormality. After this step the next step is segmentation which is based on techniques. These techniques are used to design the image in MRI. Now with this help of design we can detect the boundaries of braintumorandcalculatetheactualareaoftumor.Thisgivescertaininformationlikerebuildingmissingedgesandextractingthesilentedges.Accuracyandclarityinan MRIImagesare dependent on each other.

INTRODUCTION

In primary stage the tumor can be removed but in secondary stage, the tumor disease spreads, due tothis after removal of tumor the seldom remains and grow back again so this is the biggest problem in the secondary stage of tumor.

Why does this problem occur? It occurs due to the inaccurate location of the area of tumor. The next step is detection techniques. In this the any segmentation and detection are to measure detection techniques the imaging of brain tumor can be done by

1) MRI scanning that is magnetic resonant image
2) CT scanning i.e., computer tomography

Ultra sound etc Searchable Encryption (SE) is an important technique to guarantee data security and usability in the cloud at the same time. Cloud computing is the use of computing resources (hardware and software) that are delivered as a service over a network (typically the Internet). The name comes from the common use of a cloud-shaped symbol as an abstraction for the complex infrastructure it contains in system diagrams. Cloud computing entrusts remote services with a user's data, software and computation. Cloud computing consists of hardware and software resources made available on the Internet as managed third-party services. These services typically provide access to advanced software applications and high-end networks of server computers.

The goal of cloud computing is to apply traditional supercomputing, or high-performance computing power, normally used by military and research facilities, to perform tens of trillions of computations per second, in consumer-oriented applications such as financial portfolios, to deliver personalized information, to provide data storage or to power large, immersive computer games.The cloud computing uses networks of large groups of servers typically running low-cost consumer PC technology with specialized connections to spread data-processing chores across them. This shared IT infrastructure

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Possession of Dynamic Group-Oriented Provable Data in the Cloud

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ABSTRACT_ As a significant security property of distributed storage, information respectability has not been adequately concentrated under the multi essayist model, where a gathering of clients work on shared documents cooperatively and any gathering part can refresh the information by change, inclusion, and erasure tasks. Existing works under such multi-author model would bring enormous capacity cost to the outsider verifiers. Moreover, as far as we could possibly know, none of the current works for shared records upholds completely unique tasks, which infers that clients can't openly play out the update activities.

The first public auditing scheme for shared data that achieves constant storage costs for verifiers and supports fully dynamic operations is presented in this paper. Our plan, named Implores, is helped by another worldview for distant information honesty checking. We proposed a novel cryptographic primitive known as permission-based signature and an authenticated structure called blockless Merkle tree to put the new paradigm into practice. Extensive testing shows that PRAYS is just as effective as the other, less useful options. PRAYS is, in our opinion, a significant step toward the creation of practical multiwriter cloud storage systems..

1.INTRODUCTION

CLOUD storage is an appealing paradigm for both individuals and businesses because it provides on-demand, ubiquitous access to a pool of configurable remote storage resources. Alongside this comfort, information uprightness turns into a main pressing issue about capacity re-appropriating, particularly taking into account stage disappointments and human mistakes [1], [2], [3]. To ensure information trustworthiness in distributed storage administrations, numerous applicable cryptographic natives have been proposed [4], [5], [6], [7], [8]. By validating and assigning a cryptographic tag to each data block in a file, these primitives typically make it possible for a verifier—the owner of the data or a special third party—to examine the integrity of remote data without downloading the entire file,

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A Framework for Secure Password Authentication Based on Encrypted Negative Passwords

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Abstract_ It is all about securing passwords and making the system more secure against intruders. Secure password storage is critical in systems based on password authentication, which, despite some security flaws, remains the most widely used authentication technique. Consumers are responsible for creating their own passwords on most e-commerce sites, and they frequently do so without assistance from the web site or system administrator. Consumers do not create long or complicated passwords because they cannot remember them, according to common knowledge. Most e-commerce sites employ a method in which passwords are only encrypted and not properly secured. In our project, we propose a password authentication framework designed for secure password authentication.. In our framework, first the received plain password from a client is hashed through a cryptographic hash function (Script and PBKDF2.)Then, the hashed password is converted into a negative password. Finally, the negative password is encrypted into an Encrypted Negative Password(ENP)(The cryptographic hash function and symmetric encryption make it difficult to crack passwords from ENPs. Moreover, there are lots of corresponding ENPs for a given plain password, which makes pre computation attacks (e.g., Brute Force Attack , Rainbow table attack and Dictionary attack)..

Key Words: Encrypted Negative Password, Symmetric key algorithm, Hashed password

1.INTRODUCTION

The development of the Internet, a vast number of online services have emerged, in which password authentication is the most widely used authentication technique, for it is available at a low cost and easy to deploy Hence password security always attracts great interest from academia and industry. Despite great research achievements on password security, passwords are still cracked since users' careless behaviours. The instance, many users often select weak passwords they tend to reuse same passwords in different systems they usually set their passwords using familiar vocabulary for its convenience to remember. In addition, system problems may cause password compromises. It is very difficult to obtain passwords from high security systems. In this case stealing authentication data tables (containing usernames and passwords) in high security systems is difficult. On the other hand, when carrying out an online guessing attack,

AN APPROACH FOR PREDICTION OF LOAN APPROVAL USING MACHINE LEARNING TECHNIQUES

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ABSTRACT

_ A vital methodology in prescient examination is utilized to concentrate on the issue of foreseeing credit defaulters: The model of logistic regression. The information is gathered from the Kaggle for contemplating and expectation. Strategic Relapse models have been performed and the various proportions of exhibitions are processed. Sensitivity and specificity are used as performance metrics to compare the models. The final outcomes have demonstrated that the model produces distinct outcomes. Model is barely better since it incorporates factors (individual ascribes of client like age, reason, record of loan repayment, credit sum, credit term, and so on.) other than financial records data (which shows abundance of a client) that ought to be considered to accurately compute the likelihood of default borrowed. Hence, by utilizing a calculated relapse approach, the right clients to be focused on for conceding credit can be effortlessly identified by assessing their probability of default borrowed. The model reasons that a bank shouldn't just objective the rich clients for giving credit yet it ought to survey different traits of a client too which have a vital impact in credit conceding choices and anticipating the credit defaulters..

1.INTRODUCTION

People today rely on bank loans to meet their needs. In recent years, the rate of loan applications has increased extremely quickly. Risk is constantly implied in endorsement of credits. Customers' ability to repay their loans on time is a top priority for bank executives. Occasion in the wake of playing it safe and examining the advance candidate information, the credit endorsement choices are not right all the time. There is need of mechanization of this cycle so that credit endorsement is safer and cause less misfortune for banks Computerized

An Efficient Identify Of Fake Currency Using Deep CNN

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ABSTRACT: The one important asset of our country is Bank currency and to create discrepancies of money miscreants introduce the fake notes which resembles to original note in the financial market. In general, by a human being, it is very difficult to identify forged note from the genuine not instead of various parameters designed for identification as many features of forged note are similar to original one. To discriminate between fake bank currency and original note is a challenging task. In this, the banknote authentication dataset has been created with the high computational and mathematical strategies, which give the correct data and information regarding the entities and features related to the currency. Data processing and data Extraction is performed by implementing machine learning algorithms and image processing to acquire the final result and accuracy.

Key words: Bank Data Processing, Convolutional Neural Nets, Feature Extraction ,Image Processing,

1. INTRODUCTION

Financial activities are carrying out in every second by many persons in which one most important asset of our country is Banknotes [3]. Fake notes are introduced in the market to create discrepancies in the financial market, even they resemble to the original note. Basically they are illegally created to complete various task [12]. Fake Indian Currency Note (FICN) is a term used by officials and media to refer to counterfeit currency notes circulated in the Indian economy. In 2012, while responding to a question in parliament, the Finance Minister, P. Chidambaram, admitted that there is no confirmed estimate of fake currency in India. However, several central and state agencies are working together, and the Ministry of Home Affairs has constituted the Fake Indian Currency Notes Co-ordination Center (FCORD) to curb this menace. Automatic currency note recognition technology is specific to a country and can be generalized with standard banknotes of each country. If there is a system which can identify a currency note as fake through a camera image is one promising direction towards solving this problem. Convolutional neural network models have seen tremendous success in image classification tasks. And identifying a currency note as fake or real from its image is essentially a binary image classification task. Here we test the feasibility of CNN models for fake currency identification, which can be trained without manual feature extraction on raw images of currency notes with a simple, efficient and very accurate approach.

In the last eight years more than 3.53 lakh cases of counterfeit currency detection in India's banking channels is heighten according to latest government reports. The practice of counterfeiting became more refined with the arrival of paper currency.

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HEALTHCARE: SKIN CANCER CLASSIFICATION USING DEEP LEARNING MODEL

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Abstract— skin cancer is one of the most important problems faced by the world, due especially to the rapid development of skin cells and excessive exposure to UV rays. Therefore, early detection at an early stage employing advanced automated systems based on AI algorithms plays a major job in order to effectively identifying and detecting the disease, reducing patient health and financial burdens, and stopping its spread in the skin. Damage to tissues is a hallmark of the cancer spectrum of disorders. Studies that can aid professionals during the diagnosis phase are necessary due to the difficulties in identifying skin cancer, a prevalent type of cancer, without technical support. The HAM10000 dataset was used to create a deep learning model with 7 convolution layers and 3 neural layers to categorisedermoscopic images into 7 categories. The proposed model was tested on a set of data, and its accuracy was determined to be 99.01%. This finding demonstrates that the suggested methodology can aid dermatologists in making accurate skin cancer diagnoses.

• INTRODUCTION

Skin lesions are a common disease that cause suffering, some of which can have serious consequences, for millions of people globally .Because of its complexity, diversity, and similarity, skin disease can only be diagnosed by dermatologists with long-term clinical experience and is rarely reproducible. It is likely to be misdiagnosed by an inexperienced dermatologist, which can exacerbate the condition and impede appropriate treatment. Deaths from skin cancer rank among the highest of any disease worldwide Melanoma and non-melanoma skin cancers are the two main categories of this disease. If these tumours are caught early enough, the cure rate could reach 90% . Visual examination is challenging and may lead to erroneous investigation due to the great similarities between different types of skin diseases. hence, skin lesion classification must be automated .The use of AI and image processing techniques allowed for this categorization system to succeed. Advances in deep learning have influenced numerous scientific and industrial fields and have realized significant achievements with inspiration from the human nervous system. With the

Malware Detection Using Machine Learning and Performance Evaluation

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ABSTRACT

As malware attacks increase exponentially, they continue to constitute a serious security risk for computer users, businesses, and governments in the digital era. The static and dynamic analysis of malware signatures and behaviour patterns used by current malware detection technologies is time-consuming and inefficient in finding unidentified malwares. Modern malware use evasive tactics like polymorphism, metamorphism, and others to swiftly change its behaviour and produce a lot of malware.

Machine learning algorithms (MLAs) are being used to effectively analyse malware since new malware is typically a version of an existing infection. Significant feature engineering, feature learning, and feature representation are needed for this. The feature engineering stage can be entirely skipped by employing the more sophisticated MLAs, like deep learning. Although there are some new research projects in this area, the algorithms' performance is what matters. skewed by the training set of data. To develop new, improved approaches for efficient zero-day malware detection, bias must be reduced and these methods must be evaluated independently. This study compares deep learning with traditional MLAs to fill a gap in the literature methods for identifying and classifying malware using both public and private databases. Public and private datasets used in the experimental study have train and test splits that are not connected to one another and were gathered at various dates. In addition, we suggest a unique image processing method with parameters that are ideal for deep learning architectures and MLAs. A thorough experimental examination of these techniques shows that deep learning architectures perform better than traditional MLAs. Overall, this work suggests a scalable and hybrid deep learning system for real-time deployments for an efficient visual detection of malware. A novel improved technique for efficient zero-day malware detection uses visualisation and deep learning architectures for static, dynamic, and image processing-based hybrid approaches in a big data context.

1 INTRODUCTION

The quick development of technology in this digital age of industry has had an impact on both personal and professional everyday activities. The modern idea of the information society has evolved thanks to the Internet of Things (IoT) and its applications. However, security issues provide a significant barrier to achieving the benefits of this industrial revolution as cybercriminals target specific PCs and networks in order to steal private information for financial gain and disrupt systems. Such attackers utilise malicious software or malware to expose system vulnerabilities and pose major hazards. A computer programme called malware is designed to harm the operating system (OS). Depending on its function and behaviour, malware is given different names such as adware, spyware, virus, worm, trojan, rootkit, backdoor, ransomware, and command and control (C&C) bot. Malware detection and mitigation is a developing issue in the world of cyber security. Malware writers get better at avoiding detection as researchers create new methods.

Blockchain based Milk Delivery for Stallholder Dairy Farmers in Kenya: Enforcing Transparency and Fair Payment

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ABSTRACT

The agri-food supply chain now has easier data acquisition and immutability because to recent advancements in IoT and software development. To provide traceability in the agri-food sector utilising distributed ledger technologies (DLT), such as Blockchain technology, a number of frameworks and applications have been presented in recent years. A Blockchain-based traceability technology with a reduced environmental impact and lower cost for each transaction provided by the supply chain hasn't yet been demonstrated in another study, though. This article describes a Green Blockchain-based traceability platform that is applied to the supply chain for Fontina PDO cheese as a part of the "Typicalp" project, which is supported by the European Union (EU). Based on Algorand Blockchain, which employs the Pure Proof-of-Stake method, the suggested traceability scheme that is environmentally sustainable, highly scalable, and requires little computer resources. The established traceability technology has enabled digitization of the entire production chain, making the data irreversible and accessible in real-time for Fontina consortium operators and final consumers. This has financial and environmental advantages as well.

1. INTRODUCTION

Information and communication technology (ICT) has established a reputation as a crucial instrument for successfully and efficiently producing, organising, storing, and sharing information. ICT has been used to give farmers timely information on topics like weather forecasts, market information and prices, diseases and pest control, among other things, in order to boost agricultural productivity. For instance, ICT is associated with enhanced agricultural productivity, food crop diversification, employment creation, and improved access to cash crop markets. ICT has the ability to reach the underprivileged and create livelihood prospects as a way to increase agricultural productivity even in the most isolated rural locations. These ICTs include contemporary blockchain-like ICTs that are widely employed in the business, industrial, and economic realms. Blockchain is viewed as a diversion. a novelty, too. This is because distributed transactions built on transparent and reliable infrastructure may be supported by blockchain technology. Because they rely on cryptographic hash functions in hash-chain trading (also known as blocks) on the blockchain network, blockchain actions are by nature trustworthy and irreversible. On the blockchain, records cannot be altered or changed. After the agreement system has solved and verified the complicated numerical problem, the following block of exchanges is only added. The data from the previous block is used to establish a distinct cryptographic key for every new block. Blockchains are utilised as a loosely distributed record and are periodically audited by a single organisation. Most centres follow the norm of passing over and approving new blocks. . Blockchains can be regarded as safe by design and provide an extended processing architecture with great adaptability to non-critical failures, even though blockchain records are not immutable because forks are possible. Decentralisation, adaptability, and security are the three fundamental issues that the majority of blockchain projects address. In order to ensure that nobody is in danger, designers are continually adjusting these angles. Future research will contain a thorough investigation of the structure and structure of the blockchain.

2. LITERATURE SURVEY AND RELATED WORK

Awuor, Fredrick, et al. [1] The importance of ICT to food security and the sustainability of agriculture in developing nations is illustrated in this study. The use of ICTs in agriculture could make information more accessible and encourage or promote knowledge sharing. It is crucial for offering any important data production, management, storage, and retrieval. The data is saved in a targeted oriented database. Rizka In order to permit and further improve the seriousness of dairy farmers, Tauria Nuryadi et al.'s research plans to comprehend the network of dairy production, particularly the conditions that dairy farmers

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Practical Multi-Keyword Ranked Search with Encrypted Cloud Data Access Control

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ABSTRACT_ Data owners are increasingly inclined to store their data in the cloud due to the rapid growth of data volume in the cloud computing environment. Despite the fact that information reevaluating decreases calculation and capacity costs for them, it definitely brings new security and protection worries, as the information proprietors lose direct control of delicate information. Meanwhile, the majority of current ranked keyword search schemes concentrate primarily on improving search efficiency or functionality, but they do not simultaneously provide effective access control or formal security analysis. To address these restrictions, in this paper we propose an effective and security saving Multi-watchword Positioned Search plot with Fine-grained admittance control (MRSF). By combining coordinate matching with Term Frequency-Inverse Document Frequency (TF-IDF) and improving the secure kNN method, MRSF can perform ciphertext retrieval with high accuracy. In addition, the polynomial-based access strategy enables it to effectively refine users' search privileges. Formal security examination shows that MRSF is secure regarding secrecy of rethought information and the protection of record and tokens. Broad examinations further show that, contrasted and existing plans, MRSF accomplishes higher pursuit exactness and more functionalities productively.

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Pothole Detection System on Road using Convolution Neural Networks

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ABSTRACT_ Roads are connecting strains between distinct locations and are used in our each day life. Roads' periodic renovation maintains them protected and functional. However, asphalt pavement distresses motive potholes which may additionally amplify the wide variety of accidents. Detecting and reporting the existence of potholes to accountable departments can keep the roads from getting worse. This learns about deployed and examined distinct deep studying architectures to observe the presence of potholes. First, numerous pix of potholes are captured with the aid of a cellular phone set up on the automobile windshield. Then pothole photos downloaded from the net expanded the measurement and the variability of our database. . Second, more than a few object detection algorithms are employed to observe potholes in the street pics In this assignment we are the usage of Convolution Neural Network (CNN) to notice pothole from given images. The consequences exhibit that photos have been efficiently recognized with the fantastic accuracy of 97.08% the use of one of the pre-trained convolutional neural networks

1.INTRODUCTION

Poor street stipulations due to potholes have been a foremost reason of street accidents and injury to vehicles. Recently, with an make bigger in vehicular site visitors and pollution, the roads are getting stuffed with huge and small potholes in nearly each and every town in the country.

Potholes took a lethal toll in 2017, claiming nearly 10 lives day by day with annual fatalities in the u . s . including up to 3597—a extra than 50% upward push over the toll for 2016 (Dash, 2018). This is a predominant trouble in many developed nations also. A massive quantity of cash is sanctioned by means of the authorities to fill the potholes however due to inefficient

Machine Learning Air Quality Index Calculator

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ABSTRACT_ Human health is greatly influenced by air quality. Air pollution causes a variety of health problems, particularly in children. The capacity to predict air quality allows the government and other concerned organisations to take the required precautions to protect the most vulnerable from being exposed to harmful air quality. Traditional approaches to this problem have had extremely little success due to a lack of access to significant longitudinal data.

Air pollution is becoming a big concern in India and around the world. Proper or accurate prediction or forecasting of Air Quality or the concentration level of other Ambient air pollutants such as Sulphur Dioxide, Nitrogen Dioxide, Carbon Monoxide, Particulate Matter with diameter less than 10, Particulate Matter with diameter less than 2.5, Ozone, and so on is critical because the impact of these factors on human health is severe..

This project focuses on the view (or) presentation of correct AQI utilising the Ada Boost Regressor algorithm technique used for Air Quality Index (AQI) prediction. Because machine models can automatically examine enormous volumes of data and choose significant aspects, they eliminate the need for human interaction. With huge datasets, ML models outperform traditional statistical methods in terms of accuracy. Such models have long been used to forecast AQI levels..

1.INTRODUCTION

Air quality index (AQI) is a numerical scale used for reporting day to day air quality with regard to human health and the environment. The daily results of the index are used to convey to the public an estimate of air pollution level. An increase in air quality index signifies increased air pollution and severe threats to human health. In most cases, AQI indicates how clean or polluted the air in our surrounding is, and the associated health risks it might present. The AQI centers on the health effects that may be experienced within a

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PREDICTION FORECASTING USING MACHINE LEARNING ALGORITHM WITH PAST AND REAL RECORDS OF FLOOD

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Abstract:- Impact on daily life, flooding is one of the most pressing issues that Malaysia has been dealing with recently. Floods are a type of natural geohazard that typically occur because of consistently heavy rain. This natural phenomenon causes massive damage to the country's property and Gross Domestic Product (GDP). Floods are very harmful for nature, which are very complex to model. The flood prediction model will give risk reduction & it minimizes the future loss of human life. On 18 May 2016 a south Indian state Kerala was affected by flood. Machine learning is a method which provides intelligence to predict the result in future. The performance comparison of ML models is based on the speed, time and accuracy of the result. There exist a lot of machine algorithms which generate models with more accuracy. For flood prediction classification algorithms like decision tree and linear regression are used in this research.

INTRODUCTION

Floods are one of the worst affecting natural phenomena which causes heavy damage to property, infrastructure and most importantly human life. To prevent such disasters Machine learning model is created to predict the floods that can occur in the future. It's hard to create a predictive model because of its complexity. In this system the rainfall data is fed into four different Machine Learning models prior to this process, the data is cleaned and preprocessed, the dataset for training is split into Training set and Test set in the ratio of 7:3. Then the accuracy of each model is compared and the confusion matrix parameters are taken to evaluate and analyze. At the end the best model is chosen by comparing the accuracy. Machine learning provides capabilities to learn from past data. Also based on past data it generates models for future prediction. This technique will be very useful for flood

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Optimizing Profit for Cloud Providers and Users: A Novel Service Mechanism

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Abstract— In this project, we endeavor to outline an administration component revenue driven enhancements of both a cloud supplier and its different clients. We consider the issue from a diversion theoretic point of view and portray the connection between the cloud supplier and its different clients as a Stackelberg amusement, in which the procedures of all clients are liable to that of the cloud supplier. The cloud supplier attempts to choose and arrangement fitting servers and design a legitimate demand distribution technique to diminish vitality cost while fulfilling its cloud clients in the meantime. We inexact its servers determination space by including a controlling parameter and design an ideal demand allotment technique. For every client, we plan an utility capacity which consolidates the net benefit with time productivity and attempt to amplify its incentive under the procedure of the cloud supplier. We plan the rivalries among all clients as a summed up Nash harmony issue (GNEP). We take care of the issue by utilizing variational disparity (VI) hypothesis and demonstrate that there exists a summed up Nash harmony arrangement set for the detailed GNEP. At last, we propose an iterative calculation (IA), which portrays the entire procedure of our proposed benefit component. We direct some numerical computations to check our hypothetical investigations. The test comes about demonstrate that our IA calculation can profit both of a cloud supplier and its numerous clients by arranging legitimate methodologies.

Index Terms—Cloud computing, Generalized Nash equilibrium, Non-cooperative game theory, Profit optimization, Resource allocation, Variational inequality theory.

1.Introduction

Cloud computing is an increasingly popular paradigm of offering subscription-oriented services to enterprises and consumers [1]. Usually, the provided services refer to Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS), which are all made available to the

Attacking and Protecting Data privacy in Edge-Cloud Collaborative Inference Systems

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Abstract_ IoT devices and systems are getting more intelligent and multi-functional as Deep Learning technology advances. They are supposed to run various Deep Learning inference tasks efficiently and effectively. The mismatch between the limited computing capabilities of edge devices and large-scale Deep Neural Networks complicates this requirement. To alleviate this conflict, edge-cloud collaborative systems are presented, allowing resource-constrained IoT devices to host arbitrary Deep Learning applications. . However, the development of third-party clouds may pose privacy concerns for edge computing. We conduct a thorough assessment of the options for exploiting and defending the privacy of edge-cloud collaborative systems in this research. We make two contributions: (1) First, we develop a set of new attacks for an untrusted cloud to recover arbitrary inputs provided into the system, even if the attacker does not have access to the edge device's data or calculations, or rights to query this system. (2) We empirically show that adding noise to solutions fails to counter our suggested attacks, and then present two more effective defence strategies. This gives us insights and guidance for creating better privacy-preserving collaborative systems and algorithms.

1.INTRODUCTION

The Internet of Things (IoT) and deep learning (DL) technologies have developed rapidly in recent years. IoT gadgets become engaging focuses for DL applications. They utilize different sensors (e.g., cameras, receivers, and gyrators) to gather information and data from natural settings, run the DL applications to decipher tangible information, and pursue control choices. The era of Artificial Intelligence of Things (AIoT) has significantly altered our day-to-day lives as a result of the integration of AI and IoT: smallscaled AIoT frameworks are acquainted with fabricate brilliant homes and increment the solace and personal satisfaction; medium-scale AIoT frameworks are sent in stockrooms and plants for higher proficiency and robotization; and the development of smart cities may benefit from large-scale AIoT systems. There are numerous obstacles when deploying DL inference applications on common edge devices. An IoT device can, on the one hand, collect streaming data at a very

PLANT LEAF DISEASE IDENTIFICATION AND PESTICIDE RECOMMENDATION USING CNN

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Abstract: Early plant leaf disease is an important issue in agriculture. Planticides are the most convenient technique to control plant illness. However, excessive usage of planticides is detrimental to plants, animals, and humans. Integrated plant management combines biological and chemical methods and physical measures to keep plants from becoming infected. Machine vision and digital image processing techniques are widely used in agricultural science, and they have a bright future, particularly in the field of plant protection, which eventually leads to crop management. This paper discusses a novel form of plant early detection system. A digital camera is used to capture images of plant-affected leaves. The plant images on the leaves are processed to create a grayscale image, which is then used to detect plant s on the leaves using feature extraction and image classification techniques. The photographs were taken with a digital camera. After that, the photos are transferred to a PC and represented in Python software. The RGB image is then converted to grayscale and feature extraction techniques are performed to it. The automated CNN model was used to diagnose test images.

Index Terms: - Plant Protection, Image Classification Techniques

1 Introduction

India is mostly an agricultural country. Agriculture provides a living for 70% of the population. So boosting crop productivity is a priority right now. The majority of scientists are conducting study in this area. This is quite simple with their new ideas and realistic implementations. However, one of the most serious issues presently is "plant infection" on plants.

This paper focuses mostly on greenhouse crops. There are various crops grown in greenhouses. Vegetables such as cucumber, potato, and tomato, as well as flowering plants such as rose and jasmine, are examples. Whiteflies, aphids, and thrips are the most prevalent plant pests that will impact these greenhouse crops. Planticides are one method of controlling plant illness. Planticides will kill specific plant species. Planticides are harmful to the environment and do significant harm to eco systems. Excessive usage of planticides pollutes the air, water, and soil. Planticide suspensions carried by the wind pollute other places. The focus of this paper is on early plant detection. This suggests that the plants should be observed on a frequent basis. Cameras are used to capture images. The acquired image must next be processed in order for image processing algorithms to interpret the image contents. The emphasis of this paper is on picture interpretation for plant detection.

2. Literature survey

In this section, we will look at some of the current methods for detecting plant s in greenhouse crops, as well as their benefits and drawbacks. The methods are described here, along with their benefits and downsides.

Detection of Plant s Using Video Analysis

This work integrates image processing techniques with knowledge-based strategies.It will only detect whiteflies. This system's results are more trustworthy and accurate than manual techniques. This is a multidisciplinary cognitive vision system that combines many approaches such as computer vision, artificial intelligence, image processing, and so on. They chose rose plant as the testing crop and white fly as the plant for testing in this endeavour. The early stages of detection were quite tough. As a result, they chose mature flies. However, there were some issues with detecting adults. During the photograph capture, the adult may fly away. So they selected to examine the rose leaves while the flies were not active.

Method which use Sticky Traps

The purpose of Detection of insects using a video camera network is to use video analysis to detect plant illness on leaves. It will take longer to detect and count the plants using traditional procedures. As a result, they've created an autonomous method based on video analysis. In the greenhouse, they employed 5 wireless cameras. They chose rose as the crop to test. In this work, sticky traps are used. Sticky traps are nothing more than a sticky material with colours to entice plants. They employed video segmentation algorithms with learning and adaption strategies to find insects. The adaptable system is applicable in all weather conditions.

3 Implementation Study

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APPLYING DATA SCIENCE PRINCIPLES TO CLASSIFY EDIBLE OR POISONOUSMUSHROOMS

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Abstract—

Evaluation of the performance of various machine learning classification methods using a dataset of two different varieties of mushrooms and various mushroom characteristics.

This research project's primary goal is to use machine learning techniques to forecast the mushrooms in a dataset. Which mushrooms are toxic, or edible is predicted Machine learning regression.In fact, it is conceivable to predict the toxicity of mushrooms using machine learning, and this idea has been investigated in the mycology community. A collection of mushroom attributes and labels indicating whether each mushroom is harmful, or edible can be used to train machine learning systems.It's crucial to remember that even if machine learning might make useful predictions, it shouldn't take the place of mycology experts' knowledge. It might be difficult to distinguish between edible and deadly mushrooms, and doing so can have detrimental effects. Therefore, if dealing with mushroom toxicity, always seek the advice of a professional or turn to trustworthy sources.

INTRODUCTION

Scientists and mathematicians started investigating the concept of artificial intelligence in the early 1900s. One of the concepts under examination is machine learning, which teaches a machine how to think and behave like a human. One such subject is data science, which involves drawing conclusions from numerous, huge datasets. Artificial intelligence (AI) is a combination of machine learning, data science, and machine learning. Recommendations, Classification, Pattern Detection, Prediction, Grouping, Anomaly Detection, Recognition, and Forecasting are just a handful of the numerous potential deliverables from data analysis.

The measurements and characteristics of the mushrooms are used in this study to categories them as either edible or poisonous. As a result, this exercise involves binary classification. The data is classified using four Machine Learning techniques.

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USING MACHINE LEARNING FOR GOLD PRICE PREDICTION

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Abstract— This thesis investigates properties of the gold price. Two different aspects have been analysed using two different methods. The concept of fractional Brownian motion has been utilized in the search for evidence of long memory in the gold price. Further, the machine learning techniques Gradient Boosting Machine and XGBoost are used in the investigation of the relative importance of financial and economic variables in a prediction of the gold price. Both aspects are studied across multiple time periods in order to examine the potential change.
We find evidence of long memory in the gold price, however not in all examined time periods from 1979 until now. The first ten years from 1979, as well as the ten years from the start of the 2008 financial crisis to today, appear to have the property of persistence, while the years in between display no evidence of long memory.

Introduction

Gold is a commodity being known to mankind for ages. The scarcity, visual appearance and physical durability have made gold valuable. Its roles range from jewelry, money, industrial usage and being an investment asset. The fact that the gold price extends beyond indicating the value of a certain amount of a commodity, make sit an interesting entity to research.

This thesis aims to further look into some of the gold price' properties, predominantly in the context of gold as an investment asset. Even though gold has been function in gas an investment asset for centuries, we are mostly interested in the last decades, following the fall of the Bretton-Woods system in the 1970s.This was the first occasion the dollar was completely independent from either gold or silver since 1792, and marks a significant change in the market for gold (Hillier, Draper and Faff, 2006). This is when the gold's role as an investment asset truly emerges, and the monetary role diminishes in the world's largest economies ,at least formally.

In the investigation of the properties of the gold price we will look at two aspects. Firstly, we will look for evidence of long memory. Secondly, we will look at gold's relationship to financial and economic factors through the creation of a predictive model.

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VALIDATION AND VERIFICATION of BLOCK CHAIN BASED DIGITAL CERTIFICATE

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Abstract— A blockchain is essentially a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain. A blockchain is essentially a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain. image manipulation has become very easy. In the digital world, each and everything is digitalized in which the certificate of SSLC, HSC, and academic certificate are digitalized in the educational institution and provided to the students. Students are difficult to maintain their degree certificates. For the organization and institution, verification and validation of certificates are tedious and cumbersome. Our project will help to store the certificate in the blockchain system and provide security. First, the paper certificates are converted into digital certificates. The chaotic algorithm is used to generate the hash code value for the certificate. Then the certificates are store in blockchain. And these certificates are validated by using the mobile application. By using blockchain technology we can provide a more secure and efficient digital certificate validation.

INTRODUCTION

Information technology has developed rapidly in recent years, data protection is more necessary than ever. Graduates, whether they choose to continue studying or start job hunting, require various certificates for interviews. However, they often find that they have lost their educational and commendation certificates. Reapplying for hard copies can be time-consuming because certificates are granted by different organizations and in-person application may be necessary. By contrast, applying for an e-copy can save paper and time. By providing information for identity verification, graduates are able to apply for any certificate easily. Advances in information technology, the wide availability of the Internet, and common usage of mobile devices have changed the lifestyle of human beings. Virtual currency, digital coins originally designed for use online, has begun to be extensively adopted in real life. Because of the convenience of the Internet, various virtual currencies are thriving, including the most popular—Bit coin, Ether, and Ripple —the value of which has surged recently. People are beginning to pay attention to block chain, the backbone technology of these revolutionary currencies. Block chain features a decentralized and incorruptible database that has high potential for a diverse range of uses. Block chain is a distributed database that is widely used for recording distinct transactions. Once a consensus is reached among different nodes, the transaction is added to a block that already holds records of several transactions. Each block contains the hash value of its last counterpart for connection. All the blocks are connected and together they form a blockchain. Data are distributed among various nodes (the distributed data storage) and are thus decentralized. Consequently, the nodes maintain the database together. Under blockchain, a block becomes validated only once it has been verified by multiple parties. Furthermore, the data in blocks cannot be modified arbitrarily. A blockchain-based smart contract, for example, creates a reliable system because it dispels doubts about information's veracity. Because information technology has

Voice-mail BOT Using AI Speech Recognition

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ABSTRACT_ Email is one of the most popular ways that people communicate. Today, emails are used to communicate a lot of sensitive and critical information. Around 285 million people are visually handicapped worldwide. Communication is a challenge for these persons who are blind.

These types of visually impaired people feel they are more challenged since technology is advancing at an increasing rate. Therefore, writers suggested a voice-based email system employing AI, which will benefit society and make email systems very accessible to persons with visual impairments.

The most crucial aspect taken into account when creating this system is accessibility. Any system is only considered accessible if it is simple for both able-bodied and disabled users to utilise.

1.INTRODUCTION

We have seen that the presentation of Web has altered many fields. Web has made existence of individuals so natural that individuals today approach any data they need without any problem. Correspondence is one of the primary fields profoundly different by Web.

When it comes to sending and receiving important information over the Internet, e-mails are the most reliable method of communication. However, humans must be able to see in order to access the Internet, and this is the standard. In any case, there are likewise contrastingly capable individuals in our general public who are not gifted with what you have. There are a few outwardly weakened individuals or visually impaired individuals who can't see things and in this manner can't see the PC screen or console.

A review has shown that there are in excess of 240 million outwardly impeded individuals all over the planet. That is to

An Robust Flight Delay Data prediction Based on Machine Learning Algorithms

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ABSTRACT: The consequences of flight delay can significantly impact airports' on-time performance and airline operations, which have a strong positive correlation with passenger satisfaction. Thus, an accurate investigation of the variables that cause delays We applied different machine learning and data analysis approaches, including the Random Forest, logistic regression, and K-Nearest Neighbors (KNN) algorithms, to predict flight delays. In this paper operation data from 2015 to 2020 to identify factors influencing flight delays. Our results showed a decrease in average time delays over the years. Among the Random Forest algorithms tested, the algorithm achieved the highest accuracy test data, indicating its suitability for predicting flight delays, even for unseen data. Further research can focus on refining the models and exploring ensemble techniques to enhance the accuracy of flight delay predictions.

key words: Flight delays Airports, Atmospheric modeling, Analytical models Weather forecasting, Predictive models.

1. INTRODUCTION

Considering that delay is one of the primary measures of efficiency in the system and is a major cost to airport stakeholders, the repercussions from delayed flights can have significant negative economic impacts on traffic managers, airlines, and the most importantly, passengers. Increasing the magnitude of flight delay and associated costs to airlines and passengers is the very first sign that the airspace system is not in equilibrium. Sustainable air traffic growth and existing demand-capacity imbalance during the peak hours of operations at airports and in en route sectors lead to a constant increase in flight delays, especially at airports that are already working at their capacity levels. This calls for more systematic delay monitoring with high accuracy prediction models to support decision-making tools in order to ensure efficient traffic flows. The delay in the flight is considered as one of the greatest difficulties in the aviation industry. Aviation is a dynamic environment, and flights invariably arrive early or late. Various classification and clustering algorithms can be used along with the different technologies evolved to analyze and benefit from the data. Classification algorithms are based on the observation (or analysis) that the value of two or more attributes is often similar.

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CRYPTCLOUD+ : SECURE DATA ACCESS CONTROL OVER ENCRYPTED DATA

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Abstract— To propose an authority and revocable Crypt Cloud with white-box traceability and auditing to achieve Security guarantees should be provided –to protect the integrity of the data and the flexibility of access control over encrypted data. Ciphertext-Policy Attribute-Based Encryption (CP-ABE) is viewed as one of the most encouraging systems that might be utilized to verify the assurance of the administration. In any case, the utilization of CP-ABE may yield an inescapable security rupture which is known as the abuse of access certification (for example unscrambling rights), due to the inborn "win or bust" decoding highlight of CP-ABE. In this paper, we research the two fundamental instances of access qualification abuse: one is on the semi-believed specialist side, and the other is in favor of cloud client. To moderate the abuse, we propose the main responsible expert and revocable CP-ABE based distributed storage framework with white-box recognizability and reviewing, alluded to as CryptCloud+. We additionally present the security investigation and further exhibit the utility of our framework by means of trial.

DETECTION OF CYBER ATTACKS IN NETWORK USING MACHINE LEARNING TECHNIQUES

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Abstract: In contrast to the past, advancements in computer and communication technologies have resulted in broad and rapid transformations. People, organizations, and governments benefit greatly from the deployment of new ideas; nonetheless, some people are prejudiced against them. For example, major data protection, security of stored information stages, information accessibility, and so on. According to these issues, digital fear-based oppression is one of the most serious issues in today's world. Digital dread, which has caused several concerns for individuals and organizations, has reached a level that could jeopardise open and national security by various groups, for example, criminal organizations, skilled people, and digital activists. In this regard, Intrusion Detection Systems (IDS) were developed to keep a strategic distance from digital assaults. Currently, learning the support vector machine (SVM) computations were used to recognize port sweep efforts based on the dataset. Instead of SVM, we can use other algorithms such as CNN, which will provide greater detection accuracy.
Index Terms: - Intrusion Detection Systems (IDS), Convolutional Neural Networks.

1 Introduction

In comparison to the past, improved PCs and correspondence technologies have contributed to significant and pushing improvements. Whether or not new technology is destroyed, they provide enormous benefits to individuals, businesses, and governments. For example, the safety of critical data, the security of revealed data phases, information accessibility, and so on. Depending on the answers to these questions, digital fear-based tyranny is currently one of the most pressing challenges. Through multiple gatherings, such as criminal alliances, professional individuals, and digital activists, digital terror, which has presented many issues for people and organizations, has reached a level that could jeopardize access and security for the country. We live in the network and network technology era. The introduction of new technologies has altered people's lifestyles.

For example, social networking, business, entertainment, and education.

An attack is described as any activity that compromises a system's availability, confidentiality, or integrity.

1.Availability:- Make sure that the system worked promptly and services is not denied to authorized users. **2.Confidentality**:- It means only authorized individual can view sensitive or classified information and Unauthorized individual should not have access to confidential information.

3.Integrity:- It means the changes made to the data are done by only authorized engineers and Corruption of data basically is failure to maintain data integrity.

The attacks are mainly classified into four types:

1. DOS (Denial of service)
2. Probe
3. R2L (Remote to local)
4. U2R (User to root)

2. Literature survey

"Harbour scanning and defence against them," 2.1 R. SANS Institute, Christopher, 2001. - 2001. Port scanning is one of the most frequent tactics used by attackers to locate network resources. All systems linked to the LAN or the Internet via modem use common or unknown port services. Through port scanning, the attacker will discover the following information about the target devices: which services are used by users, support for anonymous logins, and authentication of certain network services. The port is scanned by sending a message to each port one at a time. The reaction form specifies whether or not the port is being used, and additional vulnerabilities can be tested. Port scanners are essential for network security professionals since the target.

J. A. Staniford, J. A. Hoagland. - Staniford. M. McAlerney, "Practical Automated Port Detection," Computer Security Journal, Vol. 10, 1-2, 118-24, 2002. Portscanning is a popular and critical procedure. It is frequently used by software attackers to categories hostile hosts or networks. This makes it possible for system administrators and other network advocates to classify port scans for more serious threats. Network defenders also use their own networks to identify

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Attribute-Based Storage in the Cloud Enables Secure Deduplication of Encrypted Data

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ABSTRACT_ Cloud is an important source of data storage that can be maintained, managed and backed up via remotely anytime. These cloud services not only provide easy access but also protects user's data to a greater extent from the third party. Due to rise of 'Big Data', Cloud computing has become one of the most significant and essential rising application platforms to solve the expanding of data exchange. Cloud networks are not so secure, to protect data from exposure, users need to encrypt their data before sharing it to other users. So, to achieve this few terms Attribute-based encryption (ABE) has been widely used in cloud computing where data providers outsource data in encrypted format to cloud and can share the encrypted data with different users possessing specific attributes which will indeed get decrypted using security measures. It allows a user with limited computational resources to outsource their large data processing workloads to the cloud, and economically enjoy the better power, computational bandwidth, storage, and even appropriate software that can be shared in a pay|per|use manner. To the other side, the outsourced computation workloads often contain highly-confidential and sensitive data, such as the proprietary research data, business statistics, or personally identifiable information, university student data records, stock market data etc. To combat against unauthorized data leakage and exposure, this sensitive and confidential data have to be encrypted before outsourcing so as to provide end-to-end data confidentiality assurance in the cloud and beyond that. However, ordinary data encryption techniques, in essence, prevent the cloud from performing any meaningful operation of the underlying ciphertext policy, making the computation over encrypted data a very hard problem for the system. The proposed system achieves scalability due to its hierarchical structure as well as efficiency and easiness of data flow in cloud computing.

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A Fast Neighbour Search Algorithm Used To Outsourced Encrypted Medical Images

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ABSTRACT:
Medical imaging is critical for medical diagnosis, and the delicate nature of medical images needs stringent security and privacy safeguards. Medical photos should be secured before being outsourced in a cloud-based medical system for the Healthcare Industry. However, at the moment, running queries over encrypted data without first performing the decryption step is difficult and impractical..
We present a secure and efficient approach for determining the precise nearest neighbour over encrypted medical photos in the project. Instead of measuring the Euclidean distance, we reject candidates by computing the lower bound of the Euclidean distance, which is connected to the data's mean and standard deviation. In contrast to most previous systems, ours can determine the precise nearest neighbour rather than an approximation. We then assess our proposed method to see if it is useful.

1.INTRODUCTION

CLOUD computing is becoming a norm in our society, and in such a deployment, the data owner can outsource databases and management functionalities to the cloud server. The latter stores the databases and supplies access mechanisms to query and manage the outsourced database. This allows data owners to reduce data management expenses and improve quality of service. However, the cloud may not be fully trusted because it may leak sensitive information to unauthorized entities (e.g., compromised) or foreign government agencies. The rapid evolution of cloud computing is revolutionizing e-Health and the whole Industry 4.0 in the field of healthcare. The cloud-based electronic healthcare system is one popular application for Healthcare Industry 4.0. A well-designe electronic healthcare system can obviously improve the quality of access and experience of healthcare users. In recent years

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A NOVEL APPROACH FOR EFFICIENT ENCRYPTION SCHEME IN CLOUD USING ABE ALGORITHM

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Abstract— The proposed system, the system put forward a CP-ABE with shared decryption (CP-ABE-SD) scheme to address the above problem. Besides the authorized user, multiple delegated users can also collaborate to recover the message in our solution. At the same time, we can verify the correctness of the decrypted results. To reduce the computation cost for encryption and decryption and save storage costs, an integrated access tree is used in our scheme as that in the scheme. CLOUD storage is a new storage technology based on network and cloud computing, which provides "unlimited" storage resources for data users. Users can easily access the data stored in the cloud from anywhere in the world. More personal and corporate data are being stored on cloud storage servers. These businesses and individuals can significantly reduce the cost of data storage and management by storing their data on the remote cloud storage servers. However, the cloud service provider, such as Google Cloud, IBM Cloud, and Microsoft Cloud, may be curious or profit-driven to leak users' sensitive data. In addition, these data stored on remote cloud storage servers may be attacked, modified, and disclosed by hackers. Therefore, users tend to encrypt their files before storing these files on an untrusted cloud storage server. In order to ensure the correctness of the files, some remote data integrity checking schemes were proposed.

INTRODUCTION

Cipher text-policy attribute-based encryption (CP-ABE) has been a preferred encryption technology to solve the challenging problem of secure data sharing in cloud computing. The shared data files generally have the characteristic of multilevel hierarchy, particularly in the area of healthcare and the military. However, the hierarchy structure of shared files has not been explored in CP-ABE. In this paper, an efficient file hierarchy attribute-based encryption scheme is proposed in cloud computing. The layered access structures are integrated into a single access structure, and then, the hierarchical files are encrypted with the integrated access Structure. The cipher text components related to attributes could be shared by the files. Therefore, both cipher text storage and

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A NOVEL APPROACH FOR KEYWORD SEARCH OVER ENCRYPTED CLOUD DATA USING ABE ALGORITHM

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ABSTRACT:

He problem of keyword search with access control over encrypted data in cloud computing which enables Keyword Search with Access Control over encrypted data. Leveraging Ciphertext-Policy Attribute-Based Encryption (CP-ABE), the Ciphertext-Policy Attribute-Based Keyword Search (CP-ABKS) scheme can achieve keyword-based retrieval and fine-grained access control simultaneously. However, the single attribute authority in existing CP-ABKS schemes is tasked with costly user certificate verification and secret key distribution. In addition, this results in a single-point performance bottleneck in distributed cloud systems. Thus, in this paper, we present a secure Multi-authority CP-ABKS (MABKS) system to address such limitations and minimize the computation and storage burden on resource-limited devices in cloud systems. In addition, the MABKS system is extended to support malicious attribute authority tracing and attribute update. Our rigorous security analysis shows that the MABKS system is selectively secure in both selective-matrix and selective-attribute models. Our experimental results using real-world datasets demonstrate the efficiency and utility of the MABKS system in practical applications.

INTRODUCTION

Searchable Encryption (SE) is an important technique to guarantee data security and usability in the cloud at the same time. Cloud computing is the use of computing resources (hardware and software) that are delivered as a service over a network (typically the Internet). The name comes from the common use of a cloud-shaped symbol as an abstraction for the complex infrastructure it contains in system diagrams.

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Enabling Secure and Space-Efficient Metadata Management for Encrypted Deduplication

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ABSTRACT_ Scrambled deduplication consolidates encryption and deduplication in a consistent manner to give secrecy certifications to the actual information in deduplicated capacity, yet it causes significant metadata stockpiling above because of the extra stockpiling of keys. We present another encoded deduplication capacity framework called Metadedup, which smothers metadata capacity by likewise applying deduplication to metadata. Its thought expands on indirection, which adds one more degree of metadata pieces that record metadata data. We find that metadata pieces are profoundly repetitive in genuine jobs and subsequently can be successfully deduplicated. Using a distributed key management strategy, we further extend Metadedup to incorporate multiple servers to provide fault-tolerant storage and security guarantees. We widely assess Metadedup from execution and capacity productivity viewpoints. For real-world backup workloads, we demonstrate that Metadedup saves metadata storage by up to 93.94% and achieves high file write and restore throughput.

1.INTRODUCTION

In today's primary [31] and backup [26], [39], and [42] storage systems, CHUNK-BASED deduplication is frequently used to save a lot of space. It stores just a solitary actual duplicate of copy pieces, while referring to all copy lumps to the actual duplicate by little size references. Deduplication has been shown to effectively reduce primary storage's storage space by 50% [31] and backup storage's storage space by up to 98 percent [39]. This spurs the wide organization of deduplication in different business distributed storage administrations (e.g., Dropbox, Google Drive, Bitcasa, Mozy, and Memopal) to diminish significant capacity costs [18]. To give classification ensures, scrambled deduplication [7], [8] adds an encryption layer to deduplication, to such an extent that each piece, prior to being composed to deduplicated capacity, is deterministically encoded through symmetric-key encryption by a key got from

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USED CARS PRICE PREDICTION USING MACHINE LEARNING TECHNIQUES

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Abstract— in this paper discuss various algorithms and the required dataset that were implemented to build this module. Cars of a particular make, model, year, and set of features start out with a price set by the manufacturer. As they age and are resold as used, they are subject to supply and demand pricing for their particular set of features, in addition to their unique history. The more this sets them apart from comparable cars, the harder they become to evaluate with traditional methods. Using Machine L earning algorithms to better utilize data on all the less common features of a car can more accurately assess the value of a vehicle. This study compares the performance of Linear Regression, Ridge Regression, Lasso Regression, and Random Forest Regression ML algorithms in predicting the price of used cars. An important qualification of a price prediction tool is that depreciation can be represented to better utilize past data for current price prediction. The study has been conducted with a large public dataset of used cars. The results show that Random Forest Regression demonstrates the highest price prediction performance e across all metrics used. It was also able to represent average depreciation much more closely than the other algorithms, at 13.7% predicted annual geometric depreciation for the dataset independent of vehicle age.

INTRODUCTION

The world is growing day by day and also expectations of every people are also growing up. Out of all the expectation one of them is to buy a car. But all are not able to buy always a new car, so they will buy used one. But new person don't know about the market price for his or her dream car for old one. That is where we have need a platform which helps new people for car price prediction. The goal of this research is to create machine learning models that can properly forecast the price of a used car based on its attributes so that buyers can make educated decisions. On a dataset

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AN EXPLORATORY DATA ANALYSIS OF PREDICTING WALMART SALES USING MACHINE LEARNING

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Abstract— This paper explores the performance of a subset of Walmart stores and forecasts future weekly sales for these stores based on several models including linear and lasso re-gression, random forest, and gradient boosting. An exploratory data analysis has been performed on the dataset to explore the effects of different factors like holidays, fuel price, and temperature on Walmart's weekly sales. Additionally, a dashboard high-lighting information about predicted sales for each of the stores and departments has been created in Power BI and provides an overview of the overall predicted sales.

Through the analysis, it was observed that the gradient boosting model provided the most accurate sales predictions and slight relationships were observed between factors like store size, holidays, unemployment, and weekly sales. Through the implementation of interaction effects, as part of the linear models, relationship between a combi-nation of variables like temperature, CPI, and unemployment was observed and had a direct impact on the sales for Walmart stores.

INTRODUCTION

The 21st century has seen an outburst of data that is being generated as a result of the continuous use of growing technology. Retail giants like Walmart consider this data as their biggest asset as this helps them predict future sales and customers and helps them lay out plans to generate profits and compete with other organizations. Walmart is an American multinational retail corporation that

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NOVEL APPROACH TO IDENTIFYING CHF IN PCG RECORDINGS USING MACHINE LEARNING AND END-TO-END DEEP LEARNING

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Abstract— Chronic heart failure (CHF) is a chronic, progressive condition underscored by the heart's inability to supply enough perfusion to target tissues and organs at the physiological filling pressures to meet their metabolic demands. Chronic heart failure (CHF) affects over 26 million of people worldwide, and its incidence is increasing by 2% annually. Despite the significant burden that CHF poses and despite the ubiquity of sensors in our lives, methods for automatically detecting CHF are surprisingly scarce, even in the research community. We present a method for CHF detection based on heart sounds. The method combines classic Machine-Learning (ML) and end-to-end Deep Learning (DL). The classic ML learns from expert features, and the DL learns from a spectro-temporal representation of the signal. The method was evaluated on recordings from 947 subjects from six publicly available datasets and one CHF dataset that was collected for this study. Using the same evaluation method as a recent PhysoNet challenge, the proposed method achieved a score of 89.3, which is 9.1 higher than the challenge's baseline method. The method's aggregated accuracy is 92.9% (error of 7.1%); while the experimental results are not directly comparable, this error rate is relatively close to the percentage of recordings labeled as ''unknown'' by experts (9.7%). Finally, we identified 15 expert features that are useful for building ML models to differentiate between CHF phases (i.e., in the decompensated phase during hospitalization and in the recompensated phase) with an accuracy of 93.2%. The proposed method shows promising results

DETECTING IMPERSONATORS IN EXAMINATION HALL USING AI

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ABSTRACT_ In order to establish a better system for conducting exams, which can aid in lowering malpractice occurring in testing facilities, it is critical to identify impersonators in examination halls. 56 JEE candidates who may be impersonators have reportedly been identified by a national testing organisation, according to the most recent news sources. This issue needs to be resolved effectively, yet with fewer resources. The development of machine learning and AI technology has made it simple to resolve this issue. In this project, we're creating an AI system that uses student photos, names, and hall ticket numbers to pre-train the KDTree algorithm, then saves the model. Every time a student enters the classroom, they should turn to face the camera. Once the class is full, the video file containing the students' names and hall ticket numbers is stored. Each face in the video will include the user's name and hall ticket number. Administrators can review and track impersonators if they discover any unusual user tags on their faces.

1.INTRODUCTION

Any factor that threatens the system's safe operation and achievement of its goal of protecting confidentiality, authenticity, and other essential features is a threat. In today's rapidly expanding educational environment, an examination is an essential asset. We need to understand the system's nature and the setting in which it is installed in order to evaluate the threats. An investigation has determined that collusion poses the greatest threat. The majority of threats are motivated by candidates cheating in order to obtain assistance during the exam and improve their chances of passing it against their competitors. When a candidate invites a third party to impersonate or assist the candidate in the examination, they are engaging in collusion. Biometric authentication and manual credential verification by the invigilator are currently

PREGBOT A SYSTEM BASED ON DL AND NLP FOR SUPPORTING WOMEN AND FAMILIES DURING PREGNANCY

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Abstract: With a significant paradigm change affecting diagnostic procedures, medication research, health analytics, therapies, and much more, artificial intelligence is revolutionizing healthcare. This study primarily focuses on utilising AI-based Pregbot systems.utilising natural language processing and machine learning algorithms, to recognise and address the needs of patients and their families. We specifically discuss an application scenario for an AI-Pregbot that supports expectant moms, mothers, and families with small children by providing them with guidance and instructions in pertinent circumstances.

Index Terms: - AI-based Pregbot, Health Analytics

1 Introduction

Introduction Through an explanation of what Pregbots are, what they can do, and how to create them, this work provides a general introduction to them. There is no need for prior domain-specific knowledge. Pregbots have recently attracted a lot of media attention and investments from various players in the business, as of this writing. However, not many potential users are aware of Pregbots' existence or the circumstances in which they might be of use. Developers are equally ignorant of the subject. Although the phrase "Pregbot" is frequently used in the media, its exact meaning is often unclear. By answering the questions of what Pregbots are, what advantages they have, and how to make them, the knowledge gap can be closed. The core definition of the term "Pregbot" can be examined, along with its past and present uses, to provide a suitable definition of "Pregbots." Pregbot use cases can be found in already released goods. To discover new possible uses for Pregbots, market trends and media and technological characteristics might be examined.

Making a real Pregbot and utilising it to demonstrate the fundamental ideas of the development process is the greatest way to explain development. The three basic questions guide the structure of this work. To establish a definition and knowledge of what Pregbots are, terminology is first defined, and then uses are investigated. After then, use cases for Pregbots are found by compiling examples already in use as well as by exploring potential applications in the future by examining characteristics of pertinent technology.

A case study for the creation of a Pregbot is presented in the second half of the book. The example provided walks through the process of building user interactions for a Pregbot and also explains architectural and technological decisions, giving other programmers a foundation upon which to build when making new Pregbots in the future.

2. Literature survey

TITLE 1: **A Pregbot for Perinatal Women's and Partners' Obstetric and Mental Health Care: Development and Usability Evaluation Study**

AUTHOR: Kyungmi Chung , Orcid Image ; Hee Young Cho Orcid Image ; Jin Young Park , Orcid Image The objectives of this study are to develop and evaluate a user-friendly question-and-answer (Q&A) knowledge database–based Pregbot (Dr. Joy) for perinatal women's and their partners' obstetric and mental health care by applying a text-mining technique and implementing contextual usability testing (UT), respectively, thus determining whether this medical Pregbot built on mobile instant messenger (KakaoTalk) can provide its male and female users with good user experience. Methods: Two men aged 38 and 40 years and 13 women aged 27 to 43 years in pregnancy preparation or different pregnancy stages were enrolled. All participants completed the 7-day-long UT, during which they were given the daily tasks of asking Dr. Joy at least 3 questions at any time and place and then giving the Pregbot either positive or negative feedback with emoji, using at least one feature of the Pregbot, and finally, sending a facilitator all screenshots for the history of the day's use via KakaoTalk before midnight. One day after the UT completion, all participants were asked to fill out a questionnaire on the evaluation of usability, perceived benefits and risks, intention to seek and share health information on the Pregbot, and strengths and weaknesses of its use, as well as demographic characteristics.

TITLE 2: **Artificial Intelligence in Pregnancy: A Scoping Review**

AUTHOR M. C. Romero-Ternero ;Andreea Madalina Oprescu ;Gloria Miró Amarante Artificial Intelligence has been widely applied to a majority of research areas, including health and medicine. Certain complications or disorders that can appear during pregnancy can endanger the life of both mother and fetus. There is enough scientific literature to support the idea that emotional aspects can be a relevant risk factor in

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Recommendation System for Tourists by using Decision tree algorithm

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Abstract_ Rapid advancements in Internet technology have resulted in everyone having their own mobile phone or laptop to access tourist information. The Tourist Recommended system is critical in assisting people in making decisions about their vacation. When someone visits a location, they will provide feedback after each visit, which will influence the decision-making of new users. To suggest the best hotel, all existing algorithms, such as collaborative or content filtering algorithms, use current user past experience data. If the current user has no previous experience data, these algorithms will fail. We use the C4.5 decision tree algorithm with the feature selection algorithm to solve the above problem. The suggested recommendation system is designed to make recommendations for all other sites worth visiting. This tourist recommendation system will be more useful in recommending destinations for visitors to new places. It prefers the ideal place by evaluating two factors: point of interest and ratings, and depending on the values of each attribute. C4.5, an ID3 extension, was created in [8]. C4.5 was chosen for this study because it attempted to address ID3's major flaws. [9] ID3 For classification, Quinlan's previous C4.5 method can be utilised. C4.5 Decision Tree is part of the Supervised Learning category.

1.INTRODUCTION

Every day, many people visit the e-commerce website to search required information such as well-known touristic locations around the world. People carries personal electronic devices such as mobile phone, laptops etc; are being able to gather information about their surroundings, which is used by the so-called tourist recommendation system to suggest touristic attractions, based on context factors such as location, etc. The statistics shows, Revenue of leading online travel Agencies worldwide 2018. In 2018 year, Booking was the leading travel agency with a yield of approximately 14.53 billion U.S. dollars. TripAdvisor have 37.7 million of visitors. (i.e

Machine Learning Based Food Calorie Identification Using R-CNN

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ABSTRACT: Machine Learning (ML) is a very powerful and important technology in the world today. With the help of ML modules, various appropriate algorithms such as Faster RCNN algorithm, canny edge detection algorithm are applied to the proposed system. This system focuses mainly on the calculation of calories and other nutrients present in food. his is one of the study to discuss the relationship between nutritional ingredients identification in food and inspecting Calories through Machine Learning models to perform the data analysis, the experiments on real life dataset show that our method improves the performance with efficient accuracy Our work is able to identify the Nutrition that we may get effected by lacking of certain nutritional ingredients in our body and recommends the food that can benefit the rehabilitation of those Age Groups. Further processes can be automated quickly, such as the use of nearer R-CNN to perceive for each food and standardization item. Then the volume of individually food is determined by formulas for volume valuation. The proposed estimation method is effective.

Key words: Image segmentation, Machine learning algorithms, Volume measurement, Object recognition, Informatics

1. INTRODUCTION

Practically 20% of deaths worldwide are caused by unnatural diets according to the World Health Organization (WHO). 39% of grown person aged 18 and over were over heavy in 2016 and 13% were obese. Maximum of the world's residents survive in nations where over heavy and fatness kill more people than underweight [1]. The core cause for fatness is the inequity amongst the quantity of caloric consumption and the energy yield. The BMI will increase risk for diseases such as cardiovascular disorders and many more. Persons with over30 kg/m2 of BMI are typically seen for obesity [2]. Calorie is the nutritional energy unit. Because of the hectic life, health is the greatest requirement in the world. The existing calories measurement scheme is flawed in the manual entry of data such as food platter weight, food platter volume etc. To do this, a fully automated calorie measurement system is proposed.

Various ML modules are used in this system to assess the size of foodstuffs. Next, the user clicks on a photo of the food in a possible way (mainly in front, and top). Therefore, the user must click on two photos. Those images are then taken by the machine as input and the portion size and

USING DATA MINING TECHNIQUES TO PREDICT STUDENT PERFORMANCE TO SUPPORT DECISION MAKING IN UNIVERSITY ADMISSION SYSTEM

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Abstract: When choosing applicants for higher education institutions, it is crucial to use an admissions system based on accurate and acceptable admissions criteria. The goal of this project is to determine how data mining techniques can help colleges anticipate applicants' academic achievement in higher education.The suggested methodology was validated using a data set of 2,039 students enrolled in a Computer Science and Information College of a Saudi institution from 2016 to 2019. The findings show that based on certain pre-admission parameters (high school grade average, scholastic achievement admission test score, and general aptitude test score), candidates' early university performance may be predicted before admission. The findings also demonstrate that the pre-admission factor that most successfully predicts future student achievement is the Scholastic Achievement Admission Test Score. Therefore, admissions systems ought to give this score more weight. Additionally, we discovered that the Artificial Neural Network techniques outperformed the Decision Trees, Support Vector Machines, and Naive Bayes classification strategies with an accuracy rate above 79%.

Index Terms: - Scholastic Achievement Admission Test Score, Pre-admission Parameters.

1 Introduction

Nowadays, the admissions process is difficult for institutions, particularly those that focus on STEM subjects such as computer science and engineering. Universities should employ objective admissions criteria to identify individuals who would be successful in their programmes. The findings suggest that early academic achievement at university can be predicted using specific factors prior to admission. The data also indicate that a student's performance on the Scholastic Proficiency Admission Test is the best predictor of admission. As a result, this score should be given more weight in selection procedures. In this research, we use SVM and the Ann algorithm to forecast admissions. In the current climate, students frequently struggle to find a suitable institution to pursue higher education depending on their profile. Some advisory administrations and internet apps promote institutions, but they charge exorbitant consulting fees, and the online apps are inaccurate. As a result, the goal of this study is to create a model that accurately predicts the percentage of chances of admission to university. This algorithm also analyses scores vs likelihood of prediction based on historical data, so students can determine whether their profile is appropriate or not. The linear regression and random forest methods are used in the suggested model. A person's education is extremely important in their life. When it comes to education, students frequently ask questions about the courses, colleges, job chances, costs, and so on. One of their primary concerns is getting into their preferred institution. Students frequently opt to pursue their study at universities with international renown. When it comes to international students, the majority of them prefer to study in the United States of America. With the majority of the world's most prestigious universities, a diverse selection of courses in every field, a highly approved education system and teaching, subsidies for students, the best employment market, and many other benefits, it is a dream location for international students. We will be developing a Student Admission Predictor (SAP) system that will assist students in predicting their chances of admission to a specific university for which they intend to apply based on their profile.

In addition, the algorithm will recommend universities to the student that have a good chance of admitting the student. To construct the system, multiple machine learning classification techniques were examined. Finally, the K Nearest Neighbours and Decision Tree algorithms were chosen as the best fit for the system built. In addition, we will create a simple user interface that will allow users to input data related to student profiles and receive the anticipated result for the application based on the profile as output. This research will eventually assist students in reducing the extra time and money they have to spend at education consulting firms. It will also assist students in limiting their number of applications to a minimal number by recommending colleges where they have the best chance of gaining admission, saving them money on application fees.

2. Literature survey

2.1 Introduction

This section gives a review of previous research on forecasting the likelihood of students enrolling in universities. Several

Yolo-based Intelligent Traffic Light Control

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ABSTRACT_ With an increasing population and automobiles in cities, traffic congestion is becoming one of the most pressing issues. Traffic congestion not only adds time and stress to drivers, but it also increases fuel consumption and air pollution. Although it appears to be present everywhere, megacities are the most affected. Because of this, it is necessary to calculate road traffic density in real-time for better signal control and effective traffic management. One of the critical factors influencing traffic flow is the traffic controller. As a result, there is an increased need for traffic control optimisation to better accommodate this rising demand. The paper uses traffic cameras and YOLO object detection algorithms to estimate traffic density across all lanes and then adjust red and green signal timing.

1.INTRODUCTION

Numerous road networks are experiencing issues with the capacity drop of roads and the corresponding Level of Service as a result of the rising number of vehicles in urban areas. Many traffic-related issues happen in light of traffic signal frameworks on crossing points that utilization fixed signal clocks. They rehash a similar stage succession and its term without any changes. Expanded interest for street limit additionally builds the requirement for new answers for traffic light that can be tracked down in the field of Astute Vehicle Frameworks. Allow us to take the contextual analysis of Mumbai and Bangalore. Traffic

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MULTIPLE OBJECT DETECTION IN IMAGES USING CNN AND DPM

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Abstract— Object detection is an essential task in computer vision and image processing. It has many applications in various domains like medical diagnosis, civil military, video surveillance, security, etc. With the development of intelligent device and social media, the bulk of data on Internet has grown with high speed. There are so many important aspect in image processing, object detection is one of the international demanded research field. Multiple object detection is an important concept in object detection. In object detection extracting the features and handling the occlusion are two most important components. A Convolution Neural Network (CNN) has achieved great success in extracting the region based features which may used for extracting multiple regions from the images and Deformable Part Based Model (DPM) improve the ability for handling the occlusion. Occlusion handling is nothing but when multiple objects are near to each other that time some objects are not detected so this drawback will be handled by DPM. Existing method not performing well in the aspect of detecting multiple objects. In this paper CNN and DPM are to be integrated to detect multiple objects. By combining these two models we are able to notice every single object with high accuracy.

Keywords—CNN, Multiple object detection.

1. INTRODUCTION

Object detection used as an integral part, such as semantic segmentation, instance segmentation, pose estimation, suspicious activity detection, etc. The first stage in the pipeline is to detect an object. The survey begins with significant highlights of deep learning for object detection. It provides a comprehensive study on object representation; Convolution Neural Network (CNN) and different Deep Convolution Neural Network architecture. It presents a concise review of renowned datasets and definitive measurement metrics, forming the primitive baseline to evaluate the detection framework. Then studies in

Price Negotiating Chatbot on E-commerce website for betterment

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ABSTRACT_ In most business deals, negotiation is an essential step. To bargain is to negotiate. It's an essential part of any transaction, from a major commercial agreement to buying produce from a street seller. The Growth of E-Commerce The pricing of the goods can be negotiated with the aid of the chatbot project we are working on. All web-based apps prioritise happy customers above all else, and chatbots enable those customers have their problems fixed fast without wasting time sending emails and waiting for a response. By serving as a go-between for the business and the customer, chatbots simplify the process of resolving any number of problems a user might have. Problems in communication and understanding arise during negotiations, and only time and discussion can lead to a satisfactory resolution. A chatbot can help a consumer find exactly what they're looking for when they're having trouble narrowing down their search results.

1. INTRODUCTION

Online shopping and business have exploded in popularity over the past few years. The number of e-commerce platforms and online retailers is growing. Many people now make the vast majority of their regular purchases online instead than at brick-and-mortar establishments. There will be significant repercussions for the brick-and-mortar retail sector as a result of this change to online shopping. Not everyone enjoys shopping in a crowded store, and other individuals simply don't have the time or energy to make the trip. The alternative is an online shopping system, which might take the form of a virtual store accessible over the Internet, where shoppers can peruse inventory and make purchases. It's possible that difficulties in communication and deductive reasoning both contribute to the negotiation process. To negotiate is to engage in a process of giving and taking that has the greatest potential to fulfil the needs of all parties involved. Everyone enjoys the process of negotiation, therefore it takes up a lot of our time. People see it as a trustworthy way to find a good deal

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Prediction Of Flight For Users By Using Different ML Techniques

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Abstract_ People who frequently travel by plane will be more knowledgeable about the best discounts and the ideal time to purchase a ticket. Many airline companies adjust their costs based on the seasons or the length of the flight.When individuals travel more, the price will rise. Estimating the highest prices of airline data for the route with features such as Duration, Source, Destination, Arrival, and Departure. The features are drawn from a selected dataset, and in this research, we employed machine learning techniques and regression algorithms to forecast the price of an airline ticket, which varies over time. We used decision tree and random forest algorithms, as well as KNN, to anticipate flight prices for customers. Random forest has the highest accuracy in predicting flight prices.

Keywords: Feature selection, Airfare price, Machine learning, Pricing Models, Prediction Model, Random Forest.

1. INTRODUCTION

Perfect time for purchasing plane ticket by the passenger's view is difficult since passengers get very less information of future business price rates. Different models figure out future business price on plane and categorise the best time to obtain flight ticket. Airlines use different strategies of pricing for their tickets, later taking the decision on price because order shows higher value for the approximation models. The causes behind the difficult system is each Planes has limited number of seats to be filed, so airlines must regulate demand. Suppose when demand is expected to increase capacity, the airline may increase prices, to decrease the rate at which seats fill. Also, seating arrangements in flight which is not occupied shows the loss of the amount invested for the business airline companies and making them purchase the ticket to fill the seats for any price this would be the best idea to get profit in loss too. Passengers should be compatible with the airline companies to get adjusted for the increase and decrease of the price. Passengers or customers should make their own planning to get the best offers available on different

IDENTIFICATION AND DETECTION OF HAZARDS USING A MACHINE LEARNING APPROACH

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ABSTRACT_Surfing the internet has become an essential part of our daily lives. As a result, in order to capture the interest of users, different browser suppliers compete to include new functionality and advanced capabilities, which provide a source of attacks for intruders and put websites at risk. However, existing approaches are insufficient to protect surfers, who require a quick and precise model capable of distinguishing between benign and dangerous webpages. Create a new classification system in this project to assess and detect harmful web pages using machine learning classifiers such as random forest and support vector machine. Logistic regression, Naive Bayes, and The classifiers are trained to anticipate malicious web pages using some particular URL (Uniform Resource Locator) based on extracated characteristics. The experimental findings reveal that the random forest classifier outperforms other machine learning classifiers in terms of accuracy (93%).

1.INTRODUCTION

More and more services like internet banking, e-commerce, social networking, shopping, bill payment, and e-learning have emerged as a result of the rapid growth of the web. are accessible to users, who use browsers or web applications to browse the internet. because browsers now offer a variety of advanced functions and features. Because naive users are unaware of the various malware, intruders can easily trap them by clicking on malicious websites. This enables intruders to identify web page vulnerabilities and inject payloads to gain remote access to the victim's website. The use of the internet has become an essential part of our daily lives. As a result, various browser manufacturers compete to implement new features and advanced functionality in an effort to pique users' interest. These features become the target of intrusions and pose a threat to websites. In light of this, it is crucial to accurately identify web pages in an expanding web

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A Genetic Algorithm-based Driving Decision Strategy (DDS) for an autonomous vehicle

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Abstract_ A modern self-sustaining vehicle determines its driving method solely by considering exterior factors (Pedestrians, street conditions, etc.) without considering the vehicle's interior situation. To address the aforementioned issues, the author proposed a new strategy in this paper titled "A Driving Decision Strategy (DDS) Based on Machine Learning for an Autonomous Vehicle." Analysis of both external and internal factors determines the optimal strategy for an autonomous vehicle. (consumable conditions, RPM levels etc.). To implement this project, the author introduced the DDS (Driving Decision Strategy) algorithm, which is based on a genetic algorithm to select optimal gene values that aid in making better decisions or predictions. DDS algorithm obtains sensor input and then passes it to genetic algorithm to select optimal value, resulting in faster and more efficient prediction.The performance of the proposed DDS with genetic algorithm is compared to that of existing machine learning algorithms such as Random Forest and MLP. (multilayer perceptron algorithm.). Propose DDS outperforms random forest and MLP in prediction accuracy..

1.INTRODUCTION

Technologies for advanced autonomous vehicles are being developed by businesses all over the world, and they are currently in the fourth stage of development. There are three levels to the self-driving car's operating principle: control, judgment, and recognition Vehicles are outfitted with a variety of sensors, including GPS, cameras, and radar, to aid in the recognition process. The judgment step decides on a driving strategy based on this information. After the driving environment is found, it is looked at, and the right driving plans and goals are made. After the control step is finished, the vehicle can drive itself. An autonomous vehicle repeats on its own the actions of recognition, judgment, and control in order to reach its destination.

As their performance improves, autonomous vehicles are becoming better at recognizing data. An increase in the number of these sensors may cause the vehicle's electrical system to become overloaded. Self-driving vehicle sensors collect data that is processed by in-vehicle computers. As the amount of computed data increases, the speed of judgment and control decreases as a result of overload. The vehicle's stability may be in jeopardy as a result of these issues. For the purpose of forestalling sensor over-burden, a

GEO TRACKING OF WASTE AND TRIGGERING ALERTS AND MAPPING AREAS USING DEEP LERANING TECHNOLOGY

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ABSTRACT

The nation's economy is negatively impacted by littering, which also has a significant detrimental influence on the environment. Littered rubbish is not removed because there is no effective mechanism for tracking and detecting waste. The conventional method of trash management involves the regular collection of rubbish by the designated parties, such as municipal corporation vehicles. The project's goal is to offer a complete waste management solution and contribute to the creation of a cleaner, more sustainable environment. In the suggested system, the user can use a mobile camera to record a video of waste and upload it together with geographical information. If waste is present in the video, Yolo waste may be identified using a deep learning algorithm, which can also produce an audio alert. Utilising the data The administrator contacts the closest garbage collector to clean the rubbish based on the user's input. The initiative intends to offer a complete waste management solution and aid in the creation of a cleaner, more sustainable environment. The suggested system requires little human interaction and is cost-effective, user-friendly, and small.

Keywords: Yolo, Waste Detection

1 INTRODUCTION

In the majority of cities, villages, towns, and other public spaces, cleaners manually dispose of trash [1]. One problem with hand cleaning is that trash is frequently dispersed over the roadway and might be challenging to locate. Due to cleaners' lack of awareness of the location of the waste, it is occasionally left outside for several days, endangering both the environment and human health. The accumulation of rubbish in many regions of the world is an issue that is made worse by the exponential growth of the human population [2]. Incorrect rubbish classification is a further problem with waste removal. If rubbish is correctly sorted, the majority of it can be recycled, creating a secure setting for all. Utilising cutting-edge technology, the issues associated with rubbish removal can be reduced. Mobile applications, for instance, can be used to construct an effective real-time pre- and post-waste management system [3,4]. Using deep learning methods, we address issues with waste management in this paper. Our technique effectively locates waste piles, sorts the waste into categories based on its biodegradability and recyclable content, and makes segregated disposal easier. The issue of volumetric waste analysis is something else we cover. Volumetric estimation of litter piles can be used for a number of things, like determining a city's or region's waste generation per square area, showing the trends of waste generation in particular areas, like the bayside or cityside, and determining whether an object that has been classified as waste actually is waste. or an inanimate item. With the help of a set of Yolo Framework in Convolutional Neural Network (cnn)-based object detectors and classifiers, smart mobile device users can identify waste piles and alert cleaners based on their measurements of six types of trash (plastic, metal, glass, paper, cardboard, and food waste) [5].The amount of waste produced by homes, hospitals, stores, and markets is growing along with the population of our nation. There are numerous health and environmental issues that can result from improper waste management, therefore it's critical to develop solutions. Our project intends to establish a project that allows users to post recordings of rubbish that has been left on public property in order to address this issue. coupled with location information, on city streets and elsewhere. We're utilising the cutting-edge object detection algorithm YOLO (You Only Look Once) to automatically identify and extract waste photos from these videos.

In order to estimate bounding boxes and class probabilities for each grid cell, YOLO divides the input image into a grid. The algorithm's quickness and effectiveness make it ideal for real-time applications like trash identification. Once the rubbish has been located, our system will send an audio alert to the waste management crew informing them of the location information (in the form of the video the user uploaded latitude and longitude values). This will make it possible for waste management

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CLASSIFICATION OF WINE QUALITY PREDICTION WITH RANDOM FOREST

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***Abstract*— Wine classification is a difficult task since taste is the least understood of the human senses. A good wine quality prediction can be very useful in the certification phase, since currently the sensory analysis is performed by human tasters, being clearly a subjective approach. An automatic predictive system can be integrated into a decision support system, helping the speed and quality of the performance. Furthermore, a feature selection process can help to analyze the highly relevant to predict the wine quality, since in the production process some variables can be controlled, this information can be used to improve the wine quality. Classification models used here are Random Forest Classifier.**

INTRODUCTION

The wine quality dataset is publically available on the UCI machine learning repository (Cortez et al., 2009). The dataset has two files red wine and white wine variants of the Portuguese "Vinho Verde" wine. It contains a large collection of datasets that have been used for the machine learning community. The red wine dataset contains 1599 instances and the white wine dataset contains 4898 instances. Both files contain 11 input features and 1 output feature. Input features are based on the physicochemical tests and output variable based on sensory data is scaled in 11 quality classes from 0 to 10 (0-very bad to 10-very good).Feature selection is the popular data preprocessing step for generally (Wolf and Shashua, 2005). To build the model it selects the subset of relevant features. According to the weighted of the relevance of the features, and with relatively low weighting features will be removed. This process will simplify the model and reduce the training time, and increase the performance of the model (Panday et al., 2018). We pay attention to feature selection is also the study direction. To evaluate our model, accuracy, precision, recall, and f1 score are good indicators to evaluate the performance of the model. The report is divided into 12 sections, including this one. In Section 2 we discuss the Literature Survey. In Section 6we formulate our research question and hypothesis. Section 3 describes the methodologies. Section 9 discusses the experimental design. In Section 10 results and discussion of the whole work. In Section 12 we discuss the conclusions and future work.

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USING MACHINE LEARNING FOR PARTICLE IDENTIFICATION IN FORENSIC SCANNER

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Abstract— image manipulation has become very easy. Hence, developing forensic tools to determine the origin or verify the authenticity of a digital image is important. Due to the increasing availability and functionality of image editing tools, many forensic techniques such as digital image authentication, source identification and tamper detection are important for forensic image analysis. In this paper, we describe a machine learning based system to address the forensic analysis of scanner devices. Our experimental results show that high accuracy can be achieved for source scanner identification. The proposed system can also generate a reliability map that indicates the manipulated regions in an scanned image.

INTRODUCTION

Hence, developing forensic tools to determine the origin or verify the authenticity of a digital image is important. These tools provide an indication as to whether an image is modified and the region where the modification has occurred. A number of methods have been developed for digital image forensics. For example, forensic tools have been developed to detect copy-move attacks [1], [2] and splicing attacks [3]. Methods are also able to identify the manipulated region regardless of the manipulation types [4], [5]. Other tools are able to identify the digital image capture device used to acquire the image [6], [7], [8], which can be a first step in many types of image forensics analysis. The capture of "real" digital images (not computer-generated images) can be roughly divided into two categories: digital cameras and scanners.

In this paper, we are interested in forensics analysis of images captured by scanners. Unlike camera images, scanned images usually contain additional features produced in the pre-scanning stage, such as noise patterns or artifacts generated by the devices producing the "hard-copy" image or document. These scannerindependent features increase the difficulty in scanner model identification. Many scanners also use 1D "line" sensors, which are different than the 2D "area" sensors used in cameras. Previous work in scanner classification

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Detection of Android Malware Using Genetic Algorithm based Optimized Feature Selection

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ABSTRACT_Android platform due to open source characteristic and Google backing has the largest global market share. Being the world's most popular operating system, it has drawn the attention of cyber criminals operating particularly through wide distribution of malicious applications. This paper proposes an effectual machine-learning based approach for Android Malware Detection making use of evolutionary Genetic algorithm for discriminatory feature selection. Selected features from Genetic algorithm are used to train machine learning classifiers and their capability in identification of Malware before and after feature selection is compared. The experimentation results validate that Genetic algorithm gives most optimized feature subset helping in reduction of feature dimension to less than half of the original feature-set. Classification accuracy of more than 94% is maintained post feature selection for the machine learning based classifiers, while working on much reduced feature dimension, thereby, having a positive impact on

computational complexity of learning classifiers.

1.INTRODUCTION

Android Apps are uninhibitedly accessible on Google Playstore, the official Android application store just as outsider application stores for clients to download. Because of its open source nature and fame, malware scholars are progressively zeroing in on creating malignant applications for Android working framework. Despite different endeavors by Google Playstore to ensure against pernicious applications, they actually discover their approach to mass market and cause mischief to clients by abusing individual data identified with their telephone directory, mail accounts, GPS area data and others for abuse by outsiders or, more than likely assume responsibility for the telephones distantly. Subsequently, there is have to

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ANALYSIS AND PREDICTION OF INDUSTRIAL ACCIDENTS USING MACHINE LEARNING

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***Abstract*—** In this research, a conceptual system is made that utilizes low cost storage and process data in less time. It additionally utilizes Machine Learning, NLP and Random Forest calculation so as to comprehend and foresee mishaps in Industrial condition. The industrial data is procured from one of the largest industries in Brazil and the world which records the industrial accidents that took place in every nation. The information is investigated and prepared with Machine Learning algorithm so as to comprehend the reasons for such incidents and how the expectation of future accidents can be done. Subsequently, the framework can think about an assortment of parameters and decide future happenings with exactness.

INTRODUCTION

In today's environment, there is a huge development in the measure of information being created from various sources. With this tremendous measure of information being generated day by day, there is a requirement for the information to be investigated and be managed methodically. There has been an increase in the number of accidents ever since the evolution of such industries. Even with the diverse industrial safety and accident prevention systems available, they haven't been efficient in managing a wide range of parameters and be able to effectively predict them by handling a large amount of data. Moreover, with the existing systems, the cost of planning and storing the data is soaring. Industries have become quite a vital part of today's world that without it, it would be difficult to sustain in the world. Industrial growth and development are significant as it plays a big role in our economy, development of the country as a whole and earns revenue. The requests and needs of

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A NOVEL APPROACH FOR MACHINE LEARNING-BASED DEFECT PREDICTION FOR SOFTWARE

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Abstract— software has become increasingly vital in our daily lives. Software engineering research is centered on defect prediction. Successful software development requires better communication between data mining and software engineering. Software Engineering is a comprehensive domain since it requires a tight communication between system stakeholders and delivering the system to be developed within a determinate time and a limited budget. Delivering the customer requirements include procuring high performance by minimizing the system. Thanks to effective prediction of system defects on the front line of the project life cycle, the project's resources and the effort or the software developers can be allocated more efficiently for system development and quality assurance activities. All in all, the results of ensemble learners category consisting of Random Forests (RF) and Bagging in defect prediction is pretty much its counterparts.

INTRODUCTION

Software defect prediction is a pre-testing technique that estimates where bugs will show up in the code. The purpose of software defect prediction research is to identify potentially flawed parts of a programme before it reaches the testing phase. The primary benefit of these prediction models is that they need more testing time and money. may be directed to the modules most prone to errors. However, only a few mobile app-specific software defect prediction algorithms currently exist. It is common practise to utilise defect prediction algorithms to probe the impact domain in software (clustering, neural networks, statistical methods, and machine learning models). This research aims to examine and compared various ML (machine learning) algorithms for software bug prediction. Developing a software system is an arduous process which contains planning, analysis, design, implementation, testing, integration and maintenance. A software engineer is expected to develop a software system on time and within limited the budget

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Vehicle Accident Detection System Using Deep Learning

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Abstract_Accidents have been a main cause of death in India. More than 80% of accident-related fatalities are caused by the delay in giving assistance to accident victims, not the accident itself. On highways when traffic is light and moving swiftly, an accident victim may be left unattended for an extended period of time. The goal is to create a system that can detect an accident using a live video feed from a CCTV camera positioned on a highway. Each video frame should be processed by a deep learning convolution neural network model that has been trained to differentiate between accident-related and non-accident-related video frames. Convolutional Neural Networks have been shown to be a quick and reliable method for picture classification. CNN-based image classifiers have achieved accuracy levels of over 95% for comparatively smaller datasets and require less preprocessing than other image classifying techniques.

1.INTRODUCTION

The main goal is to incorporate a system that can recognize an accident from video footage captured by a camera. By promptly detecting an accident and immediately notifying the authorities, the system is intended to assist accident victims in need. Utilizing cutting-edge Deep Learning Algorithms that make use of Convolutional Neural Networks (CNNs) to analyze frames taken from the camera's video, the goal is to identify an accident within seconds of its occurrence. We have concentrated on establishing this system on highways where there is less traffic and assistance rarely reaches accident victims in a timely manner. On parkways we can arrangement CCTV camera's put at distance of around 500 meters which go about as a vehicle for observation, on this camera we can set up the proposed framework which takes the recording from the CCTV camera's and runs it on the propsed mishap recognition model to recognize mishaps.

E - ASSESSMENT USING IMAGE PROCESSING IN EXAMS

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Abstract: The use of Multiple Choice Questions (MCQs) to assess a person's knowledge has gradually risen. These tests can be graded manually or using OMR technology. It is difficult to have an OMR machine in real-time under all circumstances, and manual correction is time expensive and error prone. These drawbacks were overcome in our suggested system by applying a digital image processing technique to rectify OMR sheet replies. We're here to process and correct the replies using Open Source Computer Vision Library (Open CV). With the accessible Open CV library, Python is the greatest language for implementing this approach.

Index Terms: - Open Source Computer Vision Library

1 Introduction

Nowadays, there is an increasing demand for digitised paper-based information storage. This issue also affects education, although it does not always receive adequate attention; yet, by utilising modern technology appropriately, many components of the educational process may be made much simpler, easier, faster, more pleasant, and (partially) automatable. Nowadays, there is an increasing demand for digitised paper-based information storage. This issue also affects education, although it does not always receive adequate attention; yet, by utilising modern technology appropriately, many components of the educational process may be made much simpler, easier, faster, more pleasant, and (partially) automatable. Most educational institutions continue to use traditional teaching and examination methods in the majority of their topics. Though digitization of education received some attention in past years, it has only recently begun to gain traction. There are also computer-based assessment methods, although they are not the primary functionality of e-learning systems. As a result, classic examination models are usually employed for disciplines that require this type of assessment. The paper-based examination method will be covered from now on, as it is the primary focus of this article. The term "e-assessment" relates to electronic assessment, as software is utilised to mark exam papers filled out by students after the exam. Multiple choice questions (MCQ) are a type of objective assessment in which respondents are asked to select only right responses from a list of options. When a person must select between many candidates, parties, or policies, the multiple choice format is most commonly employed in educational exams, market research, and elections. In this study, we use image processing to do MCQ correction in a very simple manner. It makes a significant attempt to remove the hurdles to multi-choice assessment correction. In this case, we're using array format to amend an answer sheet that was photocopied and uploaded by the user. The fundamental idea is to get the image and the answer that is shadowed by the user.For image processing, the Python OpenCV library is provided. We use the Django framework in conjunction with Python to achieve the most effective results. The Open CV is a programming function package primarily geared towards real-time computer vision. The subjects listed below are organised to explain how to cope with this strategy.

2. Literature survey

Classifications of related systems The primary classification is based on the main functionalities of the given system as follows:

1. Computer-based examination and assessment systems
2. Computer-based assessment systems

It is trivial that the former set of systems provides a broader answer and even appears to be better and easier to complete the entire process this way, but it is not in every instance for certain, and in most cases it is not even worth it. Though it indicates that the majority of relevant work in the preceding ten years has discussed these types of systems, since these

Cloud Replication Detection Using Data Security

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Abstract : Today, everyone uses a cloud server to store their data because it offers a variety of services that are ideal for users or customers.Cloud servers include Microsoft Azure, Google Cloud Platform, and others.There may occasionally be a storage issue with the cloud while storing user data.We require security for the cloud-stored data.Data should be secure and confidential for hospitals and some private companies.Therefore, we require both storage and security for our cloud-based data.

Client-Side Authorised Deduplication Here, it is suggested to use CP-ABE, which offers cloud Deduplication and security.The proposed system offers data security in an encrypted format.In this system, we encrypted user data uploaded to the cloud with the CP-ABE algorithm using the user's attributes.The deduplication of files in the cloud is also checked.When a file is deduplicated, the server forbids uploading it if it already exists.Deduplication assists in releasing cloud storage

1.INTRODUCTION

CSP can dispose of sometimes utilized data to save space. Due to its low startup costs, low maintenance costs, and universal access to data regardless of location or device, capacity as a service has emerged as a business alternative to local data storage. Regardless of cost investment funds, accessibility, effortlessness of purpose, changing, and sharing, it acts security gambles with like information is at the control of the cloud supplier (CSP). It is possible for it to mislead about information debasement and misfortune as a result of programming or equipment failure. Verify who owns the information stored in distributed storage.

Traditional data trustworthiness cryptographic solutions either require a local copy of the data, which data users (DUs) do not possess, or permit DUs to download the entire data. The first

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SENTIMENT ANALYSIS OF DRUG REVIEWS AND RECOMMENDATION USING MACHINE LEARNING

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Abstract— Clinical blunders are very regular nowadays. In today's digital era healthcare is one among the major core areas of the medical domain. People trying to find suitable health-related information that they are concerned with. The Internet could be a great resource for this kind of data, however you need to take care to avoid getting harmful information. Nowadays, a colossal quantity of clinical information dispersed totally across different websites on the Internet prevents users from finding useful information for their well-being improvement. Many people in the medical community perish because of the widespread sorrow. As a result of the shortage, people started medicating themselves without first consulting a professional, worsening the health crisis. Machine learning has proven useful in many areas, and new research and development in the field of automation has recently increased in pace and scope. The goal of this research is to introduce a drug recommender system that can significantly lessen specialists' workload. In this study, we developed a medicine recommendation system that predicts sentiment based on patient reviews by employing a number of vectorization processes, including Bow, TF-IDF, Word2Vec, and Manual Feature Analysis, and thus aids in the selection of the best drug for a given disease as determined by a number of different classification algorithms. Precision, recall, f1score, accuracy, and area under the curve (AUC) were used to rate the anticipated emotions. The findings demonstrate that the classifier Linear SVC with TF-IDF vectorization achieves the highest accuracy compared to the other models.

INTRODUCTION

The study is based on the fact that the recommended drug should depend upon the patient's capacity. Since the emergence of the corona virus, there has been a dramatic increase in the difficulty with which

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Analysis Of Crime Using Data Mining Techniques

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ABSTRACT_The investigation of crimes relies heavily on data mining. The virtual identifier, pruning strategy, support vector machines, and apriori algorithms are just a few of the many different kinds of algorithms that have been mentioned in prior research papers. Video is to track down connection among record and video. The apriori calculation helps the fluffy affiliation rules calculation and it requires around 600 seconds to distinguish a mail bomb assault. In this exploration paper, we recognized Wrongdoing planning examination in view of Kmeans calculations to improve on this cycle. Wrongdoing Planning is led and Financed by the Workplace of Local area Arranged Policing Administrations (Police). Proof based research helps in dissecting the violations. We ascertain the crime percentage in light of the past information utilizing information mining procedures. In order to resolve the cases, Crime Analysis employs analytical methods in conjunction with quantitative and qualitative data. For public security purposes, the wrongdoing planning is a fundamental exploration region to focus on. We can personality the most often wrongdoing happening zones with the assistance of information mining procedures. In order to lower the crime rate, we use Crime Analysis Mapping to take the following steps: 1) Gather wrongdoing information 2) Gathering information 3) Bunching 4) Guaging the information. Wrongdoing Examination with wrongdoing planning helps in understanding the ideas and practice of Wrongdoing Examination in helping police and helps in decrease and avoidance of violations and wrongdoing problems

1.INTRODUCTION

Crimes are one of the most predominant problems that is happening in most of the urban areas in the world. There are a lot of different types of crimes that happen, including robbery, theft of vehicles, etc. As crime increases, the investigation process gets longer and more complicated.

The use of information mining methods helps in resolving most complicated criminal cases. One of the best methods is crime analysis with crime mapping. Crime analysis with crime mapping helps in understanding the concepts

Public integrity checking of group shared data on cloud storage without the use of certificates

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ABSTRACT

The cloud storage service allows people to efficiently share data within a group. Because the cloud server is untrustworthy, many remote data possession checking (RDPC) protocols have been proposed and are thought to be an effective way to ensure data integrity. However, the majority of RDPC protocols are based on the traditional public key infrastructure (PKI) mechanism, which has obvious security flaws and imposes a significant burden on certificate management. To address this shortcoming, identity-based cryptography (IBC) is frequently used as the foundation of RDPC. Unfortunately, key escrow is an inherent disadvantage of IBC. To address these issues, we present a new RDPC protocol for verifying the integrity of data shared among a group using the certificateless signature technique. The user's private key in our scheme consists of two parts: a partial key generated by the group manager and a secret value chosen by herself/himself. To ensure that the correct public keys are selected during data integrity checking, each user's public key is associated with her unique identity, such as her name or phone number. As a result, the certificate is no longer required, and the issue of key escrow is also resolved. Meanwhile, without downloading the entire dataset, the data integrity can still be audited by a public verifier. Furthermore, our scheme facilitates efficient user revocation from the group. Our scheme's security is based on the computational Diffie-Hellman (CDH) and discrete logarithm (DL) assumptions. The results of the experiments show that the new protocol is very efficient and feasible

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An Innovative Biometric-Based Secure Access Mechanism Implementation for Various Cloud-Based Services

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Abstract_ In our data-driven society, the demand for remote data storage and computation services is increasing exponentially, as is the need for secure access to such data and services. We propose a new biometric-based authentication protocol in this paper to provide secure access to a remote (cloud) server. We consider a user's biometric data as a secret credential in the proposed approach. The user's biometric data is then used to generate a unique identity, which is then used to generate the user's private key. Furthermore, we propose a simple method for generating a session key between two communicating parties using two biometric templates for secure message transmission. In other words, there is no need to save the user's private key anywhere, and the session key is generated without any prior information being shared. A thorough Real-Or-Random (ROR) model-based formal security analysis, informal (non-mathematical) security analysis, and formal security verification using the widely-accepted Automated Validation of Internet Security Protocols and Applications (AVISPA) tool demonstrate that the proposed approach can withstand several known attacks against (passive/active) adversaries. Finally, extensive experiments and a comparative study demonstrate the proposed approach's efficiency and utility..

1.INTRODUCTION:

We live in a world where cloud services are the standard. To be sure, designing robust authentication, authorization and accounting for access to cloud services isn't an easy task either operationally or research-wise. OpenID and Kerberos [1], OAuth [2] and Kerberos [3] are just a few of the many authentication methods that have been discussed in the literature over the years. There are several types of protocols aimed at making it possible for two communicating entities in a distributed system to securely transfer access rights. Since the distant server that performs authentication is assumed to be a reliable part of the network, these protocols are predicated on that

An Intelligent Age Classification And Gender Prediction Using Deep Learning

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ABSTRACT: Due to the rise of social platforms and social media nowadays, there is also an increase in the number of applications that want automatic age and gender classification. As we know, age and Gender are two key facial attributes that play a very important role in social interactions. Deep Learning on the audience dataset. Moreover, to getthe most effective predictions and result by overcoming the problem ofaccuracy and time. Moreover, the map for the ways this technology can beused to our benefit and look at the huge spectrum where it can beimplemented: ranging from security services, CCTV surveillance andpolicing to dating applications, matrimonial sites.

key words: CNN, Deep Learning, Gender Classification, Age Detection.

1. INTRODUCTION

Human facial image processing has been an active and interesting research issue for years. Since human faces provide a lot of information, many topics have drawn lots of attentions and thus have been studied intensively. Digital formed pictures need to be carefully imagined and studies. Image processing has two main steps followed by simple steps. The improvements of an image with the end goal of more good quality pictures; that can be adopted by other programs are called picture upgrades. The other procedure is the most pursued strategy utilized for the extraction of data from a picture. The division of images into certain parts is called segmentation. There are different sorts of procedures required for, just as the expulsion of the issue. In a Facial identification strategy: The articulations that the faces contain hold a great deal of data. At whatever point the individual associates with the other individual, there is an association of a ton of ideas. The evolving of ideas helps in figuring certain boundaries. Age assessment is a multi-class issue in which the years; are categorized into classes. Individuals of various ages have various facials, so it is hard to assemble the pictures. Age and gender classification is arguably one of the more important visual tasks for an extremely social animal like us humans many social interactions critically depend on the correct gender perception of the parties involved. Arguably, visual information from human faces provides one of the more important sources of information for age and gender classification. In multiple cases around the world, the security forces do not have an accurate description about the

PREDICTION OF BREAST CANCER BY LEVERAGING MACHINE LEARNING ALGORITHM

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ABSTRACT

According to Breast Cancer Institute (BCI), Breast Cancer is one of the most dangerous type of diseases that is very effective for women in the world. As per clinical expert detecting this cancer in its first stage helps in saving lives. As per cancer.net offers individualized guides for more than 120 types of cancer and related hereditary syndromes. For detecting breast cancer mostly machine learning techniques are used. In this paper we proposed adaptive ensemble voting method for diagnosed breast cancer using Wisconsin Breast Cancer database. The aim of this work is to compare and explain how ANN and logistic algorithm provide better solution when its work with ensemble machine learning algorithms for diagnosing breast cancer even the variables are reduced. In this paper we used the Wisconsin Diagnosis Breast Cancer dataset. When compared to related work from the literature. It is shown that the ANN approach with logistic algorithm is achieved 98.50% accuracy from another machine learning algorithm.

1. INTRODUCTION

The most dangerous disease in the world is cancer in which breast cancer is the dangerous

For women. Many women die every year because of breast cancer. Detecting the breast cancer manually takes a lot of time and it is difficult for the physician to classification. So the detecting the cancer through various automatic diagnostic techniques is very necessary. There are various method and algorithm are available for detecting breast cancer such as Support Vector Machine, Naïve Bayes, KNN and Convolution Neural Network is the latest algorithm in deep learning that is also used for classification. CNN and deep learning algorithm mainly used for images classification and object detection. In this paper we use UCI open database for training and testing purpose in which two classes of Tumor are available, one is Benign Tumor and the other is malignant in which benign Tumor is non-cancerous and the malignant is a cancer Tumor. Many researcher are still performing research for detecting and diagnosing cancer in an early stage. Because the early stage cancer is not a so painful and expensive for complete its treatment and many researcher are still trying to developing a proper diagnosis system for detection the Tumor as early as possible. So the

A Cloud-Based Methodology for Safely Sharing Personal Health Records

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Abstract_In the health care sector has resulted in value effective and convenient exchange of nonpublic Health Records (PHRs) among many taking part entities of the e-Health systems. still, storing the confidential health data to cloud servers is prone to revelation or larceny and demand the event of methodologies that make sure the privacy of the PHRs. Therefore, we tend to propose a technique referred to as SeSPHR for secure sharing of the PHRs within the cloud. The SeSPHR theme ensures patient-centric management on the PHRs and preserves the confidentiality of the PHRs. The patients store the encrypted PHRs on the un-trusted cloud servers and by selection grant access to differing types of users on totally different parts of the PHRs. A semi-trusted proxy referred to as Setup and Re-encryption Server (SRS) is introduced to line up the public/private key pairs and to supply the re-encryption keys. Moreover, the methodology is secure against business executive threats and conjointly enforces a forward and backward access management. Moreover, we tend to formally analyze and verify the operating of SeSPHR methodology through the High Level Petri Nets (HLPN). Performance analysis concerning time consumption indicates that the SeSPHR methodology has potential to use for firmly sharing the PHRs within the cloud. conjointly we tend to Implement as a contribution during this paper time Server, Secure Auditing Storage, in Time Server PHR Owner add the start and Ending time attach to uploaded Encrypted files, and conjointly implement the TPA Module for verify the PHR Record its hack or corrupted for the other hacker and wrongdoer if information hack from hacker facet discover all system details of wrongdoer like Macintosh Address and information science Address its our contribution in our project.

Keywords: Access control, cloud computing, Personal Health Records, privacy

1.INTRODUCTION

A Model for Predicting Road Accidents Using Machine Learning Techniques

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ABSTRACT_The number of accidents occurring on a daily basis is expanding at an alarming rate due to the exponentially increasing number of automobiles on the road. certain the enormous number of traffic incidents and fatalities these days, the capacity to anticipate the number of traffic accidents over a certain time period is critical for the transportation department to make scientific judgements. In this situation, it will be beneficial to analyse the occurrence of accidents so that we may develop strategies to reduce them. Despite the fact that the majority of incidents are characterised by uncertainty,There is a level of regularity that is seen over time while viewing accidents occurring in a specific region. This regularity can be used to make accurate predictions about accident occurrences in a given area and to construct accident prediction models. We investigated the interrelationships between road accidents, road condition, and the involvement of environmental elements in the occurrence of an accident in this research. We used ML approaches to create an accident prediction model utilising Support Vector Machines and other ML algorithms. For this study, traffic accident datasets from the last few years that were made public on the internet were used.

1.INTRODUCTION

In India, the alarming rate of accident growth is now a serious concern. Recent statistics [1] indicate that despite owning only 1% of the global vehicle population, India is responsible for approximately 6% of all road accidents. Overspeeding is another factor that contributes to accidents, and the carelessness of two-wheelers is responsible for a lot of them. There are also a lot of accidents that happen when people are under the influence of alcohol or when they do general traffic violations. Numerous accidents have been caused by people's carelessness regarding vehicle speed, vehicle condition, and not wearing

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A Review On Trust Evaluation in Online Social Networks

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ABSTRACT_ Trust in online social networks (OSNs) is crucial for a variety of purposes, including online marketing and network security. However, it is a difficult subject to solve due to the difficulty of dealing with complicated social network topologies and conducting reliable assessments in these topologies. To overcome these issues, we propose the three-valued subjective logic (3VSL) model of trust. 3VSL correctly captures the uncertainties in trust and can thus compute trust in arbitrary graphs. We theoretically demonstrate 3VSL's capability and correctness in various OSN topologies using the Dirichlet-Categorical (DC) distribution. We further create the AssessTrust (AT) method based on the 3VSL model to reliably compute the trust between any two users connected in an OSN. 3VSL is validated using two real-world OSN datasets: Advogato and Pretty Good Privacy (PGP). According to the experimental results, 3VSL can accurately simulate the trust between any pair of distantly connected users in Advogato and PGP.

1.INTRODUCTION

Online informal communities (OSNs) are among the most often visited puts on the Web. OSNs assist individuals in both expanding their social circles to include friends of friends they may not have previously known and strengthening their connections with known friends. Almost all OSN applications rely on trust as the enabling factor for user interactions. In crowd sourcing and recommendation systems, for instance, trust helps to identify users and/or opinions that are reliable [2]. In web based showcasing applications[3], trust is utilized to recognize reliable dealers. In a proactive system for building friendships [4], trust makes it possible to find potential friends. In remote organization space, trust can assist a phone gadget with finding dependable friends to hand-off its information [5, 6]. In security area, trust is viewed as a significant measurement to recognize noxious clients or sites [7, 8, 9].

Cloud-based Data Storage and Sharing with Dual Access Control

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ABSTRACT_ Due to its effective and affordable management, cloud-based data storage has recently attracted growing interest from academia and industry. Since services are delivered over an open network, it is critical for service providers to adopt secure data storage and sharing mechanisms to protect user privacy and the confidentiality of data. The most popular technique for preventing the compromise of sensitive data is encryption. The practical necessity for data management, however, cannot be adequately addressed by just encrypting data. Additionally, a strong access control over download requests should be taken into account to prevent Economic Denial of Sustainability attacks from being launched to prevent users from using the service. In this plan, we take into account dual access control in the context of cloud-based storage in that we create a control mechanism over both data access and download requests without sacrificing security and effectiveness. This paper presents the design of two dual access control systems, one for each intended environment.

1.INTRODUCTION

The term "cloud computing" refers to the on-demand availability of computer system resources, particularly storage space for data and processing power, without the user actively managing them. The term is by and large used to portray server farms accessible to numerous clients over the Web. Enormous mists, transcendent today, frequently have capabilities disseminated over various areas from focal servers. On the off chance that the association with the client is moderately close, it could be assigned an edge server

Cloud-based capacity administration has drawn in significant consideration from both scholarly world and enterprises. It very well might be generally utilized in numerous Web based business applications because of its extensive rundown benefits including access

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SECRECY WITH CONFIDENCE AND ABILITY IMPLEMENTING VERIFIABLE STATISTICS CONTROL IN THE CLOUD

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ABSTRACT_A secure and adaptable framework is provided by the emerging paradigm of cloud computing for users to store their data and for information buyers to access it via cloud servers. This point of view lowers the stockpiling and maintenance costs for the information owner. Since the data owner no longer has physical access to it or ownership of it, a number of new security risks now exist. A cloud auditing service is necessary as a result. This has grown to be a challenging issue in terms of ensuring the security of the data while confirming its ownership. To address these issues, we provide a secure and practical method of preserving verifiable information ownership.We also expand SEPDP to support various data owners, dynamic data, and clump verification. The reviewer can validate the existence of data with little financial outlay when using this scheme, which is its most appealing aspect.

1.INTRODUCTION

Because it requires less initial infrastructure setup, less maintenance work, and universal data access regardless of location or device, storage-as-a-service has become a viable commercial alternative to local data storage. Although it offers many advantages, including cost savings, accessibility, usability, syncing, and sharing, it also poses a number of security risks because the cloud service provider (CSP) controls the data. To save space and increase its profits, CSP can discard the infrequently used data. However, if it wants to maintain its good name, it can also fabricate data loss and corruption due to hardware or software failure.The availability of data stored in the cloud must therefore be verified [1], [2], and [3]. Data users (DUs) do not have a local copy of the data required by traditional cryptographic solutions for data integrity checking, nor are DUs permitted to download the entire data. Both of these solutions don't seem feasible because the earlier one needs additional storage and the later one raises the cost of file transfers. To solve this problem, a number of schemes, such as [4], [5], [6], and

Identifying polarity of people based on citizens emotional pulse in a smart city

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ABSTRACT_ Over the previous decade, clever metropolis purposes have received widespread interest in industrial informatics. However, little interest has been given to perceiving the thoughts and perceptions of residents who have a direct influence on clever metropolis initiatives. In this article, we suggest the use of publicly accessible plentiful social media conversations that include contextual statistics encompassing citizens' thoughts and perceptions, which should be regarded to grant the capacity to sense the "emotional pulse" of a city. We endorse an computerized AI-based statement framework to observe the emergence of public thoughts and negativity in conversations. We evaluated the applicability of the framework the use of 29 928 social media conversations towards the much-debated subject of self-driving cars which will turn out to be increasingly more applicable to clever cities. The patterns and transitions of citizens' collective feelings had been modeled using the Natural Language Processing and Markov fashions whilst the negativity (toxicity) in conversations used to be evaluated the use of a deep mastering based totally classifier. The framework may want to be adopted via enterprise leaders and authorities officers for clever commentary of citizen opinions to enhance security, communication, and policymaking.

1.INTRODUCTION

The notion f clever cities is headquartered on growing advanced, automated, and linked smart industrial functions that effectively create a sustainable and livable metropolis for its dwellers [1]. Even although paramount significance is directed towards clever functions in a clever town environment, restricted interest has been paid to perceive the very aspect which continues the metropolis alive, its residents [2]. In the development of shrewd industrialization towards what is being known as the fourth industrial revolution, it is vital to make use of synthetic brain (AI) to recognize citizens'

PREDICTION OF CRUDE OIL PRICES USING SVR WITH GRID SEARCH CROSS VALIDATION ALGORITHM

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Abstract: Support vector regression (SVR) is a sophisticated and commonly used machine learning algorithm for prediction. The kernel type, penalty factor, and other factors have a significant impact on the efficiency and performance of SVR. The optimisation of these parameters is a priority. A contentious matter. In this paper, we offer an SVR-based prediction method based on the Henry gas solubility optimisation algorithm (HGSO), a recently developed meta-heuristic algorithm inspired by Henry's law. To begin, SVR parameters are produced at random in specific ranges to construct the parameter population. The prediction accuracies (PAs) are then calculated using the population and SVR. Finally, PAs and HGSO are used to update the population and optimal SVR parameters. The second and third steps are repeated until the cut-off conditions are reached. The prediction accuracy, convergence performance, and computational complexity of the current technique and other well-known algorithms are evaluated using ten low- and high-dimensional benchmark data sets. The experimental findings show that our technique has the best overall performance.

Index Terms: - PAs and HGSO, optimal SVR parameters

1 Introduction

Crude oil is liquid petroleum that accumulates in various porous rock formations in the Earth's crust and is removed for use as fuel or processed into chemical compounds.

Following is a synopsis of crude oil. See also petroleum, petroleum production, and petroleum refining.

1.1 Chemical and physical properties:

Crude oil is a mixture of comparatively volatile liquid hydrocarbons (compounds primarily made of hydrogen and carbon), with trace amounts of nitrogen, sulphur, and oxygen.

These components combine to generate a wide range of complicated molecular structures, some of which are difficult to identify. Regardless of variances, practically all crude oil contains 82 to 87 percent carbon by weight and 12 to 15% hydrogen by weight.

Crude oils are often classified according to the type of hydrocarbon compound found in them: paraffins and aromatics. Paraffins are the most abundant hydrocarbons in crude oil; particular liquid paraffins are key ingredients of petrol (petrol) and thus highly prized. Naphthene is a key component of all liquid refinery products, but they do, however, contribute to some of the heavy asphalt-like leftovers of refinery processes. Aromatics are typically only a minor component. Benzene, a key building block in the petrochemical industry, is the most frequent aromatic in crude oil.

Because crude oil is a complex mixture of elements and quantities, its physical qualities vary greatly. Its appearance, for example, fluctuates from colorless to black.

Specific gravity (the weight of equivalent amounts of crude oil and clean water at standard conditions) is maybe the most important physical attribute. It is common in laboratory specific gravity measurements to assign pure water a measurement of 1; things lighter than water, such as crude oil, would receive a measurement of 0.

1.2 Cross validation grid search algorithm:

The concept of SVM is to build a hyperplane or set of hyperplanes in a high or infinite dimensions space that can be utilised for classification. The margin notion from SVM is employed in the regression problem. The purpose of addressing the regression problem is to create a hyperplane that is as near to the data points as possible. The major goal is to select a hyperplane with a small norm while simultaneously minimising the sum of the distances from the data points to the hyperplane. Two parameters should be determined in both models, C and. The grid search methodology is the most commonly used method for locating the optimum C and values. A validation method is used in the grid research approach to obtain the ability to A validation method is used in the grid research approach to achieve the ability to develop good generalisations when deciding parameters. The criterion for selecting the best C and parameters are attempted pairs of C and and the best cross validation prediction of mean square error MSE.

1.3 Henry Gas Solubility Optimization:

Henry gas solubility optimisation (HGSO), which solves difficult optimisation problems by mimicking the behaviours defined by Henry's rule. Henry's law is a fundamental gas law that relates the amount of a given gas dissolved to a given kind and volume of liquid at a given temperature. To balance exploitation and exploration in the search space and prevent

GIRLS PROTECTED FROM HARASSMENT AND FRAUDULENT CALLS:-AN APPROACH BY VOICE TO TEXT

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ABSTRACT_ The increase in fraud and harassment calls, which especially target girls, has negative effects including psychological discomfort and, in severe cases, suicide. Additionally, phoney calls asking people to click on dangerous websites have resulted in huge financial losses. The increase in fraud and harassment calls, which especially target girls, has negative effects including psychological discomfort and, in severe cases, suicide. Additionally, phoney calls asking people to click on dangerous websites have resulted in huge financial losses.

1.INTRODUCTION

Harassment, prank calls, and fraudulent calls have had a significant impact on people's safety and well-being in recent years, particularly affecting vulnerable populations like young girls. A proactive solution that can distinguish between genuine threats and harmless pranks while detecting and preventing harmful consequences is necessary to address this issue.

We present a creative identification framework utilizing a voice-to-message approach, NLP methods, and AI calculations. Real-time detection of harassment, fraudulent content, and some prank calls by our system makes for safer communication and a more inclusive society. Various machine learning algorithms are used to capture audio, convert it to text, and analyze it in the implementation. The system notifies pre-registered contacts, such as parents, guardians, or law enforcement, in order to prevent tragic outcomes in the event that a malicious call is detected.

Due to the complexity and ever-changing nature of human communication, our detection system may not be able to accurately identify all prank calls, but it is a dependable method for identifying and minimizing the negative effects of

MACHINE LEARNING APPROACH FOR EARLY PREDICTION OF LOW BIRTH WEIGHT (LBW) CASES

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ABSTRACT_ In newborn newborns, low birth weight (LBW) is a sign of illness. LBW is linked to newborn mortality as well as a variety of health effects later in life. Several studies have found a strong link between maternal health during pregnancy and the child's birth weight. This paper uses machine learning approaches to extract meaningful information from pregnant women's health markers in order to predict possible LBW cases early. The forecasting problem has been rewritten as a binary machine classification problem between the LBW and NOT-LBW classes utilising supervised machine learning for LBW detection. The proposed model performed better than expected. Data from Indian health care was utilised to build decision criteria that could be generalised to predictive health care in smart cities. A screening tool based on the decision model is being developed to help Obstetrics and Gynaecology (OBG) practitioners.

1.INTRODUCTION

Low birth weight, Maternal Health and Safe Motherhood Program of the World Health Organization, 1992. It is anticipated to rise annually at a rate of 12%. Almost 39% of force is utilized for cooling 45% for running the Data Innovation (IT), framework and 13% for lights. The businesses incur significant costs from this level of consumption. Worldwide, LBW and prematurity continue to be significant threats to public health. Children with low birth weights are significantly more likely than their peers with normal birth weights to suffer from early childhood morbidity and mortality. Neonatal deaths account for a significant portion of the deaths of children under the age of five worldwide.

Babies born with a birth weight of less than 2500 grams are referred to as having a low birth weight (LBW). LBW has been identified as a major public health issue all over the world. Preterm babies as well as fully grown babies who are very small due to intrauterine growth retardation are included in LBW. Neonatal and infant mortality are strongly correlated with birth weight, with LBW infant mortality rates significantly higher than those of normal birth weight (NBW) infants. This peculiarity is presently of worldwide worry in the perspective on serious present moment and

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MACHINE LEARNING BASED EMAIL SPAM FILTERING APPROACHES

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ABSTRACT:

In this study, This method normally analyses words, the occurrence, and distributions of words and phrases in the content of emails and used then use generated rules to filter
the incoming email spams Case Base Spam Filtering Method: Case base or sample base filtering is one
of the popular spam filtering methods. Firstly, all emails both non-spam and spam emails are extracted from each user's email using collection model. Subsequently, pre-processing steps are carried out to transform the email using client interface, feature extraction, and selection, grouping of email data, and evaluating the process. The data is then classified into two vector sets. Lastly, the machine learning algorithm is used to train datasets and test them to decide whether the incoming mails are spam or non-spam

INTRODUCTION

In recent times, unwanted commercial bulk emails called spam has become a huge problem on the internet. The person sending the spam messages is referred to as the spammer. Such a person gathers

email addresses from different websites, chatrooms, and viruses [1]. Spam prevents the user from making full and good use of time, storage capacity and network bandwidth. The huge volume of spam mails flowing through the computer networks have destructive effects on the memory space of email servers, communication bandwidth, CPU power and user time [2]. The menace of spam email is on the increase on yearly basis and is responsible for over 77% of the whole global email traffic [3]. Users who receive spam emails that they did not request find it very irritating. It is also resulted to untold financial loss to many users who have fallen victim of internet scams and other fraudulent practices of spammers who send emails pretending to be from reputable

Artificial Intelligence Based Smart Electricity Theft Detection in Power Grids Using Deep Learning Models

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ABSTRACT: As one of the major factors of the nontechnical losses (NTLs) in distribution networks, the electricity theft causes significant harm to power grids, which influences power supply quality and reduces operating profits. In order to help utility companies solve the problems of inefficient electricity inspection and irregular power consumption, a novel hybrid convolutional neural network-random forest (CNN-RF) model for automatic electricity theft detection is presented in this paper. In this model, a convolutional neural network (CNN) firstly is designed to learn the features between different hours of the day and different days from massive and varying smart meter data by the operations of convolution and down sampling. In addition, a dropout layer is added to retard the risk of over fitting, and the back propagation algorithm is applied to update network parameters in the training phase. And then, the random forest (RF) is trained based on the obtained features to detect whether the consumer steals electricity. To build the RF in the hybrid model, the grid search algorithm is adopted to determine optimal parameters. Finally, experiments are conducted based on real energy consumption data, and the results show that the proposed detection model outperforms other methods in terms of accuracy and efficiency.

KEY WORDS: Deep neural network, electricity theft, machine learning, minimum redundancy maximum relevance, smart grids.

1. INTRODUCTION

The loss of energy in electricity transmission and distribution is an important problem faced by power companies all over the world. The energy losses are usually classified into technical losses (TLs) and nontechnical losses (NTLs) [1]. The TL is inherent to the transportation of electricity, which is caused by internal actions in the power system components such as the transmission liner and transformers [2]; the NTL is defined as the difference between total losses and TLs, which is primarily caused by electricity theft. Actually, the electricity theft occurs mostly through physical attacks like line tapping, meter breaking, or meter reading tampering [3]. These electricity fraud behaviours may bring about the revenue loss of power companies. As an example, the losses caused by electricity theft are estimated as about $4.5 billion every year in the United States (US) [4]. And it is estimated that utility companies worldwide lose more than 20 billion every year in the form of electricity theft [5]. In addition, electricity theft behaviours can also affect the power system safety. For instance, the heavy load of electrical systems caused by electricity theft

Machine Learning for Cyberbullying Detection on Social Media

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ABSTRACT_ Cyberbullying is a significant issue on the internet that affects both adults and teenagers.Mistakes like despair and suicide have resulted from it.A increasing demand exists for the regulation of material on social media platforms. The work that follows builds a model based on the detection of cyberbullying in text data using natural language processing and machine learning utilising data from two different types of cyberbullying, hate speech tweets from Twittter and comments based on personal assaults from Wikipedia forums. To determine the most effective method, three feature extraction techniques and four classifiers are examined. The model provides accuracy levels above 90% for data from Tweets, and accuracy levels above 80% for data from Wikipedia.

1.INTRODUCTIOHN

Technology has become an essential part of our lives more than ever before. as the internet has developed. These days, social media is very popular. However, as with everything else, misusers will emerge occasionally late or early, but there will absolutely be one. Nowadays, cyberbullying is common. Social networking websites are useful for interpersonal communication. Despite the fact that social networking has become more common over time, most people use it in unethical and immoral ways to spread negativity. This occurs frequently between adolescents and young adults. Bullying each other online is one of their negative behaviors. In the online environment, it is difficult to determine whether someone is speaking for fun or with ulterior motives. They will often laugh it off with a simple joke like "or don't take it so seriously." The use of technology to bully, threaten, shame, or harm another person is known as cyberbullying. This fight over the internet frequently leads to threats in real life for one person. Suicide has been attempted by some people. At the outset, such activities must be stopped. If an individual's tweet or post is found to be offensive, for instance,

A Novel And Efficient Neonatal Mortality Prediction Using Machine Learning Based SVM

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ABSTRACT: Children under the age of five are considered to be mortal in this context. The death rate for children under the age of five, or the under-five death rate, refers to the likelihood of dying between the ages of birth and the age of five. The death of a fetus is just as common as the death of a kid. The goal is to study ML based strategies for determining the mortality fetal well-being arrangement that provides the best precision. Here we using three ML algorithm based SVM, Random Forest and decision tree to predict output. Using the results of this study, a complete approach has been developed to sensitivity analysis for model parameters that affect fetal health categorization. This paper proposes a machine learning-based approach for predicting child mortality and compares various machine learning methods against the provided dataset.

KEY WORDS: Artificial intelligence, Mortality, Neonate, Systematic review.

1. INTRODUCTION

Artificial intelligence (AI) is the study of how to get computers to do things on their own, without being explicitly programmed to do so. In the last decade, AI has brought us self-driving cars, feasible discourse acknowledgment, strong web search, and a vastly improved understanding of the human genome. AI is so pervasive today that you probably use it without even realising it on a daily basis. There are many experts who believe this is the greatest way to progress toward human-level AI. In this course, the most effective AI techniques is discussed and putting them into action and getting them to function on their own has been practiced. Furthermore, the theoretical foundations of learning while developing the practical skills necessary to apply these tactics to new situations have been illustrated. Finally, some of the Silicon Valley's best practices for AI and AI development are studied.

2. LITERATURE SURVEY

This study presents a comparative analysis of machine learning algorithms for child mortality prediction using a comprehensive dataset encompassing socioeconomic, demographic, and healthcare indicators. The authors explored decision trees, support vector machines, logistic regression, and ensemble methods, considering different feature selection techniques. Performance evaluation metrics, including accuracy and AUC-ROC, were used to assess the models. The findings revealed that ensemble methods consistently outperformed other algorithms, emphasizing their effectiveness in predicting child mortality. The study contributes to the understanding of the most suitable machine learning techniques for child mortality prediction and their potential

Detection of Depression Related Posts in Reddit Social Media Forum

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ABSTRACT

The main cause of suicide and the largest contributor to worldwide disability is depression. It affects how language is used and is reflected in the written text. Our study's main goal is to look at Reddit user postings for any indicators of relevant internet users' views towards depression.To achieve this, we train the data using Natural Language Processing (NLP) methods and machine learning techniques, and then test the effectiveness of our suggested approach. We identify a vocabulary that is more prevalent in narratives of depression. The outcomes demonstrate that the performance accuracy of our suggested strategy may be greatly increased. Bigram using the Support Vector Machine (SVM) classifier is the best single feature to diagnose depression with 80% accuracy and F1 scores of 0.80. The Multilayer Perceptron (MLP) classifier has the best performance for depression identification, with 91% accuracy and 0.93 F1 scores, best illustrating the strength and usefulness of the combined features (LIWC+LDA+bigram). According to our research, selecting the right features and combining them in the right ways can boost performance.
keywords: SVM, MLP, and NLP

1 INTRODUCTION

Users develop and use social media platforms like Facebook, Twitter, and WhatsApp to communicate with their friends and family and share their personal views, ideas, and opinions on a variety of topics. Social networking apps, which are transforming people's lifestyles, now have a significant impact on people of all ages. Consumers frequently utilise social media, thus it is much simpler to ascertain a user's psychological state when social media message and communication data is timely collected and analysed.

The health of people is at danger because of psychological depression, a medical and physical condition. People's Depression levels have increased year after year, and this oppressive strain might occasionally result in suicidal thoughts. In India, there were 15.7 suicides per 100,000 persons in 2018.

Data preparation is the process of deleting information that is useless for classifying the text. If the undesired material is not deleted, it could cause redundancy and produce undesirable outcomes. URLs (Uniform Resource Locators), mentions, punctuation, stop words, etc. are a few instances. The clean text must be devoid of these kinds of categories because they have no real significance in terms of categorising the material.

Preprocessing makes text easier to understand by removing terms that aren't very useful, which improves the performance of machine learning algorithms. It is a crucial stage in text optimisation that makes it simple to extract key elements. Pre-processing is crucial for two causes. In order to obtain consistent results, one has to delete the undesirable data. results. Dimensionality Reduction is the additional factor. There are more features when there are more words in the text. We need to cut out the unnecessary words in order to shrink the dimensions. The chosen feature extraction methods will be used on this pre-processed text.

In NLP, feature extraction is the most crucial phase. The text's essential words are handled as its features in a clear manner. Support Vector Machine (SVM), one of the most popular supervised learning methods, is utilised for both classification and regression problems. The ideal decision border or line is what the SVM algorithm aims to produce. Data that can be separated into two classes by a single straight line are used for linear SVM. The classifier used is referred to as a Linear SVM classifier, and this type of data is known as linearly separable data.

Non-Linear SVM: For non-linearly separated data, Non-Linear SVM is utilised. A dataset is deemed non-linear if it cannot be categorised along a straight line, and the classifier used is referred to as a Non-linear SVM classifier.

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ONLINE MARKETING SYSTEMS ADAPT TO HIGH-LEVEL SECURITY AND DATA HANDLING TECHNOLOGY SOLUTIONS USING MACHINE LEARNING

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***Abstract*—** This paper reviews the different advance technologies commonly used to deal with this type of data forms a comparison among them and suggests the most efficient and informative method to use in this sector. Through the end of the review, feature engineering and its selection of parameters for achieving better performance are discussed. This makes online marketing systems adapt to high-level security and data handling technology solutions like machine learning, deep learning and predictive analytics which are efficient enough to deal with highly sensitive data, predict frauds and unwanted behavioral patterns in this data.

INTRODUCTION

Fraud detection in online shopping systems is the hottest topic nowadays. Fraud investigators, banking systems, and electronic payment systems such as PayPal must have an efficient and complex fraud detection system to prevent fraud activities that change rapidly. According to a CyberSource report from 2017, the present fraud loss by order channel, that is, the percentage of fraud loss in their Web store was 74 percent and 49 percent in their mobile channels. Based on this information, the lesson is to determine anomalies across patterns of fraud behavior that have undergone change relative to the past The rising of E-commerce business has resulted in a gentle growth within the usage of credit cards for online transactions and purchases. With the rise in the usage of credit cards, the number of fraud cases has also been doubled. Credit card frauds are those which are done with an intention to gain money in a deceptive manner without the knowledge of the cardholder.

LITERATURE REVIEW

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The volume of internet users is increasingly causing transactions on e-commerce to increase as well. We observe the quantity of fraud on online transactions

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PREDICTION OF PROSPECTIVE MEDICAL INSURANCE COST

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Abstract—In health insurance many factors such as pre-existing body condition, family medical history, Body Mass Index (BMI), marital status, location, past insurances etc affects the amount. proposed research approach uses Linear Regression, Decision Tree Regression and Gradient Boosting Regression and also streamlit as a framework. We had used a medical insurance cost dataset that was acquired from the KAGGLE repository for the cost prediction purpose, and machine learning methods are used to show the forecasting of insurance costs by regression model comparing their accuracies.

INTRODUCTION

Health is a leading provider of information for professionals and students in medicine, nursing, allied health, pharmacy and the pharmaceutical industry. Health insurance is a necessity nowadays, and almost every individual is linked with a government or private health insurance company. Factors determining the amount of insurance vary from company to company. Also people in rural areas are unaware of the fact that the government of India provide free health insurance to those below poverty line. It is very complex method and some rural people either buy some private health insurance or do not invest money in health insurance at all. Apart from this people can be fooled easily about the amount of the insurance and may unnecessarily buy some expensive health insurance. The value of insurance in the lives of individuals. That's why it becomes important for insurance companies to be sufficiently precise to measure the amount covered by this specific policy and the insurance charges which must be paid for it.

In this project our goal is to predict medical prices based on the data we have in hand. In the first few chapters of this report, we will compare the work of various authors in the area of price prediction and we will also provide the information in detail, about some of the techniques used in health care domain to predict the health care prices. Later, we will propose the design of a new system which will use Medicare payment datasets. The proposed system

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A Model for Using Machine Learning Algorithms to Analyse Consumer Behaviour

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ABSTRACT_The importance of the machine learning algorithm has increased due to their forecasting accuracy. Due to an unanticipated customer situation, it is exceedingly challenging to estimate a customer's performance. For the same objective, numerous algorithms have been created. Three Bays algorithms, including AODE, Naive Bayes, and AODEsr, have been examined and analysed in this article. We used the WEKA tool to implement these methods and created a new model with greater accuracy than the one previously used. We have worked to eliminate noise and mistake in the data during development, but we also need to filter the information. The new filtered data will receive Wj weight as a result of this operation. The error may be identified as E (j, k), Where j _ J, or it may be assumed to be an error. K depends on the purpose. Similarly, another function can be used to define noise. N = E + W.

1.INTRODUCTION

Artificial intelligence includes machine learning, in which we teach a machine to predict the desired value. The machine learns the defined pattern when we define some rules or patterns during training. Therefore, input data for machine learning is generated using knowledge that has been recorded in a database. We need to construct an algorithm and pattern to collect the necessary information because we are building our system to forecast or extract pertinent information from the incoming data set. Following the construction of the algorithm and pattern in these two steps, the machine may perform the following tasks:

2.LITERATURE SURVEY

[1] Webb, G.I., Boughton, J., Wang, Z.: Not so naive bayes: Aggregating one-dependence estimators. Machine Learning 58, 5– 24 (2005) zbMATHCrossRefGoogle Scholar

Of numerous proposals to improve the accuracy of naive Bayes by weakening its attribute independence assumption, both LBR and Super-Parent TAN have demonstrated remarkable error performance. However, both techniques obtain this

Machine learning for Bitcoin Price Prediction

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ABSTRACT_ This study aims to determine how accurately the direction of the price of bitcoin in US dollars can be anticipated. The Bitcoin Price Index is the source of the price information. Implementation results in varied degrees of success in completing the job. The Random Forest has the best accuracy in classifying data. The training time on the GPU outperformed the CPU implementation by 67.7% when both deep learning models were benchmarked on a GPU and a CPU.

KEYWORDS: Bitcoin, Deep Learning, Recurrent Neural Network, Random Forest

1.INTRODUCTION

Bitcoin is the universes' most important digital money and is exchanged on more than 40 trades overall tolerating north of 30 unique monetary standards. According to https://www.blockchain.info/, it currently has a market capitalization of 9 billion USD and sees over 250,000 transactions per day. As a cash, Bitcoin offers a clever chance for cost expectation due its generally youthful age and coming about unpredictability, which is far more noteworthy than that of government issued types of money. It is likewise special corresponding to conventional government issued types of money concerning its open nature; no total information exists with respect to trade exchanges or cash out dissemination for government issued types of money. Numerous studies have been conducted on the subject of stock market forecasting. Bitcoin presents a fascinating lined up with this as it is a period series expectation issue in a market still in its transient stage. Customary time series forecast strategies, for example, Holt-Winters' remarkable smoothing models depend on straight suspicions and require information that can be separated into pattern, occasional and commotion to be successful. For a task like forecasting sales with seasonal effects, this kind of methodology is better. Because of the absence of irregularity in the Bitcoin market and its high unpredictability, these strategies are not exceptionally successful

A Study of Cyber Security Modeling And Predicting In Cyber Hackers Models

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ABSTRACT: Analyzing cyber incident data sets is an important method for deepening our understanding of the evolution of the threat situation. This is a relatively new research topic, and many studies remain to be done. In this paper, we report a statistical analysis of a breach incident data set corresponding to 12 years (2005–2017) of cyber hacking activities that include malware attacks. We show that, in contrast to the findings reported in the literature, both hacking breach incident inter-arrival times and breach sizes should be modeled by stochastic processes, rather Than by distributions because they exhibit autocorrelations. Then, we propose particular stochastic process models to, respectively, fit the interarrival times and the breach sizes. We also show that these models can predict the inter-arrival times and the breach sizes. In order to get deeper insights into the evolution of hacking breach incidents, we conduct both qualitative and quantitative trend analyses on the data set. We draw a set of cyber security insights, including that the threat of cyber hacks is indeed getting worse in terms of their frequency, but not in terms of the magnitude of their damage.

KEY WORDS: Analysis cyber incidents, stochastic process, prediction of hacking.

1. INTRODUCTION:

Cyber hacking breaches have become a growing concern for individuals, businesses, and governments alike. As more and more information is stored and transmitted online, the risk of cyber attacks increases, and the consequences can be severe. Breaches can lead to the theft of personal and financial data, damage to infrastructure and systems, and the exposure of sensitive information. One way to mitigate the risk of cyber attacks is through the use of modeling and predictive analytics. By analyzing data on previous cyber attacks and identifying patterns and trends, models can be created that help predict the likelihood of future breaches. These models can also be used to identify potential vulnerabilities and suggest strategies to prevent or mitigate attacks. As the threat of cyber attacks continues to grow, the importance of modeling and predicting breaches will only increase. By leveraging the power of data analytics, organizations can better understand their vulnerabilities and take proactive steps to protect themselves against cyber threats The detailed model describes the example attack graph of unauthorized access to intellectual property. In this paper, we propose a new methodology of estimation of VaR for cyber events. In this paper, we aim to provide a framework that can model risks dynamically and re-estimate cyber risk when new data becomes available. Many current risk methods are based on manual risk analysis during the system's design process. Some of

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AUTOMATIC TIME TABLE GENERATION BY USING PYTHON

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ABSTRACT:
In this application, the automatically generated timetable reduces the complication of manually setting and managing a timetable. In implementation result we are utilize resource scheduling to decrease the difficulties of producing timetable. Our proposed method integrates a numeral of approach, intended to advance the cooperativeness of the explore operation. The time table does not overlap with their other schedules and these timetables efficiently utilized by faculty. In this work, we develop the application of time table which can be automatically generating time table according faculties' available time slots. This system provides benefits to the faculty and they do not need to worry for time clashes; a human do not need to perform permutation and combination and they can concentrate on other activities rather than wasting time by generating Time-Table. This system gives efficient time table generated according to professional college requirement.
KEYWORDS: Colleges, Time Table, Faculty, Courses, System, Constraints, Resource Scheduling, Optimal Solution.

1.INTRODUCTION:

Even though most college administration work has been computerized, timetable scheduling is still done manually due to the difficulties involved. The manual timetable scheduling requires considerable time and effort. Timetabling is the allocation, of given resources to objects that are placed in space time, in such a way that they satisfy a desirable set of objectives. The college lecture-timetabling problem asks us to find some slots and classrooms which satisfy the constraints imposed on offered courses, lecturers, classrooms and so on. The problem is a combinatorial optimization problem belonging to NP-hard class where the computational time grows exponentially as the number of variables increases. Various approaches have been made in the past decade to solve the problem of constructing timetables for schools and colleges. In our paper this problem is formulated as a constraint satisfaction problem and we discuss the various approaches that are capable of handling both hard and soft constraints. Hard constraints cannot be violated under any circumstances. For example, two classes cannot be allocated to a single teacher at the same time period, two classes cannot be attended by a student at the same time, more than one class cannot be held at a room at the same time et cetera. Soft constraints are necessary but not absolutely critical. For example, a timetable must be made in such a way that a group of students don't have to come to college to attend only one class.

2. Related Work:

There exist various timetable generation problems such as University Timetabling, Employee Timetabling, Sports Timetabling and Examination Timetabling. Carter and Laporte (1998) considered different categories to solve the timetabling problem. They are – Cluster method, Sequential method,

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DEVELOPMENT OF A STUDENT GRIEVANCE CELL APPLICATION USING MERN STACK

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ABSTRACT

Grievance name suggests INJUSTICE. In college's if anyone wants to raise a complaint then one must write it on a paper and wait for the response from the authorities but as this is a time taking process we came with this solution. Here Students must sign-up to lodge complaints, we provide different categories where they can complain to their respective department. Student will also have the page where they can view the status of their compliantIn Admin side they can login into the website andcheck the complaints lodged by the students. Here the task of the respective authorized person is to verify the complaint and respond to it. After that the admin should change the status of the lodged complaint. The student can see the status of the complaint as IN PROCESS or it has been CLOSED by the Admin ON Dashboard. Students need to check the complaint status whereas Admin needs to check the complaint regularly to see whether new complaint has been filed or not. I conclude that, by this website the management can know what problems students are facing in the campus, and management can take a lead to solve the issues immediately.

KEYWORDS-ReactJS, MongoDB, Express JS, NodeJS,

INTRODUCTION

A Grievance may be any kind of discontent or dissatisfaction or negative perception, whether expressed or not. The grievance has rising in several organizations, institutes, colleges as well in universities. As seen nowadays it is not possible to solve student's issues or it is not possible to communicate with staff to solve issues. Grievance system can be handled directly by College's through their own websites. Our project is an online platform to receive and act on complaints reported by students of College's, enabling prompt actions on any issue raised by them and to avail services more effectively. Hence by this, it is easy for students to communicate with our website. The fully automated system includes a user interface for students and admin/grievance cell member's interface for managing doubts or any issues clear. This project is a web application development project in which only particular university students can access the Grievance websites for their issues. In this grievance system students can deal with complaints, issues or doubts associated with twodepartments namely WomenGrievance,Anti-ragging. This website will be safe and secure. This project is intended to maintain for students' protection and assures that it is being accessed only by particular Universities. With the help of malicious codes and programs, hackers or an intruder can gain access to the system and website. For this issue we had maintained full privacy and security for our website. This website will use by all universities but by entering student's roll number. Our website is user friendly and maintain with privacy and Security.

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NETWORK INTRUSION DETECTION SYSTEM USING SUPERVISED MACHINE LEARNING WITH FEATURE SELECTION

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ABSTRACT

Advances in network technology have enabled the communication sector to connect remote parts of the world, but they have also led to a rise in attacks on networking infrastructure from intruders or attackers. By using intrusion detection tools and systems, system administrators can try to stop such attacks. Machine Learning (ML) methods have become more and more common in intrusion detection systems in recent years (IDS). Due to their high generalizability and capacity to escape the dimensionality curse, Support Vector Machines (SVM) and Artificial Neural Network Networks (ANN) have emerged as the most widely used machine learning (ML) methods for intrusion detection. According to several experts, the number of dimensions still has an impact on how well SVM-based IDS and ANN function. Another problem brought up is how SVM evaluates each data characteristic equally. Many features in actual intrusion detection datasets

1.INTRODUCTION

The first line of defence against a security breach is intrusion detection. As a result, studies are paying a lot of attention to security solutions including firewalls, intrusion detection systems, unified threat models, and intrusion prevention systems (IPS). IDS gather data, analyse it for potential security breaches, and then identify assaults from a number of systems and network sources. The network-based IDS performs two types of analyses on the data packets that move through a network. A key field of research continues to be anomaly-based detection because it is still far behind signature-based detection in terms of efficiency [4-5]. Intrusion detection is the first step to prevent security attack. As a result, studies are paying a lot of attention to security solutions including firewalls, intrusion detection systems, unified threat models, and intrusion prevention systems (IPS). IDS gather data, analyse it for potential security breaches, and then identify assaults from a number of systems and network sources [3]. The network-based IDS performs two types of analyses on the data packets that move through a network. A key field of research continues to be anomaly-based detection because it is still far behind signature-based detection in terms of efficiency [4-5]. Anomaly-based intrusion detection faces difficulties since it must handle fresh attacks for which there is no prior knowledge to recognise the abnormality. Hence Machine learning approaches have been investigated by researchers over the past several years to help the system distinguish between traffic that is benign and traffic that is malicious or abnormal. IDS, however, is not a solution to every security-related issue. IDS, for instance, cannot make up for inadequate means for identification and authentication or for weaknesses in the network protocols.

The first intrusion detection model was published in 1987 after the field's first studies on it began in 1980 [7]. Although there have been significant commercial investments and research over the past few decades, intrusion detection technology is still in its infancy and is therefore ineffective [7]. The adoption of anomaly-based network IDS by technology-based organisations around the world has not been as widespread as that of signature-based network IDS. As a result, research and development in the field of IDS are currently focusing heavily on anomaly-based detection [8].

Moreover, significant problems need to be resolved before an anomaly-based intrusion detection system is widely deployed [8].But the literature today is limited when it comes to compare on how

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A COMPARITIVE ANALYSIS OF CLOUD COMPUTING RESOURCE SCHEDULING ALGORITHMS

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ABSTRACT - As an on-demand computing service with which users pay as they go using a utility computing paradigm, cloud computing systems have seen a recent and considerable increase in popularity. One of the key objectives of cloud computing is to maximize profit while enabling effective remote access to resources. So, scheduling—which focuses on allocating activities to the available resources at a specific time—is the main challenge in developing cloud computing systems. In this research, we present a simulation analysis that compares the three most frequent and widely used resource scheduling algorithms for cloud computing: Round Robin (RR), improved max-min, and Selective algorithms.CloudSim evaluated the methods while taking into account the time- and space-sharing scheduling allocation policies. These algorithms' propensity to deliver high-quality service for the tasks and ensure fairness among the jobs served has been simulated. The characteristics of the specific cloud must be taken into account. We must evaluate algorithms based on those parameters, simulate each method, and select the best outcome from the outcomes produced by each algorithm.
KEYWORDS-Resource Scheduling Algorithms,Parameters,CloudSim.

1. INTRODUCTION

For giving on-demand access to computing resources over the internet, cloud computing has grown in popularity. To meet the service-level agreements (SLAs) of their clients while utilizing available resources to the fullest, cloud providers must master effective resource management.Algorithms for resource scheduling are essential for guaranteeing effective resource use. In accordance with predetermined policies and constraints, resource scheduling algorithms oversee allocating computing resources to user demands. These algorithms choose which virtual machines (VMs) should do particular tasks and when to allocate or release such VMs. To address various facets of the resource management problem, various cloud computing resource scheduling techniques have been suggested. The majority of resource scheduling techniques are designed to accomplish two main aims: Improving the standard of service in job execution and delivering the anticipated results on schedule. The second is to continue to treat all jobs equally and efficiently.By building a virtual computer, the cloud environment offers a different platform that helps customers complete their tasks affordably and quickly without compromising service quality. We will use the CloudSim for this project. An open-source framework called CloudSim is used to model cloud computing infrastructure and services. The way computing resources are managed and used has been completely transformed by cloud computing. It provides a convenient and affordable method of gaining access to computing resources over the internet. To guarantee that cloud providers adhere to their service-level agreements (SLAs) and make the best use of their resource pool, effective resource management is essential. In order to achieve effective resource usage in cloud computing, resource scheduling techniques are crucial. These algorithms oversee allocating computing resources to user requests in accordance with predetermined rules and limitations. There are various resource scheduling algorithms that each have their own benefits and drawbacksIn this comparative analysis, an evaluation and comparison of some of the widely used resource scheduling algorithms in cloud computing. An analysis of their strengths and weaknesses and examine how they perform in different scenarios. The aim of this analysis is to provide a comprehensive understanding of the different resource scheduling algorithms and help cloud

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FRAUD RESEMBLANCE IDENTIFICATION USING MACHINE LEARNING

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Abstract:
Image alteration has become so widespread in modern times thanks to the availability of image editing programmes like Adobe Photoshop or GIMP. For image-based cybercrimes to be exposed, it is necessary to find such phoney images. The JPEG format is frequently used to save images captured with a digital camera or smartphone. Using grids of 8x8 pixels that have been separately compressed, the JPEG algorithm operates. Unaltered photos, however, have a comparable error level. Since there are roughly the same number of mistakes throughout the entire image, each block should degrade at about the same rate during the resaving process. Using error level analysis, it is discovered that the compression ratio of this fake image differs from the actual images.
In this project, LBPNET, a machine learning convolution neural network, is being developed to identify false face photos. Here, we'll first extract LBP from the images before training a convolution neural network on LBP descriptor images to create a training model. Every time we add a new test image, the training model will use that image to determine if the image is false or not.

1. Introduction:

As a result of the huge expansion of technology in today's society, images are now one of the most widely utilized forms of communication. Images are used in publications like newspapers, magazines, websites, and advertising, and they may convey a variety of information. Due to their increased utilization in daily life, the trust in photographs is growing day by day. Image forgery is the act of tampering with or modifying an image by changing some of the information it contains, and image forgery detection is the process of determining whether the image is authentic or not.
Huge number of people have been victims of picture forgery in our current world. In order to deceive the court or numerous other people, many people modify photographs using image- editing software and present them as evidence. This is why it's important to assess and categorise every image published on social media as either real or fraudulent.
A significant media phenomenon is social networking sites these days and have drawn a lot of attention. The number of users [1] has surpassed three billion globally. The increase in the number of active users has surpassed 66% in the Gulf area [2]. More over 75% of Saudi Arabia's estimated 25 million residents [3] are active users of social media, placing the country ninth in the world in terms of social media usage.
Social media is one of the best venues for connecting with people, exchanging ideas, and disseminating information, but if safety measures aren't implemented, it can deceive users and cause chaos as a result of inadvertent false propaganda. While it takes some experience to photoshop images, some of them when edited by a professional might actually appear genuine. This is due to pixelization and dodgy jobs by novices. Images can be changed, especially in the political sphere, to increase or decrease a politician's credibility.
The believability of an image must be evaluated by a specialist in order to use the forensic techniques

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UNASSAILABILITY BY USING DISTRIBUTED LEDGER TECHNOLOGY AND AI

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Abstract:
Information is the input for various ArtificialIntelligence (AI) algorithms to mine valuable features, yet statistics in internet is scattered anywhere and managed by means of one-of-a-kind stakeholders who cannot accept as true within each other, and usage of the facts in complicated cyberspace is tough to authorize or to validate. As an end result, it's miles very hard to enable information sharing in cyberspace for the real large facts, in addition to a real effective AI.
In this project, we advise the SecNet, a structure which can allow at ease records storing, computing, and sharing inside the big-scale net surroundings, aiming at an extra relaxed our on-line world with real large statistics and as a result superior.
AI with lots of facts source, by integrating three key components:
1) Blockchain-based totally records sharing with ownership guarantee, which enablesdepended on records sharing within the large-scale environment to form real huge facts;
2) AI-based relaxed computing platform to supply more smart safety regulations, which helps to construct a greater relied on cyberspace;
3) Trusted fee-change mechanism for getting security carrier, providing a manner for individuals to advantage economic rewards while giving out their statistics or service, which promotes the records sharing and for that reason achieves higher performance of AI.
Furthermore, we talk the typical use scenario of SecNet in addition to its potentially alternative manner to deploy, as well as analyze its effectiveness from the component of community protection and economic sales.

Keywords:Data security, data systems, artificial intelligence, cyberspace.

I. INTRODUCTION

The tendency of combining cyber, physical, and social (CPS) systems into a highly integrated information society, rather than only a digitalone, has emerged with the advancement of information technologies.
Internet usage is increasingly obvious. Data is an asset of its owner in such an information society, and although this is not always the case, it should be.
Given that data is unquestionably the lifeblood of the information society, nearly every large corporation wants to gather as much data as they can to increase their competitiveness in the future. The built-in sensors inside those large firms' products are secretly gathering an increasing quantity of personal data, such as location data, web browsing habits, user calls, and user preferences. exposes data owners to significant privacy risk. Additionally, the use of those data is currently outside the control of their proprietors.
The performance of Artificial Intelligence (AI)will be significantly improved if there is a reliable and efficient way to gather and combine the data scattered throughout the entire CPS to create real big data. Since AI can handle massive amounts of data, including huge information at once, this will have great benefits (e.g., achieving enhanced security for data) and even make AI able to surpass human capabilities in more areas.Hence, improved AI can offer data security and greater performance.

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CYBER ENCROACHMENT DETECTION BASED ON INTELLIGENT RETRIEVAL NETWORKS USING EVENT PROFILES

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Abstract:

One of the significant difficulties in network protection is the arrangement of a robotized and compelling digital dangers discovery method. In this paper, we present a simulated intelligence procedure for digital dangers discovery, in view of fake brain organizations. The proposed procedure changes large number ofgathered security occasions over completely to individual occasion profiles and utilize a profound learning-based location technique for upgraded digital danger discovery. For this work, we fostered a simulated intelligence SIEM framework in light of a mix of occasion profiling for information preprocessingand different counterfeit brain network techniques, including FCNN, CNN, and LSTM.

The frame work centers around segregating between evident positive and misleading positive alarms, consequentlyhelping security investigators to quickly answer digital dangers. All analyses in thisstudy are performed by creators utilizing two benchmark datasets (NSLKDD and CICIDS2017) and two datasets gathered inreality. To assess the exhibition examination with existing strategies, we led tests utilizing the five customary AI techniques (SVM, k-NN, RF, NB, and DT). Subsequently, the exploratory consequences of this study guarantee that our proposed strategies are fit for being utilized as learning-based models for network interruption discovery, and show that in spite of the fact that it is utilized in reality the execution bears the ordinary AI techniques.

1. Introduction:

Learning-based systems for identifying cyber assaults have developed further with the development of artificial intelligence (AI) capabilities, and they have shown considerable outcomes in numerous studies. Yet, protecting IT systems from threats and criminal network behaviour is still very difficult because cyber attacks are always changing. Effective defences and security concerns were given significant priority for establishing dependable solutions because of numerous network intrusions and malicious actions [1], [2], [3], [4].

For identifying network intrusions and cyber threats, there are typically two main systems. The company network has an intrusion prevention system (IPS) installed, which uses signature-based techniques to primarily inspect network protocols and flows. It produces the necessary intrusion alerts, also known as security events, and reports the alert generation to another system, like SIEM. The gathering and administration of IPS detect [6], [7]. Hence, machine learning and artificial intelligence algorithms for identifying attacks have received moreattention in the most recent studies in the field of intrusion detection. The development of AI-related domains can help security experts investigate network

For analysts who need to quickly determine a huge number of events, a learning-based approach targeted towards evaluating whether an attack occurred in a big amount of data can be helpful. [10] states that information security solutions often fall into two categories: those driven by analysts and alerts has been the primary focus of security information and event management (SIEM). The SIEM is the most common and dependable option among several security operations solutions to analyse the gathered security events and logs [5]. Moreover, security analysts work to evaluate suspicious alerts based on policies and thresholds and to find malicious behaviour by looking at

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STUDENT CONNECT – A MERN STACK BASED FORUM

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ABSTRACT:
The new MERN (MongoDB, Express, React, Node.js) stack-based online discussion platform named "***Student Connect***" is proposed specifically to meet the requirements of a learning institution like an engineering college. The platform intends to offer a setting for productive dialogue and engagement between students, academic staff, former students, and non-teaching personnel. It will provide a cooperative setting that makes it easier for students to receive precise and trustworthy responses to their questions from a variety of sources, such as seniors, fellow students, instructors, and alumni. Additionally, the platform allows to mentor grouping to assist the college's pupil mentor programme, boosting the educational experience for the students. The goal of this application is to fully address students' questions and support them as they progress academically. "Student Connect" will give students the opportunity to grow their abilities, connect with professionals in the field, and participate in productive debates by offering a platform that encourages interaction among members of the educational community."Student Connect" also acts as a central location for all educational resources and activities. In order to communicate with students, impart knowledge, and help them on the path to professional success, it will give faculty and alumni a platform.
KEYWORDS: MERN Stack, Online discussion forum, Educational Organizations, Interaction, Mentor Grouping, Academic Queries, User Friendly platform

1. INTRODUCTION:

In today's digital age, web-based applications have become an integral part of educational institutions. One such application is to address the "Communication Capabilities between Students and Faculty" platform, which allows students and faculty members to interact and communicate in real-time. The platform provides a convenient and efficient way for students to clarify their doubts and get feedback from their professors, thus enhancing their learning experience. Additionally, the platform can be used to analyse student activity and performance, enabling faculty members to identify areas where students need additional support and tailor their teaching methods accordingly.With the ability to share knowledge and opinions, online forums has become a vital part. Forums can be quite helpful in fostering critical thinking and learning in educational settings. Technology advancements have made forums more participatory, and they are being used more frequently in educational contexts. The proposed student interface is an online forum created exclusively for teachers and students to post questions and exchange ideas. The forum is a significant tool for academic communities since it fosters knowledge production and active learning.The platform's capability to support causes such as fundraising is another important element. Students can plan and organize activities to support a cause or utilise the platform to generate money for other charity causes. This feature gives students a great opportunity to improve their leadership and organising skills while also fostering a feeling of community and social

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IDENTIFYING FAKE USERS & DETECTING SPAMMERS IN SOCIAL MEDIA

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ABSTRACT:
Online Social Networks (OSNs) are great environments for sharing ideas, following news, advertisingproducts etc., and they have been widely used by many in the world. Although these are the advantagesof social networks, it is difficult to understand whether an account in social media platform such asInstagram, Twitter, Facebook really belongs to a person or organization. Through creating fake andmalicious accounts, unwanted content can spread over the social network. Therefore, the prediction offake accounts is an important problem. In this study, we applied machine learning algorithms to thisproblemandweevaluatedperformancesofdifferentactivationfunctions.Accordingtotheexperimentalr esults, use of machine learning algorithms in detecting fake accounts yielded successful results. The useof various activation functions indifferent layers on the ANN significantly affects the results. In theliterature,otherclassificationmethodshavebeenwidelyusedfor detectingfakeaccountsandspammers on online social Network. To the best of our knowledge, there is no brief study that classifies fakeaccounts usingANNswithdifferentactivationfunctions.
KEYWORDS: Socialmedia, Artificialneuralnetwork, Spammers, Fakeprofiles.

1. INTRODUCTION:

Malicioususersproducefakeprofilestophishlogininfofromunsuspectingusers.Afakeprofilecansendfrien drequeststoseveralusers withpublicprofiles.Thesecounterfeitprofiles baitunsuspectingusers with photos of individuals and they may misuse them for various use. Once the user accepts therequest,theownerofthephonyprofilecanspamfriend requeststoanyonethisusercould be afriend.Thefakeprofile'scontentsusuallyhavelinksthatresultinmaliciousexternalwebsitewherethereisan attack of virus to the system and when unaware curious user clicks the dangerous link can result incrashing of their systems. The effect of this may be dangerous as putting in a root kit turning the pc intoazombie.WhereasFacebookcontainsarigorousscreeningto stay thisfakeaccountsout,it solelytakesonefakeprofiletowreckthecomputersofthemany.Hence,wecameupwithasolutionbyusingmac hinelearningalgorithmswhichgavesuccessful results.To the best of our knowledge, this is an attempt to design machine learning models for the automatic classification of trend promoters. As such, our framework is generic and adaptable for tweets posted in different natural languages as it utilizes language independent features.

2. LITERATURE SURVEY:

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FORMATIVEASSESSMENTFORONLINEQUIZAPPLICATION

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ABSTRACT:

The Project: "Quiz Application" is a collection of number ofdifferent types of quizzes like technical, General knowledge,English Grammar, Quantitative Aptitude etc. A user canaccessonly one quiz at a time. There will be limited number of questionsandforeachcorrectansweruserwillgetacreditscore.Usercansee answers as well as can ask a query relatedto it. There aremanyRealtimequizapplicationsavailablecurrentlyoninternet.But there are few Which provide betterunderstanding betweenusers and the application like,providing proper answers, userquery solving, uploading userquestions as well as answer to it,etc.WecreateaMCQQuizapplicationIncludeDatabaseactivityusingHTML,CSSandJavaScript,Bootstrap,NodeJSTechnology, HTML is used to display content on webpage, CSSis used to style HTML document, JavaScript isto make a timer,Djangoisapythonframework,todevelopa userfriendlyapplication,ourapplicationwillcontainsoptionsaspertheuserrequirements (like no of sections) Login and logout system-Theuserneedstoregisteronthewebsite,GUI,and(s)hecangivethetestandtheresultswillbeprovidedastheusercompletesthetestand the test will be automatically submitted to the database thenthe user has complete access over his/her account and the orderof questions changes for different users and also the websitecompatible to use on different devices and also the ranking isprovided as per the score gained by the user and at last we willprovide keyalong with feedbackform

Keywords: Multiple Choice question (MCQ), Graphical UserInterface (GUI), Database Activity, Login and logout, RealTime,QuizApplication, Website

1. INTRODUCTION

Online Quiz are an important method of evaluating the successpotential of students. This research effort the individuals underconsideration were students who would beenrolling in computercoursesorTechnologiesRegistrations.Aprototypeofaweb-basedplacementQuizsystemisdescribedfromthestandpointoftheresearcheffort,enduser,andsoftwaredevelopment.ClassMarker'ssecure,professionalweb-basedQuizmakerisaneasy-to-use,customizable online testing solution for business, training &educationalassessmentwithTest&Quizzesgradedinstantlysavingyour hours of paperwork.We have designed thiswebsite with the purpose of allowing the students to giveexams and view their results and ranking, this quiz websiteprovide a great platform for practice and solving query bytaking feedback from the user, which is having great userinterface,Ouraimistodevelopaapplicationusercanchoosehis/her own choice Firstly we have to make interface forHome page, Registration, Login page, Question Attemptingforum, Result page and also key page. These all pages haveconnectivitywiththeserver anddatabase.

2. LITERATURESURVEY

2.1 QUIZ

Quizzescanaddinsightandenhancestudents'abilitiesaboutthe subject matter that is being learned. Quizzes can alsostimulate students to learn. said that the use of technology inthe learning

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TRACE MORTAL PURSUIT FRAMEWORK USING AI

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ABSTRACT –
Computer interfaces novelties are noticeable to expand AI based technology. Human actions and movements are recorded, tracked, and noticed with the help of AI based expert systems. NLP, ML, and its techniques are owned for tracking of human behaviours, according to the cautions that are generated in crucial time of situations will assist the mortals. To restrain emergency situations, AI based set-up and its mode are popular in human way of life. Surveillances gadgets are required around-the-clock to track record in the form of facts that are analysed using computer visionary techniques, NLP is utilized to recognize the human behaviour speech to diagnosis the circumstances and act according to posies. RNN with LSTM techniques are exercised and examine to execute the framework.
Keywords: NLP, facts, RNN, LSTM, examine, framework.

INTRODUCTION

Is it feasible to accurately understand what is happening at a certain location when we are not physically present without watching video footage? Since we are all currently busy with other tasks, we do not have a lot of time to dedicate to watching the entire film to understand what is happening. But there is another choice for this, namely an audio clip with a person narrating the scene. The main advantage of this is we can simultaneously save time and multi-task i.e. doing our work by listening to the audio clip that is generated by getting the up-to-date information and if any person suddenly falls which may cause heavy injuries that may lead to a major medical issue for elderly people. Therefore, to prevent such emergencies, it will also feature an alarm system to detect human falls. This is made feasible by utilizing cutting-edge technology like computer vision and image processing to record live events, RNN with LSTMs to process and analyse the recorded ones, and natural language processing to provide a description of what is happening. Users receive audio clips that are created using the Google Text to Speech API. We frequently encounter CC cameras installed in and around our surroundings in daily life. They film everything that is happening in the location 24/7 but we do not have enough time to watch everything that is being recorded. Is it possible to accurately comprehend what is happening at a certain location while we are not physically present there without watching video clips? There may be occasions when you must leave for work, leaving elderly family members alone at home. In some circumstances, it can be difficult for us to monitor their situation, and they themselves might be unable to contact with us. Then there is our application called "Tracking of Human Activities," where we can monitor a variety of human behaviours, create an audio clip from the input recording, and even recognize a person's unexpected fall and send out an alert. We can listen to something that has been captured and converted to audio while driving or even while seated in a conference. This helps us save a tone of time while also letting us know what is going on in the area. Early approaches for creating picture descriptions assemble image data using the image's static object class libraries, which are then characterized using statistical language models. The query expansion method, which pulls similar images from a huge dataset and uses the distribution stated in association with the obtained photos, are some indirect approaches to solving the problem of image description that have also been presented. The common drawback of all the brainstorming techniques mentioned

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DIGITAL POLLING SYSTEM USING BLOCKCHAIN

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ABSTRACT

Digital polling is a trend that is gaining momentum and trend in modern society. It has great potential to decreaseorganizational costs and increase voter turnout. It is asecure, transparent and decentralized way of voting. It converts bal lots into transactions and securely mines blocks out of them. This allows the participants to verify and audit transactions in dependently and relatively in expensively.Theadvantageofablockchainbasedvotingsystemincludetheabilitytovotefromanyplaceandpre vent any tampering of votes. Despite these benefits, online voting solutions are viewed with a great deal of caution because they introduce new threats. A single vulnerability can leadtolarge-scale manipulations of votes. Electronic voting systems mustbelegitimate, accurate, safe, and convenient when used for elections. The main goal of this analysis was to examine the currentstatusofblockchain-based voting research and online voting systems and any relateddifficultiestopredictfuturedevelopments.Asaconsequenceofthisstudy,it was discovered that blockchain systems may help solvesome ofthe issues that now plague election systems. On the other hand, them ostoften mentioned issues in block chain applications are privacy protection and transaction speed.Forasustainableblockchainbasedelectronicvotingsystem,thesecurityofremoteparticipationmustbevi able,and for scalability, transaction speed must be addressed. The key novelty of our solution is a fully decentralizeddigitalvotingplatformthroughblockchain,which provides securit y and privacy to the voteru singhomomorphicencryption.

Keywords: Decentralized, Blockchain, Transparent,Blocks, Transactions

1. INTRODUCTION

The development of e-voting technologies isstill in its beginnings. We picked this topicnotjustbecauseitisnew,butalsobecausethere aren't many solutions available to issueswithelectronicvoting.Thesedays,Governmentadvancementisgainingpopularity. Yet if essential political systemslikeelectionsdon'tgodigital,suchasystemisimpractical.Amongthemajorpublicareasthat blockchain technology has the possibilityof transforming electronic voting. Electronicvoting also brings with it new problems thatneed to be solved. One of them is electionsecurity, transparency, which must be at leastas secure as the traditional polling methodsusing ballot papers. Because of this, we havechosen to develop safe polling methods usingblockchain by providing security to the votes&also forvoters.

1.1 OBJECTIVE

Various types of voting have existed sincethen. Paper ballots are the most often usedformallthroughouttheworld.Computerizedvotingtechniqueshavejustbecomeincreasinglycommonov erthepasttenyears,andtheyremainunaddressed.Security,legitimacy, transparency, dependability, andusefulness are among the issues raised by e-voting techniques. Yet, there are just a fewblockchain-basedalternatives.Blockchaincansolveallofthecconcernsdescribedabovewhilealsoprovidingbenefitssucha simmutabilityanddecentralization.The primaryissueswithblockchain-basedelectronic voting are their narrow focus or a lack of testing and comparability.Wedescribeablockchain-basedvoting plat form whichaddresses theseissues in this article.LITERATURESURVEY

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AN ONLINE HEALTHCARE PLATFORM FOR SAFE AND SECURE DOCTOR-PATIENT COMMUNICATIONSAND PRESCRIPTION FULFILMENT: e-Doctor

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Abstract
The e-Doctor project aims to develop an online healthcare system that provides patients with online medical consultations, electronic prescriptions, and medication delivery services to their doorstep. The system will facilitate secure and reliable communication between patients and doctors, enabling patients to access healthcare services from the comfort of their homes. The platform will be developed using modern web development tools and technologies such as HTML, CSS, PHP, and SQL DB. The project will use the agile software development methodology to ensure flexibility, collaboration, and continuous improvement. The expected outcomes of the project include increased patient access to medicalconsultations and medicationdelivery services, reduced burden on healthcare facilities, and improved healthcare outcomes. The e-Doctor platform will be secure, compliant with legal and ethical guidelines, and provide a user-friendly and responsive interface. The project will contribute to the development of innovative online healthcare solutions and create new opportunities for innovation in the healthcare sector.

1. INTRODUCTION

The healthcare industry has seen a steady rise in the adoption of digital solutions in recent years, particularly in the wake of the COVID-19 pandemic. Patients are increasingly looking for digital alternatives to traditional healthcare services, including virtual consultations and online prescription fulfillment. However, ensuring the security and privacy of patient's personal information remains a significant concern in the digital healthcare space.

To address these concerns, an online healthcare platform for safe and secure doctor-patient communications and prescription fulfillment is proposed. This platform aims to provide patients with a secure and convenient way to communicate with their doctors, receive medical advice, and fulfill prescriptions without having to visit a physical clinic or pharmacy. The platform will also enable doctors to remotely diagnose and treat patients, which can reduce the burden on physical clinics and hospitals and increase access to healthcare services for patients.

2. RELATED WORK

The literature review identified several studies that support the use of online healthcare platforms, patient-doctor communication, and electronic prescribing. However, there is a lack of research on the development and implementation of an online healthcare platform that provides safe and secure doctor-patient communication and prescription fulfillment. More specifically, the research gap includes the following areas:

1. Privacy and Security
2. User Acceptance
3. Technical Challenges

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DEVELOPMENT OF WEBSITE WITH DYNAMIC FLOW USING OPEN SOURCES

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ABSTRACT
The college website is the most effective medium for students, faculty, and others to learn about the institution. The college website provides essential information to fulfil the needs of many different consumers. The purpose of the college website is to assist students, teachers, staff, and anyone else interested in learning more about the institution. This website offers the study material which are placed in order of branch and year wise. Many students don't have the study materials when they need them, or other branch students are keen to know about the subjects and technologies used in different branches to develop their skills. In addition to the faculty information, we also post the schedule on the website.
KEYWORds: Dynamic, Web development, Server

1. INTRODUCTION
Over the past ten years, internet usage has grown significantly and quickly. For the majority, if not all, businesses and organizations, websites have emerged as the most significant platform for public communication. Websites are essential for connecting with college students because internet usage is continually expanding .A college's website must be developed in order for people to learn more about the college. Websites are developed using a variety of programming languages, including HTML(Hyper Text Markup Language), CSS(Cascading Style Sheets), JavaScript ,PHP(Hypertext Preprocessor).The key goals of college websites are innovation and simplicity so that everyone can comprehend them. It makes thingssimple for parents so they don't get confused or have to visit a college for information.Website can be static and dynamic static site shows the substance for what it's worth though unique site changes according to the requirements .Incollege website dynamic is utilized to schedule occasions transfer

2.RELATED WORK
Web improvement, otherwise called site improvement, refers to the topic related with making, fabricating, and keeping up with sites and web applications that run internet based on a program. It might, in any case, additionally incorporate website composition, web programming, and data set administration.
Web advancement is firmly connected with the gig of planning the elements and usefulness of applications (website composition). The term advancement is typically held for the real development of these things (in other words, the programming of destinations).The essential apparatuses engaged with web improvement are modifying dialects called HTML (Hypertext Markup Language), CSS (Cascading Style Sheets), and JavaScript. There are, notwithstanding, various different projects used to "make due" or work with the development of locales that would somehow or another must be

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DEVELOPMENT OF A COLLEGE PLACEMENT WEB SITE USING THE MEAN STACK

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Abstract:
Placements can bring a wide range of benefits and opportunities. Training and management of placement is a crucial part of an education a l institution. Our website with the help of latest technology called "MEAN Stack" which is state das Mongo DB, Express JS, Angular, Node JS and Application program Interface(API) is the heart of our project .We use Angular as front-end and Express JS and Node JS as back-end to our website which improves the performance of our application. The main aim of this application is to provide detail view of students who got placed indifferent companies, details of placement committee of that educational institute, training programs that were conducting, placement statistics, information about the recruiters and some career guidelines. College Placement Guide Website is a static website in which admin can view and download the information about the student Recruitment. The paper presents the implementation details, challenges faced, and the future scope of the website.

1.Introduction:

College placement is a crucial aspect of the student's career. College Placement Guide websit egives the detail information about the students placed in the past few years. Students can take thes ample mock tests in this website based on the different companies under drives section. Admin can login and create them ocktests with exam title, description and few more details. In the about page students can know about the training placement officers information, recruiters information of that college. And in the training section users can know about the training programs,workshops andother technical programs conducted in that college.

2.Related Work:

The current college placement website contains the statistics of placements of that college.It requires more human involvement in adding the data .So it is time consuming process.It is most important to create user friendly interface.Due to system flaws, these errors cause significant maintenance issues and student dropout. Manual labor makes documenting and categorizing extremely tough. These analytical techniques[5] result in complicated administration and high analytical expenses, making the system costly and inefficient.

3.ProposedMethod:

Development of College Placement GuideWebsite:

To develop a college placement website using the MEAN stack, we need to follow the below steps:

Step1:Set up the Development Environment We need to install NodeJS, Mongo DB,and Angular JS. After installing these technologies, weneed to set up the development environment andcreateanew project.

Step2:Design the Database We need to design the data bases chema and createa database using MongoDB. The database[6] should have collections for students, companies, and job openings.

Step3:ImplementtheServer-SideCode

We need to use Express JS to create REST ful APIs that can interact with the database.

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COLLEGE ENQUIRY PROCESS USING CHAT-BOT SYSTEM

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ABSTRACT:
In the earlier days, students had to visit the college to enquire about details like courses, fee structure, admission process and other information about the college, which is a tiresome and long process. This is where we thought of using an intelligent bot delivering the information. College Enquiry Chabot is a web application which aims to provide the information regarding college asked by the user. We use a special Artificial Neural Network(ANN) to classify users message, categorize the user message and then respond to the user accordingly. We use Flask to implement a web application interface as frontend and we train the model using NLP (Natural Language Processing)-NLTK and also we use deep learning concepts like Tensor flow – Keras and Python with ML concepts like pickle.

1.INTRODUCTION:

This is designed using deep learning machine learning concepts. Machine learning focuses on the use of data and algorithm to imitate the way that human learn Deep learning is a subset of machine learning. In simple, terms it just replicates the human brain as all neural networks are connected in brain which exactly is concept of deep learning. It solves complex problems with the help of algorithms and its process.

A Chat bot is a computer program that communicates with humans. A Chat bot is essentially a computer program that mimics human behaviour. An Artificial neural node inspired by neural nodes of human brain, powers a Chat bot that uses AI and machine learning. Chat bots are computer programs that can readily mimic human discussions. IBM, for example provides a machine learning Chat bot that allows businesses to communicate with their customers through IBM Watson Assistant API. Chat bots overly popular in the year 2016.As a resultof implications 2016 has been called "the year of Chat bots". Now a days Chat bot has become a new communication tool.

Various businesses[8] are already adopting Chat bots to swiftly and efficiently respond to frequently asked queries from their clients. Chat bots are used in various industries including customer service, healthcare and e-commerce. These Chat bots have gained their attention due to their ease of use and accessibility.

2.RELATED WORK:

A literature survey is a comprehensive summary of previous research on a topic. The literature review surveys scholarly articles, books, and other sources relevant to a particular area of research. It should give a theoretical base for the research and help you (the author) determine the nature of your research. Prof. Ram Manoj Sharma [2] proposed a college enquiry Chat bot system which has been built by using Artificial Intelligence algorithms. The bot analyses user's query and understands user messages. The system has modules like Online Chat bot, Online Noticeboards etc.

[2]. P. Nikhila, G. Jyothi, K. Monika, Mr. C

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AN EFFICIENT TECHNIQUE FOR ANALYSIS OF MICRO ARRAY IMAGES USING GENEPIX SOFTWARE

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ABSTRACT:

Microarray is very useful and vastly growing technology that helps in analyzing genetic data. Because of the advancement in this field there is lot of genetic data being produced everyday and these data are needed to be interpreted and analyzed properly to get accurate results. With the advancement in computer technologies and software, we now analyze microarray images by computers. There are many open sources as well as commercially available software that help us to analyze microarray images. Microarray image analysis can be divided into three stages-Addressing or Gridding of spots, Segmentation and finally Background and Foreground Intensity Extraction. This paper tries to find out the intensity values of the available microarray images using analysis software on the basis of the above mentioned techniques used and also on the efficiency and ease of use of Genepix software.

Keywords: Image processing, segmentation, Intensity Extraction

1.INTRODUCTION:

The most powerful tool in molecular genetics for biomedical research is Microarray, which allows parallel analysis of the expression level of thousands of genes. The most important aspect in microarray experiment is image analysis. The output of image analysis is a matrix consisting of a measure of intensity of each spot in the image. This measure denotes gene expression ratio (transcription abundance) between the test and control samples for the corresponding gene. The positive expression indicates the over-expression, while negative expression indicates under-expression between the control and treatment genes. The main components in microarray image analysis are localization, segmentation and spot quantification . This paper mainly focuses

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PREDICTION OF DIABETES IN FEMALES OF PIMA INDIAN HERITAGE USING XGB CLASSIFIER AND PERFORMING COMPARATIVE STUDY WITH OTHER CLASSIFICATION ALGORITHMS

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Abstract:
Today, diabetes is a widespread illness that affects millions of people worldwide, with women bearing the brunt of its effects. Modern medical studies have used a variety of cutting-edge technology to diagnose patients and forecast their diseases using clinical data. Machine learning (ML) is one of these technologies, which allows for more precise diagnosis and prediction. This issue is taken into account as a binary classification issue.Algorithms for supervised learning have therefore been employed. We make use of the Kaggle dataset on female Pima Indians with diabetes. Extreme Gradient Boost is referred to as XGBoost. One of the supervised machine learning modules, it supports both classification and regression issues. In our project, we make use of the XGBoost module's XGBClassifier, whichis often used for classification as our project was to predict whether the person is diabetic or not. Along with XGBClassifier we also work with some other classification algorithms like Logistic Regression, Decision Tree Algorithm, Support Vector Machine,K-Nearest Neighbour and perform the comparative study on them based on the accuracyscore, Classification Report, Confusion Matrix and finally concludes the best model for our dataset

1.Introduction:

Diabetes is a condition marked by abnormally high blood sugar (glucose) levels. Heart attack or stroke, blindness, complications during pregnancy, and renal failure are just a few of the significant health issues that diabetes can bring on. One in every nine adult women[9] in the US, or around 15 million women, have diabetes. Due to a number of reasons, women are more likely than males to develop diabetes.

Hormonal variations: Throughout their lifetime, women experience hormonal changes that may influence[10] their chance of acquiring diabetes. For instance, gestational diabetes can occur in pregnant women, increasing their risk of type 2 diabetes in the future. During menopause, women also suffer hormonal changes that may impact their insulin sensitivity and raise their risk of diabetes.

Body Structure: Women tend to have more body fat than men, especially around the hips and thighs. This type of body fat is called "subcutaneous" fat and is less metabolically active than the "visceral" fat that accumulates around the organs, which is more common in men. Visceral fat is associated with insulin resistance and an increased risk of diabetes.

Lifestyle Factors: Women may be more likely to engage in sedentary behaviours, such as sitting for long periods, and may have less physical activity than men. They may also be more likely to consume a diet high in sugar and refined carbohydrates, which can increase the risk of developing diabetes.

Socioeconomic Factors: Women may also be more likely to experience socioeconomic factors that can increase their risk of developing diabetes, such as lower income, lower educational attainment, and less access to healthcare.Conclusively, the exact reasons why women may be more prone to diabetes than men are not fully understood, it is likely a combination of hormonal, metabolic, and

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MALICIOUSURLDETECTIONUSINGMACHINELEARNINGALGORITHMS

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Abstract—Currently,therisko fnetworkinformationinsecurityisincreasingrapidlyinnumber and level of danger. The methods mostly used by hackers to day is to attack end to end technology and exploit human vulnerabilities. These techniques include social engineering, phishing, pharming, etc. One ofthestepsinconducting these attacks is to deceive users with malicious Uniform Resource Locators (URLs). As a results, malicious URL detection is of great interest now a days. There have been several scientific studies showing a number of methods to detect malicious URLs based on machine learning and deep learning techniques. In this paper, we propose a malicious URL detection method usingmachinelearningtechniquesbasedonourproposedURLbehaviorsandattributes.Moreover,bigdatatec hnologyisalsoexploitedtoimprovethecapability of detection malicious URLs based on abnormal behaviors. In short, the proposed detection system consists of a new set of URLs features and behaviors, a machine learning algorithm, and a big data technology. The experimental results show that the proposed URL attributes and behavior can help improve the ability to detect malicious URL significantly. This is suggested tha the proposed system may be considered as an optimized and friendly used solution formalicious URL detection.

Keywords—URL;malicious URL detection; feature extraction; feature selection; Machine learning

1. INTRODUCTION

Uniform Resource Locator (URL) is used torefer to resources on the Internet. In [1], Sahoo etal.presentedaboutthecharacteristicsandtwobasiccomponentsoftheURLas:protocolidentifier, which indicates what protocol to use, and resource name, which specifies the IP addressor the domain name where the resource is located. It can be seen that each URL has a specific structure and format. Attackers often try to change one or more components of the URL's structure to deceive users for spreading their malicious URL. Malicious URLs are known as links that adversely affect users. These URLs will redirect users to resources or pages on which attackers can execute codes on users' computers, redirect users to unwanted sites, malicious website, or other phishing site, or malware download. Malicious URLs can also be hidden in download links that are deemed safe and can spread quickly through file and message sharing in shared networks. Some attack techniques that use malicious URLs include [2, 3, 4]: Drive-by Download, Phishing and Social Engineering, and Spam.

According to statistics presented in [5], in 2019, the attacks using spreading malicious URL technique are ranked first among the 10 most common attack techniques. Especially, according to this statistic, the three main URL spreading techniques, which are malicious URLs, URLs, there are two main trends at present as malicious URL detection based on signs or sets of rules, and malicious URL detection based on behavior analysis techniques[1,2].The method of detecting

malicious URLs based on a set of markers or rules can quickly and accurately detect malicious URLs.

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SECURE EHRSSHARING OF MOBILE CLOUD BASED E- HEALTH SYSTEMS USING BLOCK CHAIN

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Abstract:
Electronic health records(EHRs)are increasingly being stored in mobile cloud environments, which merge mobile technology with cloud computing to make it easier for patients and health care professionals to share medical data. With the help of this cutting-edge strategy, healthcare services are made available along with EHRs and minimal operational costs. This new paradigm does, however, bring up issues with network security and data privacy for e-health systems. A difficult problem is how to ensure high security levels in the mobile cloud while reliably enabling HER sharing among mobile users. Using a mobile cloud platform andthe decentralized interplanetary file system (IPFS), we provide aunique EHRs sharing structur en this study. In particular, we develop a reliable access control system based on smart contracts to enable secure HER sharing between various patients and healthcare professionals. We present a working prototype of an Ethereum blockchain implementation in a mobile app leveraging Amazon cloud computing. The empirical findings demonstrate that our idea offers a practical approach for trustworthy data exchanges on mobile clouds while safeguarding private health data from dangers. When compared to the current data sharing models, the systemevaluation and security analysis show performance gain sinthelight weightaccesscontrol design, minimal network latency, and high levels of security and data privacy.

Keywords: EHR, Ethereum, Blockchain, secure sharing,IPFS, data sharing, smart contracts, decentralization, datauploading.

1.INTRODUCTION:

Using blockchain technology to promote medical and e-health services has recently attracted increasing interest.Blockchainhasproven tohaveenormouspotentialinanumber of e-health areas, includingthe securesharing ofelectronic Health Records (EHRs) and the control of dataaccessamong numerous medical entities. Thus, the implementationof blockchain technology canofferpotentialsolutions tosimplifyhealthcaredeliveryandradicallyalterthehealthcaresector. The introduction of cutting-edge technologies likeMobile Cloud Computing (MCC) and the Internet ofMedicalThings(IoMT)hassignificantlyalteredhowe-healthoperations are conducted in the healthcare sector. People cannow gather their own personal health data at home usingmobile devices (such as smartphones and wearable sensors)andshareitincloudenvironments,whichhealthcareprofessionals can instantly access to review patient recordsand provide prompt medical assistance. Thisclever e-healthservicemakesitpossibleformedical professionalstoremotely monitor patients and give ambulatory care at home,which not only streamlinesthe delivery of healthcare but alsohelps patients financially. Additionally, the availability offullEHRsinthecloudaidsin tracking
patient health andproviding appropriate medical servicesthroughout the course of diagnosis and treatment. Despiteall these wonderful benefits, the trend towards storingEHRs in the cloud also presents security issues that makeitdifficulttobuilde-healthappsthere.Secure EHRexchange between patients and healthcare providers onmobilecloudenvironmentsisoneofthesesecurityconcerns.Withoutpatients'permission,unauthorizedp. arties may get harmful access to EHRs, which has

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PHISHING EMAIL DETECTION USING RCNN MODEL

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Abstract
In the modern world, phishing emails are a widespread hazard that can cause financial losses and steal sensitive data including usernames, passwords, and credit card information. There is a need to deploy an efficient phishing detection technology because the number of phishing emails is rising. Many strategies, tools, and methods have been developed to identify phishing emails. One such technology is an enhanced RCNN with multilevel vectors and an attention mechanism. Following an analysis of the email's structure, phishing content is found using an attention mechanism RCNN model with multilevel vectors. Security has grown to be a top issue for online users as a result of the internet's rapid development. Emails are frequently used to exchange data, including both personal and professionalinformation. The emails can include private data that phishers wish to steal.

INTRODUCTION:

Emails are frequently used to exchange data, including both personal and professional information. The emails can include private data that phishers wish to steal. When the recipient clicks on a link in a phishing email that may contain a link and provides information, that information could be utilised for improper purposes. We use techniques like RCNN with multilevel vectors and attention mechanisms to detect these phishing emails. The phishing email is identified using the techniques listed below:

1) The email structure is first examined, and text features from the email content, work level, and char level are mined.
2) RCNN is used to identify similar patterns from the email.
3) RCNN is used to check the email over multiple layers.

LITERATURE SURVEY:

Email spam classification by support vector machine:

1) The Support Vector Mechanism technique is used in this paper to detect spam emails.
2) The dataset used in this study is described according to information on the Spam Assassin website.

SVM is also regarded as a crucial kernel approach, which is one of the most crucial areas in the theory of machine learning.

4) Intelligent Traffic Control System Using Image Processing Techniques
5) They compared Linear and Gaussian, two widely famous kernels, and used them to solve the email spam detection problem in their paper.
6) Using a well-known and often used standard database, the two models have been suggested, trained, and tested.

Email spam detection using integrated approach of naïve bayes and particle swarm optimization:

1) The Naive Bayes algorithm is a Bayes theorem-based statistical machine learning approach with the capacity to handle big datasets and the qualities of strong independence and probability distribution.
2) In NB, the frequency distribution of the dataset is used to estimate the probability distribution.
3)Eberhart and Kennedy developed the notion of particle swarm optimisation (PSO), which is based on swarm intelligence, in 1995.

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LIP READING USING NEURAL NETWORK AND DEEP LEARNING

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Abstract
Lip reading is a technique to understand words or speech by visual interpretation of face, mouth, and lip movement without the involvement of audio. This task is difficult as people use different dictions and various ways to articulate a speech. This project verifies the use of machine learning by applying deep learning and neural networks to devise an automated lip-reading system. A sub-set of the dataset was trained on two separate CNN architectures. The trained lip reading models were evaluated based on their accuracy to predict words. The best performing model was implemented in a web application for real-time word prediction.
Keywords: Speech recognition, end to end, CNN, LSTM, automated lipreading, and computer

1. Introduction

The interaction quality of contemporary computer vision-based assistance technologies is significantly improved by the ability to use a natural-to-human method ofcommunication. The most common form of human communication is speech. The accuracy and robustness of automatic speech recognition (ASR) systems, on the other hand, are unsatisfactory in many real-worldusage scenarios, such as when driving a car or in a busy area. In these circumstances, the advantage of using visual information about speech (lip-movements) in addition to audio is undeniable and is incorporated in a variety of state-of-the-art systems.

We attempted to use computer vision and machine learning to tackle the issue of automated audio-visual speech recognition in the current study. We created two separate integral (end-to-end) systems employingCNN- based deep neural network architectures for the automatedrecognitionofRussianspeechwitha restricted vocabulary. Also, by training the networks with pictures of speechspectrograms, we attempted to see the challenge of acoustic voice recognition as a purely computer vision issue. For the Russian language, hardly any study has been done in this area. Researchers don't believe there is a ready-made option for creatingsuchsystems.FortrainingNNmodels, therearenorepresentativeopen-accessdatasets that meet the necessary criteria, such as having enough speakers, phone-viseme labelling, a task-appropriate vocabulary size, etc. (Almost no public datasets are available for languages other than English). These elements working together enable us to identify a sizableresearch need.

This study's major objective is to improve automated speech recognition systems' ability to accurately recognise speech in loud environments, which is a crucial challenge.

Lip Detection Process

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FACIAL ATTENDANCE SYSTEM

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ABSTRACT
With a big classroom, it's challenging to manage student attendance practically. There is always a potential that a representative will show up given the extremely large number of pupils in attendance throughout the class. It has been hard to track attendance the old-fashioned way. These methods, however, lack a lot of dependability. The computer system will track kids' attendance and recognize their faces. Using a face recognition model, the administrator will add the students and record their attendance. The model will identify a face in a database of face images if it can be positively identified. The process of identifying faces that can be distinguished as human beings after they have been found in a picture. The administrator may see the attendance as well.
KEYWORDs: Open CV, TensorFlow, Image Quality

INTRODUCTION
In many schools and universities, recording attendance using the traditional technique is a laborious effort. Also, the faculty must personally call out each student's name to record attendance, which could take up to five minutes for the entire session. This takes a lot of time. An essential biometric characteristic that is non-intrusive and simple to acquire is face recognition. Systems that use face recognition are generally unaware of different facial expressions. Verification and face identification are the two categories that make up a face recognition system. Face verification uses a 1:1 matching procedure to compare a face image to a template face image, while face comparison uses a 1: N problem. This system's goal is to create an attendance system that is based on face recognition.

RELATED WORK
2.1Facial Recognition Student Attendance System
The creation of this system aims to digitally replace the outdated method of taking attendance by calling names and keeping handwritten records. The methods now used to take attendance are cumbersome and time-consuming. The manual recording makes it simple to alter attendance data. Proxy attacks can compromise the current biometric systems and the conventional method of taking attendance. Therefore, it is suggested that this article address each of these issues.Today's educational institutions are worried about students' consistent performance. Insufficient attendance is one factorcontributing to the decline in student performance. The most popular techniques to record your attendance are to sign or callthe pupils. It was problematic and took longer. A computer-based student attendance monitoring system that enables the teacher to maintain attendance records is now essential.
2.2 System for managing attendance that uses facial recognition
Face identification is done using a face recognition algorithm, and after that, the image that has been processed is compared to the other photographs in the folder, and attendance is noted and promptly saved in the spreadsheet. This innovative automated technique assists in lessening the workload of individuals when compared to the already-used traditional way. Phases of the proposed research

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THREE LEVEL PASSWORD AUTHENTICATION

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Abstract:
In an organizational network, when the control of resources is given to more than one user, the identity of users must be verified and then granted access to their entitlements. That can be done with the help of a password, as it has long been one of the preferred ways to validate one's identity and relies on one's ability to authenticate oneself by presenting the correct credential.
But as the password is simply text-based, it is very easy for the attacker to get hold of a user's password and impersonate the user and gain access to the organizational resources to which the user is entitled.
So to protect the organizational resources and data from hackers and malicious software, single security authentication is not sufficient enough. Therefore, needs something for secure and user-friendly authentication schemes to overcome this problem. This paper presents a 3-level password authentication scheme to overcome the problem. The three different levels used in the **3-level password authentication scheme** are text password, one-time password (OTP), and image-based password. The main objective is to provide a high level of security to the organization's resources or applications from hackers and secure the resources from unauthorized users.

Keywords: Authentication, Simple Text-based password, three-level authentication, OTP password, Image-based password.

1. Introduction:

Three-level password authentication is a security mechanism that provides a high level of protection for sensitive data and systems of organizations. It involves using three levels of passwords, each with increasing levels of complexity and access privileges.
The purpose of using three-level password authentication is to ensure that only authorized users can access and use critical systems and data. Each level of password provides a different level of access, and the combination of all three passwords provides the highest level of security.
The first level of password is usually a simple password that is easy to remember and is used to access less sensitive data and systems. The second level of password is more complex and is used to access more sensitive data and systems. The third level of password is the most complex and is used to access the most sensitive data and systems.
By requiring three passwords, the system can ensure that only users with the highest authorization level can access and use the most sensitive data and systems. This helps to prevent unauthorized access and reduces the risk of data breaches and other security incidents.
Three-level password authentication is commonly used in government agencies[10], financial institutions, and other organizations that handle sensitive data and systems. It is an effective way to ensure that critical information is protected and only accessible to authorized users.

2. Related work:

In the existing model, only text-based security is used. Where usersuse login and simple text as Passwords for accessing the data of the organizationalsoftware or applications. In which the simple password can be easily cracked by hackers or simply by the common people who are close to

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EVALUATION OF DATA ANALYTICS TOOLS

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ABSTRACT:
The project outlines an overview of the contemporary state of the art and trends in data analysis. Collecting, storing, merging, and sorting enormous amounts of data has been a major challenge for software and hardware facilities. An increasing number of companies and institutions have solved and developed tools for saving and storing tables, documents, or multimedia data. Database structures are a major instrument in prevailing applications. These structures have every day thousands or millions of entries. The analytical tools' objectives are obtaining necessary and useful information from collected data and consequently utilizing them for active control and decision-making. Here in this project, we analyze the data by using three analytics tools such as Tableau, Power BI.
Tableau is a visual analytics platform transforming the way we use data to solve problems-empowering people and organizations to make the most of the data. Power BI is a technology-driven business intelligence tool provided by Microsoft for analyzing and visualizing raw data to present actionable information. The main aim of this contribution is to present some possibilities and tools of data analysis with regard to the availability of final users.

INTRODUCTION :

Data analytics has become increasingly important in modern business operations. With large amounts of data being generated every day, organizations need effective tools to make sense of this data and gain insights that can inform decision-making. Two popular tools for data analytics are Tableau and Power BI. While both tools offer powerful features for data analysis and visualization, they differ in several ways.
Tableau is a data visualization tool that allows users to create interactive dashboards and visualizations from a variety of data sources. It offers a wide range of charts, graphs, and other visualizations that can be easily customized to suit the user's needs. Tableau is known for its ease of use and intuitive interface, which allows users to quickly create and share interactive dashboards with others
Power BI, on the other hand, is a business analytics service that provides interactive visualizations and business intelligence capabilities with an interface simple enough for end users to create their own reports and dashboards. Power BI offers similar features to Tableau, such as data modeling and visualization, but also integrates well with other Microsoft products such as Excel and SharePoint. It is known for its integration capabilities, allowing users to connect to a variety of data sources and use natural language queries to analyze data.
While both Tableau and Power BI offer powerful features for data analysis and visualization, they differ in terms of their user interfaces, integration capabilities, and pricing models. The choice

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COLLEGE WIKIPEDIA – ANDROID APP FOR COLLEGE

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ABSTRACT
Today, mobile learning is a widely used technique because of its many advantages, including the ability to access learning content from any location, the ability to adapt the content to the needs of individual students, and quick feedback. Speech recognition software is used in modern technology to expedite the user input process, saving a substantial amount of time for each process. Students may receive more user-centric information services from a mobile student information system (MSIS) built on mobile computing and context-aware application ideas. This project's goal is to outline a system for giving employees and students pertinent information via a mobile platform. Design/methodology/approach. This project used a design-science methodology, which included surveys to support the system's relevance and the assessment of various system iterations using a mobile system acceptance model (MSAM). Findings-IN comparison to services is high. Originality/Value-There are several mobile systems that give students access to general campus information, and this paper details one of the few evaluated systems that offer this level of personalization.
Keywords: e-dictionary, word search, android-based application, mobile app.

INTRODUCTION:
Smartphone use has increased significantly recently across many facets of modern living. Mobile applications, or apps for short, are actually being incorporated into crucial industries like m-banking, m-payments, m-health, and even military situations to name a few. Additionally, one of the fastest-growing IT industries is thought to be mobile app creation[2]. It is essential to shorten the development time of these apps while also enabling them to operate on a wide range of platforms and hardware due to the intense competition in the mobile app market. The creation of mobile apps is very dissimilar from the creation of conventional desktop and web applications, and it does have its own peculiarities, such as the requirement to work across various platforms.Today, a variety of platforms, including Apple iOS and Google Android, run mobile devices. The development of mobile applications can be done with native, m-site, or cross-platform technologies[3]. The native method makes use of programming languagesesigned specifically for particular mobile platforms, such as Swift for Apple devices and Java and Kolten for Android. This implies that the developed app can only be used on the platform for which it was made. Every mobile platform must be supported for a mobile software to succeed and become widely used. However, using the native method can be challenging because each platform will need its own mobile app[1].

RELATED WORK:
There are several websites available for students regarding the information of the college or institute but there is a need for a mobile application regarding providing information to the students for easy usage. Several existing mobile applications were developed individually based on the platform it is implementing but we can develop the mobile application by using React native for both the iOS and Android.

RESEARCH PROPOSITIONS:
By offering suggestions, the research issue that will be investigated can be addressed and the kinds of data that will be gathered are made moreclear. Additionally, it is beneficial to narrow the focus of the data that

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ARRANGEMENT OF EXAMINATION ROOM BASED ON EXAMINEE PROPORTION

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Abstract
An computerized exam seating association is a way of carrying out the examination with little or no strain for either the students or the invigilators. It is, to simplify the trouble of allocating and seating arrangement for college students. The system allocates invigilator to a particular hall and generates seat for students based on their departments and matriculation numbers Presently, the seating association for the examinations is achieved manually. Initially the examination phase has to collect all pupil exam registration info department clever and year sensible. These information include name, roll no, branch, year, list of topics registered for examination. The administrator Need to count the whole wide variety college students registered. Then he needs to select the rooms and divide the students amongst the ones rooms. After dividing the rooms, he Need to prepare students list for every primarily based on the exam. He also needs to put together the seating association listing for each room based upon the be counted.

KeyWords:
Seating Allocation ,Linear Congruential Generator ,LCG ,Automatic Seating Arrangement, Student Examination.

1. INTRODUCTION

Examination seating arrangement is a main difficulty confronted with the aid of an institution. A university includes a big range of students and school rooms, which makes it difficult for the college government to design seating arrangement manuallyThe proposed solution gives an efficient set of algorithms for exam seating allocation issues.. It also gives the great combination of rooms to be utilized for the examination and dynamically organizes seating based on the orientation of the room and college students. The defined answer encompasses techniques to cope with some commonplace issues like removing college students who are ineligible to write one or greater tests and adding the scholars who're retaking the tests.

The presented gadget is made examiner-friendly such that the consumer can unexpectedly get an ideal seating association primarily based upon the above cases without manually aside from the ineligible college students and rearranging the device. Excel sheets of the study room view are generated automatically along with the room variety and potential of the lecture room. These geared up-to-pass sheets can be revealed and utilized by the examiners.

2. LITERATURE SURVEY

Existing gadgets could be very gradual and inefficient. Report generation is likewise now not an easy challenge in the current scenario. Also if the record is generated then calculations are performed manually which ends in greater mistakes. There are lots of manual paintings concerned with cutting-edge machines and errors in a single element can cause the wrong generation of the page. No proper collection of necessities leads to a huge problem for this gadget. This device is to beautify manual work and also greater energy is wasted to allocate the seating arrangement.

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ECG BASED HEART BEAT CLASSIFICATION AND ARRHYTHMIA DETECTION MACHINE LEARNING

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ABSTRACT:
In our paper, a deep two-dimensional convolutional neural network is used to categorise heartbeats based on electrocardiogram (ECG) information (CNN). Using deep two-dimensional CNN, the proposed model divides ECG signals into five categories: one for normal signals and four for arrhythmias. The web application we are developing allows users to select a picture to be categorised, and the projected class is presented on the web page. ECG signals, which describe the electrical activity of the heart and include different waveforms, are crucial in the diagnosis of cardiac disorders. Visual evaluation of ECG records by skilled cardiologists can reveal anomalies, but routine check recordings may miss arrhythmias. Thus, we suggest a hardware configuration that enables wearables to continuously detect ECG signals.By utilising cutting-edge machine learning techniques, our study seeks to offer a reliable and non-invasive method for identifying heart problems in their early stages.Also, the early detection and diagnosis of heart disorders can be considerably aided by our suggested approach, enabling timely medical care and treatment. The web application we are developing has a user-friendly interface that can be easily used by both medical experts and laypeople alike. Also, a huge dataset was used to train our deep CNN model, guaranteeing its accuracy and dependability in identifying and categorising different types of arrhythmia.

KEYWORDS : electrocardiogram, ECG, heart beat classification, arrhythmia, convolutional neural network, deep learning, web application, non-invasive, wearables, heart diseases, waveform analysis.

1.INTRODUCTION:

With approximately 17.7 million deaths from cardiovascular diseases (CVDs) in 2017 alone, which accounted for 31% of all deaths, CVDs are currently the most prevalent cause of death worldwide. Any unusual deviation from typical cardiac rhythms is referred to as an arrhythmia, a kind of CVD. Due to the Covid epidemic and the scarcity of cardiac doctors, this has grown to be a serious issue. In order to solve this problem, we develop an electrocardiogram (ECG) arrhythmia classification approach using a deep two-dimensional convolutional neural network (CNN). With this method, we divide the ECG into five groups. Four of the categories represent various forms of arrhythmia, while one is normal.

Our objective is to develop a web application that lets users choose an image, and the trained model subsequently classifies it, displaying the anticipated class on a web page. The project's scope and direction are intended to fulfil the growing demand for high-tech medical care while taking into account the limited supply of resources, such as medical professionals and equipment. Our project's importance stems from its potential to reduce cardiac mortality, which are now estimated to be 18.6 million per year. Our approach also helps medical students examine heartbeats without consulting professors or doctors. Background information on the project demonstrates its reliance on the medical community, with ECG being the main component of many medical outcomes for detecting heart and lung problems.

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DFRS – A Deep Learning based Fashion Recommendation System

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Abstract:-
People's focus steadily shifted towards fashion asapopularaestheticexpressionastheirqualityoflifeimproved.Peopleareinevitablydrawntothingsthatare moreaestheticallyappealing. Thishumanproclivityhasresultedinthe evolution of the fashion industry over time. Yet too manyclothing alternatives on e-commerce platforms have createdadditional obstacles for clients in recognising their suitableoutfit. As a result, in this work, we suggested a personalisedFashion Recommender system that creates suggestions forthe user depending on input. Unlike traditional systems thatrely on a user's previous purchases and history, this projectaimstogenerateрecommendationsusinganimageofaproductgivenasinputbytheuser,becausemany timespeoplesee something that they are interested in and tend to look forproducts that are like that. To provide the final suggestions, we employ neural networks to evaluate photos from the DeepFashiondataset.
Keywords: Personalization, Recommender system, fashion, e-commerce, Neural Network.

I. INTRODUCTION

Fashion suggestion systems have grown in popularity in recentyearsase-commerceandinternetbuyinghavegrowninpopularity.Machinelearningalgorithmsareusedinthesesystems to recommend fashion goods to consumers based onpriorpurchases,browsinghistory,andpreferences.Inthispaper, we describe a fashion recommender system that usesdeeplearningtechniquessuchasResNet50andCNNalgorithmstoincreasesuggestionaccuracy.Thesystemistrained on a fashion picture dataset and use transfer learning tofine-tune pre-trained models for the job at hand. The findingsdemonstrate that the system functions effectively, with greataccuracy and precision. We can give users with more tailoredandrelevantsuggestionsbyincorporatingdeeplearningtechniquesintofashionrecommendationsystems,therebyenhancingtheirentirepurchasingexperience.Thisjournalprovides a detailed account of the creation and deployment ofthisfashion recommendersystem,aswellasan assessmentof its performance and possibilities for future enhancements. Inrecentyears,onlineshoppinghasbecomeincreasinglypopular,and the fashion sector is no exception. Because of the ease andaccessibilitythatinternetplatformsprovide,consumersareincreasingly purchasing clothes goods through them. The hugeassortment of fashion goods accessible online, on the otherhand, may often be overwhelming for clients, resulting in adeclineincustomersatisfaction.Asaresult,fashionrecommender systems have been created to give consumerswithtailoredfashionrecommendations.Machinelearningtechniques are used in these systems to analyse user data anddeliverappropriaterecommendations.Deeplearningisabranchofmachinelearningthatmodelsandsolvescomplicatedproblems using artificial neural networks with multiple layers.The various levels of

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PREDICTING CLIMATE DISASTERS WITH MACHINE LEARNING: MITIGATING THE IMPACT OF ANTHROPOGENIC EFFECTS

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Abstract
The increasing frequency and severity of climate disasters are a clear indication of the detrimental impact of anthropogenic activities on the environment. Machine learning has emerged as a promising tool to analyse the complex interactions between various environmental factors and predict potential climate disasters. By training models on vast amounts of historical data, machine learning algorithms can identify patterns and make accurate predictions about future events. However, to truly address the root causes of climate disasters, it is essential to reduce anthropogenic effects by transitioning to more sustainable practices and policies. Only through a concerted effort to curb carbon emissions and promote environmental conservation can we hope to mitigate the devastating effects of climate change. In our paper we ran SVM and Random Forest algorithms on two datasets to estimate the anthropogenic effects on climate.

Key words: climate disasters, SVM, Random Forest, anthropogenic effects

INTRODUCTION

Climate change is an urgent global challenge that requires immediate attention and action. The increasing frequency and severity of climate disasters, such as hurricanes, wildfires, and floods, are a testament to the devastating impact of anthropogenic effects on the environment.In recent years, there has been a growing interest in leveraging machine learning techniques to predict climate disasters and mitigate their impact. In this paper, we present an overview of the current state-of-the-art in machine learning-based climate disaster prediction, and discuss the challenges and opportunities for future research in this field.Specifically, we examine the use of machine learning for predicting various types of climate disasters, including extreme weather events and natural disasters, and discuss how these techniques can be used to inform and guide mitigation efforts. Ultimately, our goal is to highlight the potential of machine learning as a tool for predicting and mitigating the impact of climate disasters, and to inspire further research in this critical areaTo achieve our goal of estimating climate disasters with machine learning, we first collect and pre-process large amountsof historical data on climate and disaster events. We extract relevant features from the data, such as temperature, precipitation, wind speed, and humidity, and use them to train our SVM and Random Forest models. We also incorporate external factors such as population density and land use patterns to capture the impact of anthropogenic effects on climate disasters.Our experimental results show that the SVM and Random Forest models can accurately predict the likelihood and severity of climate disasters. In particular, the Random Forest algorithm outperforms the SVM algorithm in terms of accuracy andstability. Moreover, our analysis reveals that the impact of anthropogenic effects on climate disasters is significant, with population density and land use patterns being the most influential factors.Our approach can have significant practical implications for disaster management and mitigation. By accurately estimating the likelihood and severity of climate disasters, decision-makers can take proactive measures to reduce the impact of these events on human life and property. For

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DNACLASSIFICATION FOR DETECTION OF E. COLIVIRUS INFECTION

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ABSTRACT
E. coli (Escherichia coli) is a type of bacteria that is commonly found in the intestines of humans and animals. Most strains of E. coli are harmless, but some strains can cause illness. An E. coli infection occurs when a person ingests food or water that is contaminated with harmful strains of the bacteria. To overcome the previous problem, we present an efficient system for detecting the presence of the E. coli virus in a DNA sample. An MLP classifier model has been developed using a DNA dataset containing four types of DNA molecules (A, C, G, and T). The dataset is used to train the model, which then is used to classify the DNA sample into E. coli virus or not. The model has been tested and proven to be accurate in identifying the presence or absence of the virus.To make the system easily accessible, a website has been developed using Django Framework. The website allows users to input their DNA samples and get the results of the classification in real-time. Furthermore, the website has been designed with user-friendly features such as a clean interface and simple workflows.The proposed system offers an efficient and accurate way of identifying the presence of the E. coli virus in a DNA sample. The results of the MLP classifier model are used to provide the classification results on the website. The system is easy to use and provides quick results, making it a useful tool for researchers and medical professionals. The system is also useful for educational purposes, allowing students to learn about the technique of virus identification in a DNA sample.
Keywords: E. coli Virus, Deep Learning, Virus classification

1INTRODUCTION Escherichia coli, sometimes known as E. coli, is a species of bacteria that lives in both human and animal intestines. It is a gram-negative, rod-shaped bacterium that plays a significant role in the microbial ecosystem that naturally exists in the human gut. Even while the majority of E. coli strains are helpful to humans and even harmless, some of them can nevertheless infect and sicken people.Contaminated food, drink, person-to-person contact, or exposure to animal excrement are all ways that E. coli can spread. Many symptoms, such as diarrhoea, abdominal pain, fever, and dehydration, can be brought on by infections. In severe cases, renal failure brought on by E. coli infections can be fatal.There are various varieties of E. coli, and each has a unique combination of traits and the capacity to spread disease. Enteric and diarrheal illnesses are brought on by some strains of E. coli known as diarrheagenic E. coli (DEC). Enterohemorrhagic E. coli (EHEC), enteropathogenic E. coli (EPEC), enterotoxigenic E. coli (ETEC), enteroaggregative E. coli (EAEC), and enteroinvasive E. coli are the five major pathotypes that these strains fall under (EIEC).n general, even though E. coli

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HYPERPARAMETER TUNING OF GRAPH CONVOLUTION NETWORKS BASED COLLABORATIVE RECOMMENDERSYSTEMS - A COMPARATIVE STUDY

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ABSTRACT:
With the rapid development of e-commerce and social media platforms, recommender systems have become indispensable tools for many business organizations. They are used in various applications like product suggestions on online e-commerce websites or playlist generators for video and music services. It has the ability to predict whether a particular user would prefer an item or not based on the user's past preferences and explore what they are interested in. Recommendation systems are divided into two types: Collaborative filtering and Content-Based recommendation Systems. Recently, deep learning models are used in recommender systems because of their ability to capture the non-trivial relationship between user and item. Graph Neural Networks (GNN) are a class of deep learning methods designed to perform inference on data described by graphs. NGCF and LightGCN are variants of GNN. These frameworks perform user recommendations with deep learning instead of the traditional matrix factorization.They measure the similarity between the user and item, therefore allowing us to understand how likely it is for the user to like the movie. In this paper, we compare two methods Light GCN and Neural Graph Collaborative Filtering(NGCF) to capture the collaborative signal between users/items.
Keywords: Collaborative filtering, Data Sparsity, Graph Neural Networks, High-orderconnectivity, Recommendation Systems.

INTRODUCTION

Rating prediction is an important task which aims at predicting the user's rating for the items which are not yet rated by the user. Collaborative filtering is a popular recommendation technique in various domains. It predicts the unknown ratings based on the ratings of the similar users and historical data. Sparsity due to cold start problem, where the user/item does not appear during the training process of generating recommendations, is a severe problem of collaborative filtering. To reduce this sparsity and to improve the recommendation accuracy, matrix factorization methods are used. Matrix factorization [1] is an efficient model-based collaborative filtering approach applied in the recommendation systems to address the sparsity problem. It decomposes the rating matrix (user-movie interaction matrix) into two low dimensional rectangular matrices, and a simple dot product is applied to predict the unknown ratings. The conventional matrix factorization methods are not considered to be efficient as they do not capture the user-item interactions entirely as it uses a simple dot product while predicting the rating. Next, various matrix factorization methods [2-7] were proposed to learn the user –iteminteractions by incorporating side information such as user content (like demographic, social relations, trust/untrust etc.,) and item content (like genre, categories, topics etc.,). Deep learning is an advanced learning technique which gained popularity in various domains [8]. Nowadays, lot of research was reported on deep learning-based recommendation systems to overcome the problems of traditional recommendation algorithms because they capture the hidden, non-linear, and non-trivial interactions between the user and item, which helps in a better prediction rate.The two important components of any deep learning based collaborative filtering models –1) embedding, represents the user and items as vector, and 2) interaction, reconstructs the interactions between the user and items based on embeddings [9]. In matrix factorization, the users and items are embedded as vectors and the interaction matrix is constructed by the dot product of these vectors. In deep learning-based m

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Effective movie recommendation based on improved densenet model

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Abstract. In recent times, recommendation systems provide suggestions for users by means of songs, products, movies, books, etc. based on a database. Usually, the movie recommendation system predicts the movies liked by the user based on attributes present in the database. The movie recommendation system is one of the widespread, useful and efficient applications for individuals in watching movies with minimal decision time. Several attempts are made by the researchers in resolving these problems like purchasing books, watching movies, etc. through developing a recommendation system. The majority of recommendation systems fail in addressing data sparsity, cold start issues, and malicious attacks. To overcome the above-stated problems, a new movie recommendation system is developed in this manuscript. Initially, the input data is acquired from Movielens 1M, Movielens 100K, Yahoo Y-I0-10, and Yahoo Y-20-20 databases. Next, the data are rescaled using a min-max normalization technique that helps in handling the outlier efficiently. At last, the desensed data are fed to the improved DenseNet model for a relevant movie recommendation, where the developed model includes a weighting factor and class-balanced loss function for better handling of overfitting risk. Thus, the experimental result indicates that the improved DenseNet model showed reduced by 5 to 10% of error values, and improved by around 2% of f-measure, precision, and recall values related to the conventional models on the Movielens 1M, Movielens 100K, Yahoo Y-10-10, and Yahoo Y-20-20 databases.

Keywords: Deep neural network, DenseNet model, Min-Max normalization technique, movie recommendation, sentiment analysis

1. Introduction

Recently, the recommendation system has become one of the emerging research topics, which learns an individual's preferences for developing effective recommendations [1]. The recommendation systems are implemented in several applications such as electronic-product recommendations, movie recommendations, song recommendations, book recommendations, etc. [2–4]. The purpose of the recommendation systems is to automatically recommend news, web pages, movies, e-commerce products, songs, etc. for individuals based on their historical preferences [5]. In recent times, the movie recommendation gained

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MALWARE DETECTION & PREVENTION USING MACHINELEARNING ALGORITHMS

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Abstract:
Malware is the acronym of Malicious Software. It has become a big threat in today's computing world. The threat is increasing with a greater pace as the use of Internet in our day to day activities is growing extensively. The number of malware creators and websites distributing malware is increasing at an alarming rate which attracts researchers and developers to develop a better security solution for it. Polymorphic malware is a new type of malicious software that is more adaptable than previous generations of viruses. Polymorphic malware constantly modifies its signature traits to avoid being identified by traditional signature-based malware detection models. To identify malicious threats or malware, we used a number of machine learning techniques. Developing an efficient malware detection technique is still an ongoing research. Understanding malware, features of malware, analysis methods and detection techniques are the prerequisites of malware research. In this paper, we have studied a few past research works based on API calls, N-Grams, Opcodes features used in malware detection. A detailed fundamental concept of malware detection is also presented in this paper.

1. Introduction:

The definition of malware or malicious software is as follows. Malicious software is a program designed to intrude and damage a computer system & information without the owner's knowledge and permission, which is a serious threat to the security of computer systems from last few decades. With the fast advancement and development of the web, malware has turned out to be one of the major digital dangers in nowadays.

Antivirus tools are unable to provide the necessary security due to the growing diversity of malware in use today, which leads to the hacking of millions of hosts. However, because to the extensive availability of attacking tools on the Internet, the skills needed for malware production is also becoming less necessary.

In order to evaluate if a particular piece of software or network connection poses a security risk, malware detection modules must analyse data they have gathered and been educated with. Consider a machine learning system that can describe the underlying principles of the patterns it has discovered clearly. Using feedback on how well they performed on earlier tasks and using that information to make improvements, algorithms taught by machine learning systems can enhance their capacity to anticipate.

1.1 Types of Malwares:

Malware comes in many different forms, including viruses, worms, Trojan horses, botnets, rootkits, adware, scareware, spyware, ransomware, backdoors, key loggers, and erroneous security software as well as browser hijacker.

1.) **Virus**:

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CLOSE OBSERVATION TOWARDS CRIME USING SPY CAMERA

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ABSTRACT – In this paper we want to give high level overview of how an android Spy camera app is made. As the name goes, we spy clicking photos or filming without anyone knowing, the app won't show any kind of preview. The Main Goal of This App is to Click Picture or Record the Video from The Back/Front Camera Even If the App Is Closed without anyone knowing. In this app, the user has a setting screen where he/she can select if he/she wants to click photo on duration or photo counts also he/she can decide on a buffer time so that the app will wait the time mentioned by the user before clicking another photo. He/she can also select where to click the photo from the back camera or the front camera. In this app by sending a particular code we can on the camera and similarly by sending the code we can off the camera. There is also a setting where the user can adjust the duration for the video recording and also that the video that will be recorded should be from the front camera or the back camera. Once the photo or video is captured or filmed the user can view the photo/video in the app, they can share or delete the same. once the process is started app will be closed automatically and a notification will be displayed on the phone if the user wants to stop the process manually, he/she can click the notification and stop the process or wait until the process automatically ends as per the conditions selected on the settings page. The Photos or Videos Captured cannot be seen anywhere i.e., in any other apps but this.

KEYWORDS- Spy Camera, Android studio, SQLite

1. INTRODUCTION

As the technology is improving day by day, different ways are used to record the surroundings. We want to make a cost effective spy camera, so we designed a Spy Camera app for Android devices. This app can be used for property security, personal surveillance, photography and many more. This can also be used by intelligence agencies, corporations, or other entities for security purpose. You can make use of this app for removing crimes and corruption in government offices. This application could be a best solution to various problems or situations where wireless surveillance is needed; this application has a huge scope. Spy Camera Application describes a new solution for spying and using android phones without connecting to a recording device. This system uses the android operating system which is currently the most used operating system and also has a great future scope. When it is legally permitted to this system, this app can be useful with multiple features. It can benefit the user in many ways, depending on the situation. Coming to advantages it works even if the app closed and if the screen goes blank. It doesn't need camera application to open. No one knows that the mobile is capturing photos or recording videos even if they unlock the mobile. The app get closed automatically when you click on camera icon in the home screen and start capturing photos, similarly when you click on video icon then the video will start recording. You can mention in the setting that what should be the buffer time between capturing the photos and the duration of the video as mentioned in the abstract. The main difference between our Spy camera app and other camera apps is that you don't need to

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A NOVEL METHOD FOR VERIFYING CERTIFICATES USING BLOCK CHAIN

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Abstract:
In this project to secure academic certificate and for accurate management and to avoid forge certificate we are converting all certificates into digital signatures and these digital signatures will be stored in Blockchain server as this Blockchain server support tamper proof data storage and nobody can hack or alter its data and if by a chance if its data alter then verification get failed at next block storage and user may get intimation about data alter.
In Blockchain technology same transaction data stored at multiple servers with hash code verification and if data alter at one server, then it will be detected from other server as for same data hash code will get different. For example, in Blockchain technology data will be stored at multiple servers and if malicious users alter data at one server, then its hash code will get changed in one server and other servers left unchanged and this changed hash code will be detected at verification time and future malicious user changes can be prevented.
In Blockchain each data will be stored by verifying old hash codes and if old hash codes remain unchanged then data will be considering as original and unchanged and then new transaction data will be appended to Blockchain as new block. For each new data storage all blocks hash code will be verified.

1.Introduction:

Counterfeit academic certificates have been a longstanding issue in the academic community. Not until the Massachusetts Institute of Technology Media Lab released their project of Block-certs, a technique which is mainly implemented by conflating the hash value of local files to the blockchain but remains numerous issues, did an effective technological approach protecting authentic credential certification and reputation appear. Based on blockcerts a series of cryptographic solutions are proposed to resolve the issues above, including, utilizing a multi-signature scheme to ameliorate the authentication of
certificates; exerting a safe revocation mechanism to improve the reliability of certificates revocation; establishing a secure federated identification to confirm the identity of the issuing institution.

1.1 Overview:

The project consists in designing and implementing the system which covered the above solutions. The project also involves a comprehensive evaluation of the system security, and the assessment outcomes provide compelling evidence to prove that implementation is practical, reliable, secured, which might give some hints of important architectural considerations about the security attributes of other blockchain-based systems.In this section, we discuss the implementation from the point of view of system architecture, database architecture. The system architecture and database architecture show how the system is designed from the engineering point of view.The issuing applications are responsible for the main business logic which include the certificates applying, examining, signing and issuing. The issuing applications are designed to merge the hash of the certificate in a Merkle tree and send the Merkle root to Blockchain amidst signing by the majority of community members. Also, the issuing applications involved the revocation of certificate. The issuing applications are responsible for the main business logic which includes the applying for, examining, signing and

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TEXT SUMMARIZATION USING NATURAL LANGUAGE PROCESSING

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ABSTRACT:

The main purpose of the text summary system is to identify the most important information from a given text and present it to end users. Wikipedia articles are provided as an inclusion in the program and a summary of the extracted text is presented by identifying the features of the text and placing the sentences correctly. The text is processed first to make a sentence token and to do the blocking functions. Then we mark the sentences using different aspects of the text. These elements and traditional methods are used to mark sentences. Points are used to separate a sentence into either a summary text or not with the help of a neural network. The user can specify what percentage of the actual text should be in the summary. It is found that striking sentences based on quotations gives the best results.

Keywords: preprocessing, tokens, text rank, text summarization, nlp, extractive, abstractive.

1.INTRODUCTION:

It is really challenging for us to read the complete article or paper due to our hectic schedules. So, we prefer to read summary .In this project we are going to summarize the large text into a short summary which reduces reading time for users. Natural language processing (NLP) is a computer program's ability to understand human language as it is spoken and written - called natural language. It is part of artificial intelligence(AI).Text summarization is the process of filtering important information from a source (or sources) in order to produce an abridged version of a particular user (s) and function (or tasks).Coming to my project details. It is really challenging for us to read the complete article or paper due to our hectic schedules. The proposed framework depends on summarizing the text from the internet, utilizing both morphological elements and semantic data. The length of text data is increasing, and people have less time to read those data. Internet, media, and other data sources have a huge dump of data and hence a system is required for generating easier and short forms of data. So, a tool is required for the users, which would ease the effort for them to read the entire text or matter. Such systems or tools would be beneficial and a great time saver for the users. Hectic schedules made it impossible for everyone to read and access the information from News information, biographical information, or from other journals. Reliable and easier information are needed to be efficient. Summaries enable quick and effective decision-making. The goal is to construct a tool that is effective and generates summaries automatically. In the field of automated thought known as "Natural Language Processing," computers examine, comprehend, and gain value from human language in a beautiful and beneficial way. By implying NLP, designers can arrange and build information to carry out tasks like programmed rundown, interpretation, named element acceptance, relationship production, judgment investigation, discourse acceptance, and point subdivision.

2.LITERATURE SURVEY:

Automated text summarization and the approaches of single document and multiple documents text summarizations have been discussed based on requirements extractive summarization. In Text Summarization:

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COMPUTERIZED FACIAL FEATURES RECOGNITION USING FUNCTION EXTRACTION

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Abstract
Human emotions are spontaneous psycho-emotional states. The lack of a clear link between emotions and facial expressions and the considerable variability makes facial recognition a difficult area of research. Pattern recognition considers features such as histograms of oriented gradients (HOG) and scale-invariant feature transforms (SIFT). These features are extracted from the image according to a manually defined algorithm. In recent years, machine learning (ML) and neural networks (NN) have been used for emotion recognition. This report uses Convolutional Neural Networks (CNN) to extract features from images and detect emotions. We used the Python dlib toolkit to detect and extract 64 key facial landmarks. Training a CNN model using grayscale images from the FER-2013 dataset, he classified utterances into five emotions: happy, sad, neutral, fear, and anger. This article aims to identify basic human emotions. This paper aims to identify basic human emotions . The facial emotions such as happy, sad, angry, fear, surprised, neutral emotions are considered as basic emotions.

1.INTRODUCTION

Facial emotions are important factors in human communication that help to understand the intentions of others. In general, people infer the emotional state of other people, such as joy, sadness and anger, using facial expressions and vocal tones. Facial expressions are one of the main information channels in interpersonal communication. Therefore, it is natural that facial emotion research has gained a lot of attention over the past decade with applications in perceptual and cognitive sciences. Interest in automatic Facial Emotion Recognition (FER) has also been increasing recently with the rapid development of Artificial Intelligent (AI) techniques. They are now used in many applications and their exposure to humans is increasing. To improve Human Computer Interaction (HCI) and make it more natural, machines must be provided with the capability to understand the surrounding environment, especially the intentions of humans. Machines can capture their environment state through cameras and sensors. In recent years, Deep Learning (DL) algorithms have proven to be very successful in capturing environment states. Emotion detection is necessary for machines to better serve their purpose since they deliver information about the inner state of humans. A machine can usea sequence of facial images with DL techniques to determine human emotions.

2. MOTIVATION

AI and machine learning (ML) are frequently used in a variety of fields. They have been applied to data mining to find insurance fraud. Data mining techniques based on clustering were employed in to find trends in stock market data. FER, Electroencephalography (EEG), and spam detection are a few examples of pattern recognition and classification situations where ML algorithms have been particularly useful. Cost-effective, dependable, and quick FER solutions can be provided using ML.

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UTILIZATION OF RESOURCES VIA OVERLAY ROUTING SOURCE NODE AT A SENSIBLE RATES

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Abstract :
Any computer network application places limits on a variety of quality of service (QoS) measures, including jitter, bandwidth, packet loss, and latency. The Internet's best-effort service model prevents it from ensuring these QoS restrictions. At the application layer, overlay networks have shown to be a successful method for addressing various QoS requirements of networking applications. A superior QoS is made possible in softwaredefined overlay networks by introducing the software-defined networking (SDN) paradigm, which enables centralised and effective traffic routing in the overlay networks. The rapidly varying overlay connection QoS characteristics is one of the major challenges in software-defined overlay networks. he current routing algorithms, however, require lengthy route computation times and are therefore unable to adapt to the rapidly varying overlay link QoS features.These routing algorithms are used to satisfy numerous QoS criteria in softwaredefined overlay networks.Furthermore, the size of forwarding tables grows exponentially as the size of overlay networks scales. This is due to the fact that the current routing protocols for ensuring multiple QoS requirements convey data using both the source and destination addresses. As a result, the controller must push a significant number of forwarding table entries via the network, which limits the capacity of the overlay network For meeting various QoS requirements in software-defined overlay networks, we present the effective routing method QROUTE. Because it uses a revolutionary directed acyclic graph (DAG) based technique, QROUTE's control plane routing algorithm has a drastically reduced route computation time
KeyWords: Resource allocation, Overlay Network, Overlay, QoS, Routing, DAG are some related terms

Introduction:

In recent years, overlay routing has been suggested as a practical means of achieving routing features without undergoing arduous standardisation procedures, deploying new routing protocols, or altering the fundamental principles underlying underlay routing. TCP performance over the internet was enhanced via overlay routing, which in this case broke the end-to-end feedback loop into smaller loops. The routing overlay is constructed on top of the current layer. It is used in BGP routing to decrease latency and increase dependability. Here, we will focus on this issue and investigate the bare minimum of underbuilding nodes that must be introduced in order to enhance routing features. The task of improving the routing qualities between a single source and a single destination is not difficult in this work, and determining the ideal number of nodes is straightforward because there are few candidates for the overlay placement.[2]

Related Work:

The use of overlay routing to boost network performance has been supported by numerous studies on the efficacy of various networking topologies and applications. Savage et al. research the question: How good is internet routing from the user's perspective taking round- trip time, packet loss rate, and capacity into consideration? TCP in [4] and [5] .RTT directly affects performance. Hence, splitting a TCP connection into low latency sub-connections enhances the performance of the connection.
In [6] inflated routing patterns over the internet cause true distances between clients to be more than the required number of hops.The usage of overlay routing enhances network performance and routing. In [7], experimental strategies to enhance the network over real-world environments are also evaluated and studied. Overlay routing is also employed in this context.Application layer overlay

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Supervised Dynamic Pattern Evaluation Using Hybrid Fuzzy C-means Clustering for Handling Multi Dimensional Data

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ABSTRACT

Theoretical analysis and scientific illustrations display that MVS is possibly more suitable for written text records than the well-known cosine similarity. Depending on MVS, two requirements functions IR and IV, and their specific clustering techniques, MVSC-IR and MVSC-IV, have been presented. In contrast to other state-of-the-art clustering techniques that use different types of likeness evaluate, on a huge variety of papers data sets and under different assessment analytics, the proposed algorithms display that they could offer significantly improved clustering efficiency.

In this paper we propose to develop efficient and effective clustering algorithm for processing similar type of data items in application framework based on related topics present in processed data sets. Our experimental results show efficient and communication related to application development in real time processes.

KEYWORDS: *Fuzzy C-means Clustering, Datasets, and multi View Point Clustering.*

1. INTRODUCTION

CLUSTERING is one of the most exciting and important topics in information exploration. The aim of clustering is to find intrinsic components in information, and arrange them into meaningful subgroups for further analysis and analysis. There have been many clustering methods released every year. They can be suggested for very unique analysis areas, and developed using absolutely different methods and methods.

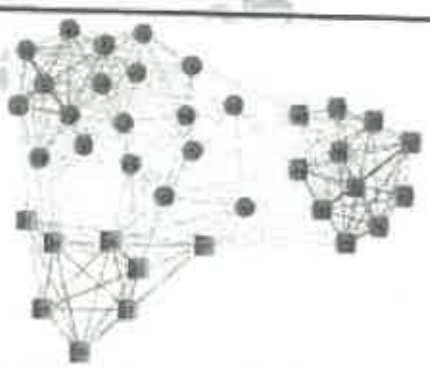

Figure 1. *Data clustering in data analysis*

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STUDENT ONLINE MENTORING SYSTEM

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Abstract:
Mentoring is guiding the mentees using the knowledge of mentor.Educating others with the information we've got and that to accomplished in a digital platform is one of the principal motives of the web mentoring system. Instead of face-to-face meetings, Online Mentoring System (OMS) uses asynchronous, electronic communications to establish and support the relationship between mentor and the mentees using virtual mode. Learners rely on the expertise and experience of mentors to help them graduate in a timely manner and advance on to their career.These are essentially for college students in recent times who're into a web platform and searching afterThe overall performance has turn out to be a whole lot greater hard than usual, in this situation this machine comes handy. This promotes active interaction of students in both circular and their extra circular activities. Faculty mentors play a crucial role in mentoring graduates in their career building.Students and their mentors percentage obligation for making sure effective and profitable mentoring relationships. Both parties have a role to play in the success of mentoring system. In order to achieve this, a rating system is also included using which mentors can easily evaluate and sort the performance of the students and concentrate on those who need their guidance.

Keywords: Guiding, Interaction

1.INTRODUCTION

The Project is about developing an application which can help students in all aspects.However, due to the poor vocational training or career guidance services in college. The colleges have not been playing its role in the transition to the professional world for their students, who consequently cannot meet the demand from industry. Our system will help thestudents as well as faculties of the institute to have a great mentoring experience. It will be very helpful for the type of students who are very shy to interact with faculties and with other peoples and are not able to ask questions or clear doubts through faculty by one to one interaction. The student can post their doubts and complaints to their respective coordinator through the message from anywhere in the world. Mentor can analyse the relative performance of the student and can reply to the queries of the student. Student user has his login for viewing the feedback given by their mentors. All these credentials and feedback information is maintained in the database server. It will also help in better management of the information about the students as well as faculties, all the information will be digitally stored which will make it secure. Therefore, it is considered that college graduates generally cannot meets the demand from Industry. This system mainly enables the mentors to concentrate effectively on each and every student assigned to them. This system gives the details of the students like information of attendance, marks of the students to all the mentors involved in the system, which empower the mentors to give proper guidance and right solution to the problems of each student.

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DUAL ACCESS CONTROL FOR CLOUD-BASED DATA STORAGE AND SHARING USING MULTILEVEL SECURITY

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1.Abstract
The effective cost management of cloud-based data storage has attracted increasing attention from academics and industry in recent years. In order to safeguard user privacy and the confidentiality of the data, service providers must develop secure data storage and sharing techniques because services are given through an open network. to prevent the compromise of sensitive information.
The method that is used the most frequently is encryption. Encrypting data alone, however, falls short of entirely satisfying the true need for data management (for instance, using AES). In order to prevent Economic Denial of Sustainability (EDoS) attacks from being carried out to prevent users from using the service, a robust access control on download requests must also be taken into consideration. The dual access is examined in this article.
Keywords: One time password, denial of sustainability

2.Introduction
Cloud-based storage services have received a lot of interest in present era from both academia and business. Due to its extensive list of advantages, which includes access freedom and the lack of local data administration, it may be widely employed in many Internet-based commercial applications (such as Apple iCloud). Nowadays, a growing number of people and businesses prefer to outsource their data to faraway clouds in order to avoid having to upgrade their local data management facilities or devices. However, one of the biggest barriers preventing Internet users from embracing cloud-based storage services generally may be their concern about breach of security involving outsourced data. Outsourced data may need to be subsequently shared with others in many practical scenarios. , a Dropbox member, might share pictures with her companions. Without employing data encryption, Prasanna must first create a sharing link and then distribute it to others in order to share the images. The sharing link might be viewable from the Dropbox administration level, even while it guarantees some level of access control over unauthorised users (for example, those who are not Prasanna friends) (e.g., administrator could reach the link). In order to protect data security and privacy, it is typically advised to encrypt the data before uploading it to the cloud (which is deployed on an open network). One of the comparable options is to immediately utilise an encryption technique (such as AES) on the outsourced data before uploading to the cloud, so that only authorized cloud users (with legal decryption keys) can access the data after it has been encrypted.
A simple solution to prevent shared photographs from being accessed by system "insiders" is to specify the group of permitted data users before encrypting the data. In other circumstances, nevertheless, Prasanna may have no information about swho the photo receivers/users are going to be. Prasanna might only be aware of attributes related to photo receivers. Traditional public key encryption, like Paillier encryption, cannot be used in this situation since it requires the encryptor to know in advance who the data receiver is. In order to ensure that only a select group of authorised

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ETHEREUM FORTIFIED CROWDFUNDING PLATFORM

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Abstract:
Crowd funding is the practice of raising money from large number of individuals for the people who are in need. The role of blockchain is to define the potential risks of the conventional method of fundraising. A decentralized approach to crowd funding allows us to eliminate all the risks faced by the conventional approach of crowdfunding. Blockchain is used for the safe and secure transfer of items like money, property, contracts, etc. Using smart contracts peer-to-peer transactions are generated. Decentralization is necessary to cut costs(Third party intermediaries) and build trust. Security is the most vital concept, and without it, the technology would be dangerous.

Keywords: crowdfunding; blockchain; smart contracts; peer-topeer network, consensus protocol.

1.INTRODUCTION

The most basic version of blockchain technology is a distributed, decentralised record that tracks the history of a digital item. A blockchain is a legal disruptor since the data on it cannot be modifiedso it is useful in various sectors which includespayments, cybersecurity, and healthcare. Due to its ability to eradicate fraud, lower risk, and increase transparency in a scalable manner, blockchain is a very innovative technology.With social media and crowdfunding platforms, an enormous number of people form an alliance, and crowdfunding strategy encourages their networks to gain more awareness and reach.

In order to persuade contributors to provide money to recipients, fundraising organisations must first establish trust of donors. So, it is considered as the main challenge. Several non-profit organisations employ technology to make it simple for donors to make financial contributions to them. In addition to trust, which is the primary component in obtaining the most funds, technology also plays a significant part in this. A simple method of raising money is through crowdfunding. There is a problem with the existing crowdfunding platforms and the random scams that occur.

These kinds of issues can be avoided by implementing a crowdfunding strategy on blockchain.

By utilising smart contracts, which are essentially blockchain-based, the crowdfunding platform's security is boosted. These may be delivered automatically without a third party, are kept in public databases, and cannot be altered because the blockchain processes all transactions as they occur. As there is no involvement of a third party, the trust and security issues are significantly reduced and the transactions only take place when the conditions stipulated in the agreement are met. Blockchain has made smart contracts decentralised, and as a result, the transactions taking place on crowdfunding platforms won't be governed by centralised entities like banks, etc.

2. LITERATURE REVIEW

Crowdfunding makes it possible for people to raise money for a certain cause. Donations can be made online by anyone who wish to donate. The recipient of the donation is the individual who is in need. The term "centralised crowdfunding system" refers to the current practise of online fundraising.

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INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Arduino Based Smart College Bus And Student Identification System Using RFID

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Abstract—The ever increasing numbers of traffic accidents all over the world are due to diminished driver's alcohol consumption and improper driving. For this reason, developing system that actively monitors the driver's alcohol detection and near by vehicle distance alerting the driver of any insecure driving condition is essential for accident prevention. In this project we continuously monitor the condition of the driver I.E. whether driver is alcohol is consume or not and monitor near by vehicle distance. If near by vehicle is closes to near by vehicle alerts though voice using voice module. If accident occurs detects by using mercury sensor, micro controller reads the data from GPS Module and send accident location though SMS to police station and Hospital.

Keywords—Arduino UNO, Ultrasonic Sensor, Mercury Sensor, Buzzer, GSM Module, GPS Module, RFID Scanner, Alcohol Sensor, Voice Processor, LCD Display etc....

I. INTRODUCTION

- The ever increasing numbers of traffic accidents all over the world are due to diminished driver's alcohol consumption and improper driving. For this reason, developing system that actively monitors the driver's alcohol detection and near by vehicle distance alerting the driver of any insecure driving condition is essential for accident prevention. In this project we continuously monitor the condition of the driver i.e. whether driver is alcohol is consume or not and monitor near by vehicle distance.
- If near by vehicle is closes to near by vehicle alerts though voice using voice module. If accident occurs detects by using mercury sensor, micro controller reads the data from GPS Module and send accident location though SMS to college management, police station and Hospital.

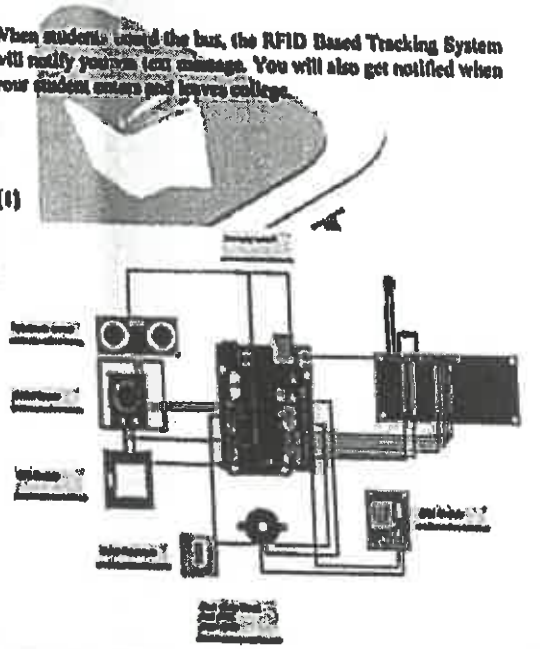

Fig 1:Hardware Design

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INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

SMART ROOM- A GESTURE CONTROLLED TECHNOLOGY

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Abstract

Switches and infrared remote controls are frequently used to operate electrical appliances and devices today. The moment has come to swap out the current control system for a new one. This new system's primary goal is to let users operate electronics with finger and gesture movements. Automating the use and control of household equipment is known as home automation. Lighting, climate, entertainment systems, and appliances can all be managed by an automation system in the home. In this, we suggested using hand gestures to automate home applications and also handle system papers. For those who are physically unable of reaching the switches or who are physically handicapped, this system may also be the ideal option. Due to its practicality and simplicity, gesture-based home automation is growing in popularity. In this project, we suggest a Raspberry Pi Pico microcontroller, Flex Sensor, accelerometer sensor, relay module, MP3 module, and GSM module for a gesture-based home automation system. The Raspberry Pi Pico receives data from the Flex Sensor and Accelerometer Sensor, which detect hand gestures and motions, respectively. The Raspberry Pi Pico deciphers the information and sends instructions to the relay module to control other devices like lights or motors or to the MP3 module to change the level of an audio output. The GSM module can also be used to remotely activate or deactivate a phone using hand gestures.

Keywords: Raspberry Pi Pico, Flex Sensors, Accelerometer Sensor, Relay Modules, GSM Module, MP3 Player are some of the keywords.

Introduction

The Internet of Things (IoT) is the interconnection of physical objects, such as furniture, cars (also known as "connected devices" and "smart devices"), buildings, and other items, which are outfitted with electronics, software, sensors, actuators, and network connectivity to enable data collection and exchange. The Internet of Things (IoT) was referred to as "the infrastructure of the information society" by the Global Standards Initiative on Internet of Things (IoT-GSI) in 2013. The function of automation in modern life and the world economy is becoming more and more important. Engineers work to construct complicated systems for a continuously expanding range of applications and human activities by fusing automated technologies with mathematical and organisational skills.

Since the late 1970s, there has been talk of home automation. But as technology has advanced and smart services have become more accessible, people's expectations for how well a traditional house can be transformed into a smart home have changed significantly. These expectations have affected how people view home automation systems as well as what a home should be able to do and how services should be offered and accessed in a smart home.

Literature Survey

1. J. Chen, Y. Wang, and Y. Xie's article "A Review of Smart Home Applications Based on the Internet of Things" is the first. With a focus on Internet of Things (IoT) technology, this article offers an overview of the fundamental ideas and uses of smart home systems. The writers go over the numerous elements and characteristics of smart home systems, as well as the advantages and disadvantages of putting such systems into practise.
2. X. Li, W. Li, and X. Li, "Smart Homes for Elderly Healthcare—Recent Advances and Research Challenges" This study looks at how smart houses might help older patients receive better treatment. In order to fully realise the potential of smart home healthcare applications, the authors explore the numerous sensors and devices that can be incorporated into a smart home system to monitor and manage health issues. They also identify the major research hurdles that must be overcome.
3. R. Sterritt, R. Curran, and M. Gardiner's "A Survey of Smart Home Automation Systems and Technologies" The numerous smart home automation systems and technologies that are currently on the market are thoroughly reviewed in this study. The authors offer a critical assessment of the state of the art in smart home automation by examining the salient characteristics and capabilities of each system, as well as

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Line Following Robot with Obstacle Avoidance

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ABSTRACT

In order to survey, examine, and improve the movement of vital commodities inside healthcare facilities and other businesses, this paper discusses the line-following robot utilizing Arduino. The suggested system will detect the black trail and move along the ground in its direction. This technology reduces the need for people while also making material transfer easier. This technology focuses on the safe, timely, and efficient delivery of cargo. By adjusting control settings, the paper intends to create controlled robot movement and improve performance. This robot is mostly made to follow a predetermined path. Two IR sensors are utilized in order to find this path and ultrasonic sensor is used to detect the obstacle. These kinds of robots are typically utilized in manufacturing operations with pick-and-place equipment. By following a pre-determined course, this robot transports materials from the intended source to the intended destination. Numerous studies have recently been conducted to enable automation in both industry and healthcare. This robot is designed to deliver necessities like injections and medications. Software and hardware modules make up this essay.

Keywords: Arduino, IR sensors, Ultrasonic sensor pre-determined path.

INTRODUCTION

Our nation's population is growing quickly. A facility like a hospital requires constant watchfulness. The lives of patients can be seriously endangered by inadequate staff members. Additionally, there is the issue of moving products like food, medication, and other equipment from one location to another. In the event of an emergency, a line-following robot can serve as a temporary nurse and help the hospital staff. Additionally, a robot of this type will serve as a delivery robot in the operating room, where doctors may require additional supplies in an emergency. In the modern, technological world, robotics is currently one of the most significant sectors for the creation, manufacture, use, and application of robots. Prior to the 20th century, this industry did not prosper in its development. The usage of robots in many residential, commercial, and military sectors is currently expanding the applications of robotics on a daily basis. A robot is often an electrically powered, electronically controlled piece of machinery with computer programming that can carry out activities automatically in response to sensors. This project's goal is to create a robotic vehicle that follows the light while also avoiding obstacles. It does this by using an LDR module to determine the path to take based on the amount of light hitting it and an ultrasonic sensor to control its movement. In order to carry out the requested action, an Arduino Uno R3 is used. Any obstruction in front of it is detected by an ultrasonic sensor, which then sends an instruction to the Arduino. This robot reaches the destination by avoiding collisions and detecting collisions with obstacle sensors. Any commercial, industrial, medical, or educational lab can use the suggested system.

METHODOLOGY

There are two main portions to the complete circuit diagram. One uses an LDR module to follow a light source, and the other uses an ultrasonic sensor to identify obstacles. The robot first receives 5 volts of power. The robot then got to work after obtaining the light source. The robot will begin to follow the path where the LDR sensor detects the most light.

Any impediment that an ultrasonic sensor runs into will cause it to stop the robot in that spot and begin to echo the pulses. At the specified distance, the triggering pins time is monitored.

The robot will check its left and right tracks, rotate the ultrasonic sensor 180 degrees with the aid of a servo motor, and then proceed along the long-distance path. A stepper motor simultaneously creates the pulse and rotates the web camera with the aid of light; the camera when takes the pictures and movies of the pulse transmits the information to the user through Bluetooth or Wi-fi.

We employed infrared (IR) transmitters and receivers also known as photo diodes in this Arduino based line follower robot. They function as light transmitters and receivers. Infrared radiation is transmitted through IR. Infrared photons strike the white surface, are reflected back, and then gathered by photo diodes, which causes some voltage changes.

Gas Leakage Detection And Alerting System Using Arduino Uno

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Abstract: Commercial Propane and Commercial Butane, both of which contain saturated and unsaturated hydrocarbons, make up LPG. Because of the versatile nature of LPG, it is used for many needs such as domestic fuel, industrial fuel, auto-mobile fuel, illumination, etc. and the demand for LPG is continuously increasing day by day. Liquefied petroleum gas is used widely in homes, industries, and automobiles as fuel because of its desirable properties which include high calorific value, it creates very less smoke, and not causing much harm to the environment. Natural gas is another widely used fuel in homes. Both burn to produce clean energy, however, there is a serious threat of leakage. The gases being 5 times heavier than air do not disperse easily.

Index Terms: Load Cell, MQ-2 Gas Sensor, Fire Sensor, IoT

I.INTRODUCTION

LPG Commercial propane and commercial butane, both saturated hydrocarbons, make up LPG. Due to LPG's adaptability, it may be used for a wide range of applications, including household heating, industrial heating, transportation fuel, lighting, and more. LPG demand is also steadily rising over time. LPG is widely utilized as a fuel in homes, businesses, and automobiles due to its attractive characteristics, which include a high calorific value, minimal smoke production, and low environmental impact. Another fuel that is frequently utilized in homes is natural gas. Both burn to provide clean energy, but the leakage poses a major risk. Since the gases are five times heavier than air, they are difficult to spread and for the detection, monitoring, and warning of a variety of petrol leaks. These days, ordering an LPG cylinder only takes a text message. For their clients, petroleum companies have introduced IVRS (Interactive Voice Response), a user-friendly service. Our system protects from gas leakage; it detects leakage and takes control action over it. It is helpful for us to avoid explosions, and it also has provisions for automatic gas booking. It can be challenging to regularly check the fuel level in a petrol cylinder and determine how much fuel is left over for a reservation. LPG provider In People even neglects to make the reservation in the hectic lives and occupied schedules of today. Our system provides the solution in such circumstances. This is a real-world functional module that is being prototyped. The main goal is to create a low-cost system that can keep track of a particular household's cylinder level (weight) and send out an alarm if the cylinder becomes empty. Being safe and secure is essential right now, so we worked hard to design and create a device for this system that is so small that it may serve as a personal monitoring system. This item will be quite handy for the household. This will prove to be a multi-pronged strategy.

The Raspberry Pi combines a controller and a processor. It is a collection of single-board computers the size of a credit card that is simple to connect to a TV or computer monitor and many other displays, including TFT screens and LCD screens created especially for the Raspberry Pi in a range of sizes. Every computer has an operating system (OS) to direct the machine, and the Raspberry Pi has OSs like "RASPBIAN" and "NOOBS" as well. The Raspberry Pi Foundation, which supports the teaching of basic computer hardware capable of running the Linux operating system, developed these operating systems in the UK. A keyboard, mouse, and monitor can all be connected. Through its Ethernet port, it can also be used as a desktop computer and run its operating system remotely. a group of programmers who are fond of Raspberry Pi hardware.

Internet of Things (IoT) is is the developing and reliable technology that gives each machine with an IP address a unique identity. IoT is adept at facilitating internet-based communication across all universe-existing items so that the systems

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EARLY DETECTION AND PREVENTION OF CARVICAL CANCER

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ABSTRACT

The fourth most common cancer in the world, cervical cancer primarily affects underdeveloped nations. However, an early diagnosis can make it easier to treat the patient's condition clinically. The issue is that there are far less qualified and experienced health cytotechnicians than there are patients who need to be diagnosed. using computers A diagnostic system can greatly aid in improving the accuracy, dependability, speed, and affordability of the diagnosis. To distinguish the cell, the majority of the current techniques require exact image segmentation. Traditional machine learning diagnostic systems operate similarly to cytopathologists who use manually produced morphological criteria to identify a cell's malignancy, such as nucleus area and nucleus-cytoplasm perimeter ratio. However, convolutional neural networks (CNN) are employed in this study. It may enable us to do away with the computationally intensive segmentation and feature selection processes. This study examines the various facets of training the CNN network using a cervical cancer database made available to the public by Herlev Hospital. We also conducted a comparative analysis to determine the best working classifiers, optimizers, and hyperparameters for the dataset.
Keyword: Convolutional Neural Networks

1 INTRODUCTION

The Human Papillomavirus (HPV), which has several forms, is the primary cause of cervical cancer, with the HPV 16 genotype being the most cancer-causing. Nearly 570,000 instances of the fourth most prevalent type of cancer were reported in 2018, with 85% of those cases occurring in developing nations [Ferlay et al. 2019; WHOpress release]. Establishing effective screening programmes can essentially result in a reduction in morbidity and mortality rates, hence preventing deaths brought on by cervical malignant development [Schwaiger et al., 2012]. Due to a shortage of qualified and experienced healthcare personnel and a lack of funding for screening programmes, cervical cancer screening services are extremely rare in underdeveloped nations [Mutyaba et al. 2006]. As a result, the ratio of patients to be diagnosed and treated becomes skewed. Lack of knowledge can also be considered one of the problems, in addition to the issue of the quantity of cytotechnicians. The most popular screening techniques are liquid cytology, colposcopy, visual inspection with acetic acid, and human papillomavirus DNA testing [Brown et al. 2012]. Although expensive and time-consuming, HPV DNA testing has proven to be a highly effective screening tool [Brown et al. 2012]. However, one of the most common cervical cancer tests is the papanicolaou test (Pap test), which involves taking a smear of cervix cells, putting them on a slide, and examining the cells under a microscope. Each slide in a pap-smear procedure can include up to 300,000 cells, which makes it time-consuming and difficult to segment cells because clusters form [Chen et al. 2014]. The morphology—the colour and shape—of the cell nucleus and cytoplasm is used by

Speaking System For Mute People Using HandGestures

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***Abstract*—In our daily lives daily lives are becoming moreand more dependent on human-machine interactions. Physical gestures will make interaction much simpler and give people a more natural way to control machines like computers. In this case, virtual reality is mostly controlled by hand movements. Flex sensors, which are capable of recognising a variety of hand motions, can be utilised to simplify these physical gestures. The ability to manipulate bodily gestures using technology already exists in the real world, but it is relatively expensive. Flex sensors can be used to lower costs and improve the efficiencyof the procedure. An application for gesture recognition using flex sensors is the focus of this study.The character is identified by the Arduino by measuring the flex sensor signals producedby user hand motions. The Arduino C programming language is used to write the application programme code for the Arduino uno.**

***Index Terms*—component, Simulation, Programming**

I. Introduction

It is quite difficult for silent people to communicate with the rest of the world. Communication is quite difficult when the majority of people are not trained in hand sign language.It can be quite difficult to convey a message to strangerswhen a mute person is travelling or speaking with others inan emergency or other situation. In this article, we suggest a smart voice gadget that enables mute people to interact with non-mute people via hand gestures and movements. Beingable to communicate with others can be extremely difficult forsilent persons. Technology has become increasingly essential in recent years in the development of assistive tools that help those who struggle with communication express themselves. One such advancement uses computer vision and machinelearning to recognise hand movements and translate them into spoken language in a speaking system for mute people. In this project, we aim to develop a speaking system for mute people using hand gestures with the Arduino Uno microcontroller. A popular microcontroller board called the Arduino Uno makesit simple to programme and control electronic gadgets. Our system will use a camera module to capture the hand gestures and an Arduino Uno board to process the data and generate speech output. The system will be able to recognize a rangeof hand gestures corresponding to different words or phrases and output them as synthesized speech. With the Arduino Uno microcontroller, our goal in this project is to create a speaking system for mute people. A popular microcontroller board that makes it simple to programme and control electronic items is the Arduino Uno. Our system will record the hand motions using a camera module, and it will interpret the data and produce spoken output using an Arduino Uno board. A variety of hand gestures representing various words or phrases will be recognised by the system, which will then output them as synthesised speech. By giving mute people a more effective way of connecting with others, this speaking system has the potential to significantly improve their quality of life. Also, it can be applied in circumstances where spoken language is impractical or impossible to teach sign language, such as in schools. Our project's ultimate objective is to demonstrate how well the Arduino Uno microcontroller integrates hand gestures into a speaking system for the deaf.

Identify applicable funding agency here. If none, delete this.

II. Literature Survey

A. A Real-Time Sign Language Recognition System Using Convolutional Neural Networks" by Jiabin Liu and Wenbin Liang (2020)

B. Hand Gesture Recognition for Sign Language Interpretation Using Deep Learning" by S. T. Sivakumar and V. Ramakrishnan (2019)

C. "A Real-Time Hand Gesture Recognition System for Sign Language Interpretation" by D. S. Babu, S. S. Rao, and S. S. Satapathy (2019)

III. Existing System

There are various methods in place that let mute people communicate via hand signals. The "SignSpeak" system is one illustration; it makes use of a glove fitted with sensors that track hand gestures and translate them into speech or text. The "Gesture-to-Word" technology, which employs a camera to record hand gestures and converts them into spoken or written words, is another illustration. Users of this systemcan also design unique gestures for words or phrases thatare not already part of its pre-set lexicon. Mobile apps that recognise hand gestures to enable text or voice communicationare another example of existing technologies. Before using these apps to communicate, users are often need to teach the system to identify their individual hand movements. Although these techniques can be useful for those who are unable totalk, they might not be appropriate for everyone. Effectiveuse of these devices may be challenging for some individuals with mobility issues or ailments that restrict their ability to

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Arduino Base Ultrasonic Map -Maker

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ABSTRACT:-

The development of driverless cars, which will benefit the next generation, is supported by this effort. This research is one of those efforts that lays the road for preventing collisions with autonomous vehicles. This work employs a servo motor and RADAR-based ultrasonic sensors (HC-SR04) to identify obstacles at the required distance. This also makes it possible to send an SMS to the person who is interested in learning the object's distance, use a camera to watch the object in real time, and connect an Arduino and Android device via WiFi for monitoring. Defence and systems are two other crucial categories, and these can also be employed for navigation on dark sites.

Keywords— Arduino, UNO, Ultrasonic sensor, Wi-Fi, Navigation, RADAR, HC-SR04, PWM Yield.

I. INTRODUCTION

Radar is a type of electromagnetic sensor that gathers data about an item. Radar's primary job is to locate targets and calculate the distance between the radar and the target. Electromagnetic waves are typically used by radars for detection. The electromagnetic waves are sent and then arrive at the destination, where they are reflected. These waves are received by the receiver, which then processes them. The use of radar is that itIn addition to other uses, it is utilised in the military and for air traffic control. Monitoring the water and the weather. This study examines an Arduino-based radar system. This work makes use of technology without human involvement, making use of its capacity to sense the local atmospheres. This might significantly reduce casualties because it is software-focused and, in comparison, could make less mistakes with humans. This accident reduction will eventually result in less traffic and congestion, which may be considered a potential benefit of this system.

II. RELATED WORKS

The suggested configuration includes a servomotor and an ultrasonic sensor (HC-SSR04). The Arduino board limits the mixture so that it can recognise the distance between a piece of content and the sensor. The materials chosen for the things to approve the plan activity in this work are wood, wipe, and aluminium [1]. The test also tested the LCD's presentation, its adjustable brightness, and the precision of the dislodged distance compared to the actual item distance [2, 6]. In this work, an ultrasonic sensor and servo motor are used to construct an automation context that runs on an Arduino board, the instant that a person or object moves.

The HC-SR04 ultrasonic sensor recognises or detects the person approaching the entryway and sends a message to the Arduino microcontroller, which instructs the servo engine to open the door as a result [3]. The job suggests a cautious leaving assistance framework in which no remote is used to manage the movements of the robot vehicle, such as raising an alert or stopping wheels. It carefully observes obstructions in its path through the sensors, avoids them, and makes a decision based on the internal code that was written for this purpose.

The generation and locating capabilities of the IC MC33794 and ultrasonic sensors form the foundation of the system's basic operation. The MC33794 creates a weak electric field and uses input to determine whether objects entering a non-contact-based system are present [5]. The evaluation of the self-sufficient system reveals that it can shift positions, is capable of avoiding collisions, and is suitable for avoiding obstructions. It is obvious that more functionality can be added to this plan to execute various tasks with essentially no human intervention. Using an IR collector and a remote regulator, the robot was finally designed to be distance controlled [6]. An Android smartphone is used to operate the Bluetooth-controlled vehicle instead of other methods including catches, motion, etc. It is quite simple to operate; all that is needed to move the car forward, backward, left, or right is to hit the contact button on the Android phone. In this case, the Bluetooth module installed in the car is used as a beneficiary and the Android phone is used as a transmitting device.

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Smart Approach for E-Health Monitoring System

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Abstract
E-Health monitoring technologies have developed quickly in recent decades to become a workable alternative for monitoring patients in intelligent environments. The main goal of e-health monitoring systems is to provide timely e-health services that meet patients' actual and perceived needs. The monitoring devices record and relay the significant signal parameters of
Keywords: ECG Sensor, MQ-9 Sensor, Load Cell, MAX 30105, Ultrasonic Sensor, IR Sensor, Accelerometer.

heartbeat, blood pressure, and body temperature. A service's quality can be used to gauge or describe how well it performs overall. To enhance the quality of the service, we provide a unique network model of E-Health monitoring in this research. A set of numerical values is offered in the suggested schemes to characterize the realistic system performance.

I. INTRODUCTION

The healthcare sector has entered a digital revolution, with technology invading every process. The concept of digital health or e-health refers to the use of ICTS in healthcare, equipping it with state-of-the-art resources to ensure more efficient management, optimized diagnosis, and better patient care. Was born. This includes innovations in all areas, including doctor-patient communication, research, and hospital management. The eHealth industry is on the rise. According to data portal Statista, US$ 14.6 billion was invested worldwide in 2018, an increase of 1200% from 2010. Interest in eHealth is growing among World Health Organization (WHO) Member States, with 58% implementing specific strategies to digitize health. Today the Internet has become one of the most important parts of our daily lives. Tailored to the way individuals live, work, play and learn. The Internet serves as a tool for many purposes including education, finance, business, industry, leisure, social networking, and shopping. The upcoming new megatrend of the Internet is IoT. With IoT, you can visualize a world where multiple objects collect, communicate, and exchange data over personal network protocols or public networks. Interconnected objects periodically collect data, analyze and initiate necessary actions, and provide an intelligent network of associations for analysis, design, and decision-making. This is the world of the Internet of Things. IoT is primarily seen as the victimization of connecting objects to the Internet and connecting them for management or remote monitoring of these objects. But the definition of IoT is the creation of wonderful invisible networks that can be detected, controlled, and programmed. IoT-based products include embedded technologies that enable them to exchange information with each other and with the Internet, and it is estimated that by 2020 there will be between 8 billion and 50 billion connected devices. increase. When these devices come online, they offer a better lifestyle, create safer and more engaged communities, and revolutionize healthcare. In low- and middle-income countries, the number of people with chronic diseases is increasing due to various risk factors such as nutritional imbalance and lack of exercise. The WHO reports that 4.9 million people die from cancer as a result of snuff use, 2.6 million die from obese couples, 4.4 million die from high cholesterol and 7.1 million die from hypertension. Chronic diseases are highly variable in their manifestations, course, and For several years, standard measurements of glucose levels, pressure levels, and heart rate have been calculated in specialized health centers. There are various foot pods that give you vital signs like cuffs, glucometers, and heart rate monitors. Daily readings are sent to a doctor, who can suggest medications and exercise routines improve quality of life and overcome such ailments. The Internet of Things applied to patient care and monitoring is becoming more popular in the healthcare sector, aiming to improve the living standards of individuals. An Arduino is a programmable device that can sense and interact with its environment. Combining IoT with Arduino is a new approach to bringing IoT into patient health monitoring systems. The overall concept of IoT is based on sensors, gateways, and wireless networks that allow users to communicate and access information. IoT further guarantees health awareness. As the saying goes, "Health is Wealth", harnessing innovation for better well-being is exponentially important. Arduino Uno collects information from sensors and sends it to the IoT website.

II. RELATED WORK

A portable mobile medical monitoring system with physiological sensors, transmission channels, and processing capabilities has been proposed by Liang et al. For ongoing medical health monitoring. An electronic patch using entirely new optical biomedical sensors, microelectronics, radio-frequency communication, and a battery embedded in a three-dimensional hydrocolloid polymer has been developed for wearable health-monitoring systems. The electronic patch measures 88mm x 60mm and is 3mm thick. Pulse and oxygen saturation are also measured with an electronic patch. Ten et al. We reviewed recent advances in evaluating portable energy

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ELECTRONIC NOTICE BOARD (ENB) FOR FACULTY COMMUNITY

Mrs. K. Manasa Lakshmi, G. Pravallika, Shaik. Ameer Hamza, B. Manikanta,

U. Surendra Babu

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Abstract

The Internet of Things (IOT) is a network of physical "things" or objects that incorporate integrated technology to interface and sense their internal states or the external environment. Automation is the most frequently misspelt term in the realm of electronics. The desire for automation sparked various revolutions within current technologies. A notice board could be an important feature in any establishment or public location such as bus stops, railway stations, colleges, malls, and so on. Sticking out several notices every day might be a difficult process. This message display requires the attention of a distinct individual. This project is about a high-tech wireless notice board. The Internet is used in IOT-based Web Controlled Notice Boards to wirelessly deliver messages from the browser to the display. A local web server is constructed, which might be a worldwide server accessible via the internet. The PIC microcontroller uses an LED matrix to display the message and a flask to receive the message over the network. When the microcontroller receives a wireless message from the GSM module, it displays the message on the LED matrix. The Internet of Things (IOT) belief system can be viewed as an extraordinarily distinct and radically distributed networked system comprised of a huge number of distinguishable smart devices. These objects can communicate and interact with one another, as well as with end users and other system aspects. The use of small, cheap, and flexible computer hardware that allows end-user programming has grown prevalent in the Internet of Things era. One of them is the PIC microcontroller, a fully adaptable and programmable tiny computer board. Relative examination of its essential components and comparisons with some of the already available IOT prototype platforms have revealed that, despite a few drawbacks, the PIC microcontroller remains a modest with its effective utilization in a wide range of research applications in IOT vision.

Keywords: LED Matrix, GSM Modem, SPI, and PIC Microcontroller.

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DWT AND SIDWT METHODS FOR FUSION OF CT AND MRI MEDICAL IMAGE MODALITIES

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Abstract

The modalities of various medical images give only limited details corresponding to soft details like muscles or hard details like bones or skull, etc. Hence using a single modality, the prediction of diseases limits the diagnosis capability. This further results in compromise of accuracy. In the case of images, fusion methods enhance the accuracy by merging multimodality medical images like CT, MRI, PET, etc. This paper details about DWT and SIDWT techniques for fusion of images. In these techniques, wavelet transforms are used to cobineCT and MRI images. The DWT and SIDWT techniques are used with maximum and saliency features. The improvement in PSNR is atleast by 1%, MSE by 5.9%, Entropy by 29.37%, standarad deviation by 29.86% and mutual information by 11.8% when compared with input images.

METHODS:DWT and SIDWT

FINDINGS: The improvement in PSNR is atleast by 1%, MSE by 5.9%, Entropy by 29.37%, standard deviation by 29.86% and mutual information by 11.8% when compared with input images.

NOVELTY: fusion of images from different molarities.

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POWER SHOE: PIEZOELECTRIC WIRELESS POWER TRANSFER – A MOBILE CHARGING TECHNIQUE

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Abstract:

When a person walks, pressure is wielded on the ground and this pressure can be converted into electrical energy and it can be used to power electronic bias. In this paper a Mobile charging system is designed. A piezo electric creator is placedin the shoe. The power that's generated by piezo electric creator when a person walks is transferred tothe device by using amid-range wireless power transfer(WPT) which is a Resonance coupling fashion.

Keywords: Piezo electric creator, Wireless power transfer(WPT), Resonance, and Mobile charging.

INTRODUCTION

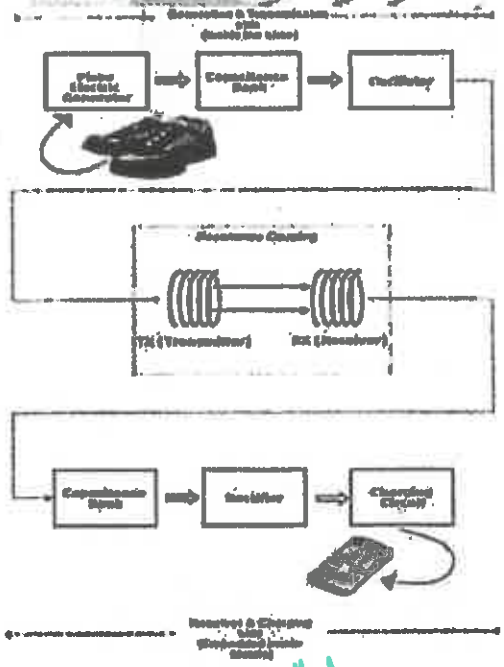
In the recent times there has been an adding interestin exploration and development of advanced smart phone technology. But as technology evolves so are the problems associated with it, and one amongthose is the fast draining of battery. nearly every smartphone stoner wishes he'd more battery life. Now, imagine your phone getting charged where ever you go. This is possible by Piezo electric wireless power transfer mobile charging fashion.The keys to this fashion are the piezoelectricity and Wireless power transfer(WTP).

Harvesting mechanical energy from mortal stir is an seductive approach for carrying clean and sustainable electric energy(1). Piezoelectricity is electrical energy produced from mechanical pressure(similar as walking, running). When pressure is applied to an object, a negative charge isproduced on the expanded side and a positive charge on the compressed side of the piezoelectric demitasse. Once the pressure is relieved, electrical current overflows across the material. Wireless power or wireless energy transmission is the transmission of electrical energy from a Power source(piezoelectric Power) to a cargo(similar as any electrical device) without any physical connector similar as cables or operators.Energy is gathered

II. DESIGN

The Design consists of two units. Generation- transmission unit and receiver- charging unit. The Generation

- Transmission unit side consists of the Piezo electric creator, capacitance bank, oscillator, and transmitterTX unit. This unit is integrated inside the shoe. Fig. 1 shows the design of the system.



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INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

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"Automatic Pill Reminder & Dispenser"

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DVR & Dr. HS MIC College of Technology

Abstract— In today's life, human beings face difficulty to keep in mind the medicines they required to take. This project proposes a model of automatic medicine reminder and apothecary system. This system can relieve unevenness in taking recommended dosage of pills on time prescribed by the doctor and switch from ways primarily reliant with the memory of the human being insignificant regulation, hence people can be freed doing wrong things due to human error like taking pill at different time with incorrect dosage. Various medicine boxes exist in the market. This system sends message to care taker person using G.S.M module. An Alarm will be ringing until we take the medication from the reminded time. Medicine name, medicine dosage, time to take medicine will be read out by the speaker as well sent as a message to the care taker. LED light will be glowing to intimate which particular medicine to take in an order. By using push buttons, we control the intake of medicines. The proposed medicine box would help people who are under medication mainly for old persons to take the medicine on-time without forgetting. A person's life can be saved by this system. Human effort can also be decreased by this health alert and medicine reminder.

Keywords: Arduino Uno , Arduino Mega, G.S.M module, Stepper Motor, C language

I. INTRODUCTION

Now a days, monitoring healthcare by 24x7 and apothecary services needs a large cost and manpower. This added with the intrinsic absentmindedness of human being can result in severe flaws, frequently leading to carelessness, dangerous situations and depression. Often we cannot understand the damage we impose on our body by not taking medicines on time, putting off intake or leaving in halfway on the whole, or wrongly taking the wrong quantity. Some of the key areas have been aided by automation and technology to eliminate human fault.

A preferred level of efficiency can be attained by taking medicines on time. This is as yet not seen as a zone which could be facilitated via computerization and present day innovation. The proposed medication update and gadget incorporates few compartments for holding distinctive sorts of drugs, for example, tablets containers and so on.

The ideal opportunity for the following pill is shown in a LCD screen and messages are created when the time comes to, alongside LED flickering implying which compartment to open. At the point when a compartment is opened by the patient, this is identified by a sensor and light is reset, alert gets napped. Regular medication containers could be updated into a programmed multi-pill update and gadget for simplicity of activity and ease of use. The proposed model of medicine box – an automated medicine reminder is designed with the help of a micro controller, This micro controller is used to keep track of when a patient should take his/her pills.

All patients face difficulty to adhere to the prescribed medication plan. This is particularly tough for elder people. Medication adherence needs a healthy connection between the patient and the medicine prescriber. The useful medical prescription should have i.e. the management plan, future advantages unfavourable effect and expenses. Elder persons are not adhering to medications commonly. The primary reasons differ among patients [1]. Automatically dispensing the pills is used where the patients will get the pills out of the storage compartment. Twelve storage compartments are kept vertically with pre-limited medicine. It has pills to be taken for 24 hours automatically the pills will the dispensed and the patient will have the pills, once it is dispensed.

Under Ground Mine Air Quality Pollution Based On Iot Technology

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Abstract

The level of pollution is increasingrapidly due to factors like industries, urbanization, increasing in population, vehicle use which can affect human health.

IOT Based Air Pollution Monitoring System is used to monitor the Air Quality over a web server using the Internet. It will trigger an alarm when the air qualitygoes down beyond a certain level, meanswhen there are enough harmful gasespresent in the air like CO2, smoke, alcohol, benzene, NH3 and NOx. It will show the air quality in PPM on the LCD and as well as on webpage so that air pollution can be monitored very easily. The system uses MQ135 and MQ6 sensorfor monitoring Air Quality as it detects most harmful gases and can measure their amount accurately.

Keywords: Arduino, Underground coal mines, Internet of things, Mine environment index, Principal component analysis

Introduction

The harsh and confined working conditions in underground coal mines (UCMs) have led to the listing of the mining industry as the most dangerous profession. In recent years, the adoption of sophisticated regulations has occurred; yet hundreds of miners lose their lives every year.According to the Mine Safety and Health Administration (MSHA), faulty equipment, negligence of labor towards explosions, structure failure, and gas accumulation are the most common causes of underground mine accidents. During the economic year of 2014, in the salt range coal mine inPunjab, Pakistan, more than 35% of accidents occurred due to the accumulationof toxic gases. Therefore, for the safety of workers and the mine itself, it is extremely important to monitor the mine environment continuously and accurately.

In recent years, advancements in the fields of wireless sensor network (WSNs), radio

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IOT Based Crop Protection System from Animals

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ABSTRACT:

The main aim of this project is to protect the crops from birds and wild animal attacks.The most essential need for all living things is food. Agriculture is the primary source of our food, either directly or indirectly. The security of the agricultural land is crucial today. Animals and birds frequently destroy crops on farms, resulting in significant losses for farmers. Farmers deal with a new kind of issue every day. The main issue with agriculture is birds because they consume crops when they fall on them. Farmers are unable to defend their fields for a full day.

A bird and animal detection system has been created to identify the presence of both birds and animals in order to address this issue. without injury, issues a warning and directs the animal. The device is set up to scan the entire area continually for any birds or other animals.

Animals and birds can hear at particular frequencies. A special logic is used to estimate the annoyance frequency at dawn and dusk while birds are eating rice seeds, ragi crops, maize, wheat, etc. from the crops. In order to irritate birds and flay outside the field, we can produce a loud noise. We can lessen the issue that affects agriculture the most by employing this concept.

A motion detector, an electrical device that uses a sensor to detect nearby motion, is used in this circuit. A system that automates a process or alerts a user to motion in a space frequently includes such a gadget as a part. PIR sensor, power supply, buzzer, resistor, and transistor are the circuit's primary components.

***Index terms*- PIR Sensor, Microcontroller, LCD Display, APR Voice Player , MATLAB, GPS Module, GSM Module**

INTRODUCTION

The economy's most important industry is agriculture, and farmers must overcome many obstacles to ensure strong agricultural harvests. The harm that birds and other wild animals do to farmers' crops is one of their biggest problems. Physical barriers and chemical repellents are two common means of crop protection, however they are not always efficient and can be costly.

An IoT-based crop protection system has been created to solve this issue and provides farmers with a practical and affordable solution. To identify and stop bird and wild animal attacks on crops, the system combines sensor technology with deterrents and video technology.

Infrared, motion, and vibration sensors are all utilised in the system to detect the presence of birds and other animals. The device generates deterrents like ultrasonic sound and flashing lights to frighten the intruders away once the sensors identify them. The system also has a camera that records photographs of the intruders, allowing for the identification of the species and the patterns of behaviour.

Machine learning techniques are used to examine the data gathered from the sensors and camera in order to find patterns in the behaviour of birds and other animals. Improved crop protection techniques can be created using the analysis to stop more attacks.

IoT-based crop protection system provides farmers with a complete way to safeguard their crops against attacks from birds and other wild animals. The system is suitable for farmers of all sizes because it is made to be affordable, effective, and simple to operate.

The system employs a range of sensor technologies, including infrared, motion detection, and vibration sensors, to find animals and birds. For optimal coverage, these sensors can be installed on and around the farm.

Deterrents: When the sensors pick up the presence of animals or birds, the system triggers deterrents such flashing lights, ultrasonic sound, and water sprays to frighten them away.

The Animals and birds can be startled by ultrasonic sound and flashing lights without suffering any harm. Technology utilising a camera: The system has a camera that takes pictures of intruders. The camera may be used to recognise different bird and animal species as well as their behavioural patterns. Crop protection methods can be developed using the information gathered by the camera.

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Face Spoof Detection Using Color Texture Analysis

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Abstract

In modern technology, face recognition system has received great attention. Several desktop, web and mobile applications make use of face recognition for security purpose. A major point of concern is the ability of the face recognition system to prevent an authorised person from having access to the application. Face spoofing through pictures and videos often threatens the system module of a face recognition system by disguising as a real image. A detection technique for face spoofing attack must be such which could be relied on against different mode of attacks. A novel approach to detect spoofed images needs to be developed to reduce and eradicate the effects of spoofing. Several researchers have proposed detection techniques. Some of these past attempts have been reviewed in this paper. I propose in this study, an ensemble machine learning approach for detecting face spoofing. Random forest algorithm an ensemble learning and neural network were used for face spoofing detection. Neural network gave a better classification result.

Keywords: Random Forest, Ensemble learning, Neural networks

I INTRODUCTION

One of the emerging technologies is Biometrics. This is a means of access control through identity validation either via thumbprint, iris and facial recognition. This technology has gained more popularity and acceptability in information technology security, medicine, finance, criminal detection and investigation. In facial recognition, one of the major threats is facial spoofing. Facial spoofing refers to a process where a user's image is deceptively used to gain biometric access. Hackers frequently use a phony face in front of the camera to get around a facial biometric system. The majority of facial recognition technologies are vulnerable to spoofing.

Face spoofing has overtime discouraged the acceptability of facial biometrics. New facial spoofing techniques spring up every time even as anti-spoofing techniques are been discovered. It is of great value to the research world as different people have lost valuable information as a result of spoofing activities.

A novel approach to answer the above questions is proposed. This proposed methodology makes use of the Random Forest and neural network for detecting facial spoofing.

The information technology improves daily with different online applications being created. Biometrics technology is one of the most adopted approaches for login validation. This proposed approach is tested with a dataset of face spoofing activities.

The machine learning model suggested in this literature was applied to the dataset of face spoofing records. I acknowledge that the dataset used is a secondary data. It is also assumed that at the time of downloading the dataset and compiling the report the values are believed to be real and correct.

II LITRETURE SURVY

Face spoofing attack is a topic of common interest in Cybersecurity because it is a threat to biometric technology. The state of art relating to spoofing detection and prevention will be reviewed. suggested a compact learning model for detecting facial spoofing. The authors proposed a double channel neural architecture for the exploitation of both deep and wide features in the detection of face spoofing. Convolutional Neural Network was adopted as the deep

Learning Architecures was proposed for Face Liveness Detection. They used two approaches. The first approach was a nonlinear anisotropic diffusion which relied on a

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AUTONOMOUS LAWN MOWER ROBOTIC CONTROLLER DESIGN AND IMPLEMENTATION

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Abstract: *The goal this work is to create and test a behavior-based lawn mower robot controller that is capable of autonomously cutting grass on playgrounds and lawns. The "sense-act" strategy is used by the controller to operate autonomously in a dynamic, unstructured, and unfamiliar environment. The Motor Schema architecture is used to implement the controller, which uses the cooperative coordination method and continuous response encoding for behaviour coordination. A collection of behaviours that are running simultaneously carry out the mowing procedure. Obstacles are found and avoided using sonar ranging. Shaft and visual odometry are combined with the Global Positioning System (GPS) for local positioning, while GPS is used for global positioning.. Optocouple sensors and a camera are used to identify a grassy area.*

Index Terms: *Arduino UNO,L239D Motor Driver Shield, UV Sensor, Grass cutter.*

I.INTRODUCTION

To be able to complete the necessarytask in an outdoor environment, which is frequently unpredictable and dynamic, robot controllers use a behavior-based approach. The traditional strategy for mobile robots, or the hierarchal strategy, depends on ambiguous symbolic information on the global model. According to this approach, the world shouldn't be chaotic and dynamic, which is only likely in enclosed, secure environments with unchanging objects. The controller developed using this technology sequentially processes the environmental data to identify the appropriate actions. In addition, generating the environment map requires a lot of processing power and long-term memory (LTM).By employing the sense-act paradigm in parallel, a behavior-based controller eliminates all of these flaws,while dispensing with any reliance on outside information.

Robotic lawn mowers are still in their infancy, therefore it will take a lot of research to find out how to mow lawns on their own. The authors of proposed a thoughts for mowing chores were not included in the mobile robot design. Further not considered are local positioning, static and dynamic obstacle detection, and obstacle avoidance. Disregarding autonomy while using remote monitoring and human control also demonstrates a lack of intelligence. The authors of suggested an ideal route for a mobile robot to follow, but they did not grant the robot autonomy to navigate through a field of grass. Robots must first traverse boundaries in order to carry out navigational tasks. Moreover, an obstacle avoidance algorithm would only be effective against static obstacles—not against moving ones. The fundamental idea inA mobile robot concept was discussed without any simulation or implementation data. A hierarchal mower architecture was used in needing boundary information for fields with a lot of memory and no concurrency. The localization of the robot is difficult without both global and local location.

II. DESIGN METHODOLOGY

The five concurrently operating behaviours that make up the intended controller. These behaviours will react properly to environmental inputs by changing the robot's motor activities. The robot immediately begins to rove around the workstation, as is typical of a robot. Until it detects an obstruction or locates the target, the robot keeps travelling in the same direction. The robot employs behaviour to avoid obstacles after using sonar ranger to identify their presence. It keeps looking for the target, which is a grassy pitch, and as it locates it, it begins to go in that direction. By employing the Blob Finder algorithm and a camera, the goal is found by looking for a green colour field. When it achieves the

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INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

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Iot Based Surveillance And Monitoring System For Child Stuck Inside The Car

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Abstract: The goal of this project is to create an IoT-based surveillance and monitoring system for the safety of a child or pet in a car. It can be used to locate a baby who has been left or trapped inside a vehicle. It is also capable of detecting motion performed by a person in a vehicle. The IR Sensor detects living organisms inside the car cabin by detecting infrared radiation waves. Using the DHT11, MAX30102, and MQ 135 this project monitors the temperature, pulse, and other toxic gases released inside the car. We are using a MEMS sensor to detect whether the baby has fallen out of the baby cradle. we can control the glasses of the car by using the servo motor. The WI-FI (ESP8266) module uploads all sensor values to THINGSPEAK. The Arduino Mega 2560 (AT Mega 2560) microcontroller. This system can also be used to intentionally leave children in the car. The sensors are the project's beating heart. We can monitor the baby's condition inside the car because all sensor values are uploaded to THINGSPEAK. If an unwelcome event occurs, we can use the servo motor to control the car's glass. Apart from the smart phone application, this System also has a Buzzer as an alternative to a security alarm and requested immediate assistance from the people in the surrounding area. If their parents leave, the proposed system will monitor the children, which can be installed and used for real.

Index Terms: ARDUINO Mega 2560, ESP8266, DHT11, MAX30105, MEMS, MQ135-Gas Sensor, THING SPEAK, IoT

I.INTRODUCTION

Many scientists around the world have reported on cases involving the death of a child in a vehicle. It happens almost every year as a result of parents' negligence in leaving their children alone in a car. Tragic events occur on a regular basis, making everyone fearful and concerned. When a driver arrives safely at their destination, they may forget or overlook the presence of children in the vehicle due to his hasty exit from the vehicle. A baby is vulnerable to dehydration, which can result in coma or, in the worst-case scenario, death. To prevent incidents like this from occurring, a vehicle must be equipped with an alarm and sensor that can be installed in the vehicle. If the sensor detects the presence of a human body or any movement, it will make an announcement and notify the parents by updating the sensor values in Thing Speak, as the proposed system does.

This system required a technique for detecting interior movement or the voice of a child who had been left in the car and alerting the parent if any movement occurred. Aside from the proposed system's simplicity, the cost will be kept as low as possible in order to make it affordable for installation in any type of vehicle, regardless of quality or brand. Even though the vehicle's alarm system has been activated, the alarm's primary purpose is to keep the car safe from outside intrusion, not from inside. The proposed system will detect any motion movement from the interior of the vehicle. This project can be useful in monitoring the baby's condition inside the car by using the sensors.

The Internet of Things (IoT) is a new and promising technology that gives every device an identity by assigning it an IP address. IoT can communicate with all items in the universe through the internet, allowing systems to be audited, logged, and controlled for a variety of purposes. Sensors, network connectivity, and data storage applications are the three key components of an IoT system. Sensors in IoT devices can communicate with the central server directly or through gate way devices to store data. Sensors such as temperature, power, force, humidity, proximity, and others are utilised in many IoT devices. A gateway monitors numerous wireless standard interfaces and can support a variety of technologies and sensors. Gateways connect to the cloud using wireless or cable backbone technologies such as

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An IoT Based Coal Mine Safety And Monitoring System Using Lorawan

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Abstract:

Today protection of miners is a main challenge. Miner's health and lifestyles is susceptible to several critical issues, which consists of no longer only the working environment, however also the after effect of it. Mining activities release unsafe and poisonous gases in turn exposing the associated people into the chance of survival. This puts a lot of stress on the mining industry. To increase the productivity and decrease the price of mining along with consideration of the security of workers, an innovative strategy is required. Miners health is in danger on the whole because of the toxic gases which are very regularly launched in underground mines. These gases cannot be detected without problems through human senses. This thesis investigates the presence of poisonous gases in quintessential areas and their effects on miners. A real time monitoring gadget using wireless sensor network, which consists of multiple sensors, is developed. This gadget monitors surrounding environmental parameters such as temperature, humidity and a couple of toxic gases.This gadget additionally offers an early warning, which will be helpful to all miners current inner the mine to store their existence before any casualty occurs. The system makes use of Lorawan science to establish wi-fi sensor network. It is wireless networking preferred IEEE 802.15.4, which is suitable for operation in harsh environment.

I INTRODUCTION:

Underground mining operations proves to be a risky assignment as some distance as the safety and fitness of workers are concerned. These dangers are due to distinctive methods used for extracting different minerals. The deeper the mine, the larger is the risk. These security problems are of grave concern especially in case of coal industries. Thus, protection of people need to always be of major consideration in any structure of mining, whether or not it is coal or any other minerals. Underground coal mining includes a greater hazard than open pit mining due to the troubles of ventilation and viable for collapse. However, the utilization of heavy equipment and the methods carried out throughout excavations end result into safety risks in all kinds of mining.

Modern mines frequently enforce a number of protection procedures, schooling and training for workers, health and protection standards, which lead to full-size modifications and upgrades and safety level both in opencast and underground mining. Coal has constantly been the most important resource of electricity

Face Recognition Based Attendance Management System Using Raspberry Pi

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Abstract—The current attendance mechanism is thought of as manual. Both teachers and students must put in a significant amount of time. Even with manual attendance, there is still a chance that there will be proxies in the class. The work's key contribution is the creation of an attendance control system that employs student faces as feed input. We have decided to use the Raspberry Pi and a webcam to make it accessible on all platforms. Connected to the Raspberry Pi module is a webcam. The web cam is used to capture student face photographs. The Qt creator IDE implements many face extraction methods utilizing the OpenCV platform. Face recognition technology is used to take attendance in this project, allowing us to identify each student's face

Keywords— Attendance management system, Face Recognition, Raspberry Pi.

I. INTRODUCTION

Among the readily available biometric styles Face recognition is a popular study area with a variety of artificial operations, including security and examination, entertainment and effective reality, and mortal- machine relations. As attendance points are added at the conclusion of the semester, maintaining attendance records in institutions is pivotal to maintaining the quality of education. preceptors generally manually mark scholars' attendance, and they must insure that the correct attendance is marked for each pupil. Due to the inviting number of scholars involved, reproduction and deputy cases aren't caught during this lengthy process. Every institute has a unique system for recording attendance. Some people mark attendance using RFID, other biometric styles, including iris, retina, and thumb. Face recognition on the other hand advantage over these above- mentioned ways as it's nonintrusive, contact-free and has natural accession. numerous ideas have been proposed by experimenters for biometric attendance system. Godswill .it aimed at developing a less protrusive, cost-effective and more effective automated pupil attendance operation system using face recognition that leverages on pall computing(CC) structure called FACECUBE. FACECUBE takes attendance by using IP camera. It recognize the image and evaluates it against the database's registered faces. The attendance record is marked as present when a registered face is found in the acquired image collections, otherwise absent.

It has been suggested to use a Raspberry Pi 2 to run a face recognition-based attendance management system using the Eigenfaces algorithm. In the project, a camera is positioned at the classroom door and connected to a Raspberry Pi 2 module to record pupils entering the classroom. The Raspberry Pi 2 houses the pictures. To operate at a high speed, the Raspberry Pi 2 module is used. Additionally, a CCTV camera system that is mounted at the entrance to a classroom has been proposed [6]. The camera automatically records a person's image as they enter the classroom and uses an Android-enhanced smartphone to match the image with the face database. The robust face recognition capabilities of the Android smartphone were utilized [6]. The automated attendance system has been studied extensively [7, 8]. However, relatively few have been put into practice using a method that is less obtrusive, like face recognition. The essay is organized as follows for the remaining portions. Section II explains the hardware component description needed to carry out the project. Section III contains a description of the software needed to carry out the project. Section IV presents the project description and outcomes, while Section V wraps up the study.

II. HARDWARE DESCRIPTION

The main objective of this work is to develop an attendance management system that uses the face of students as the feed input. For facial recognition, we have chosen the Raspberry Pi 2 model B in order to make it available across all platforms [5]. A webcam is linked to the Raspberry Pi module. Face detection separates faces from non-faces and those countenances that can be suspected. This module can be utilized for different applications where face acknowledgment can be utilized for confirmation. In this proposed system we take attendance using face recognition which recognizes the face of each student in front of it while entering the class or nearby the webcam. The major hardware components used in the development of this work are the Raspberry Pi 3 and web camera.

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Women Safety Device Using NodeMCU

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Abstract: The project's goal is to create a women's safety device that makes use of a number of cutting-edge technologies to guarantee the user's safety. A Node MCU microcontroller, a GPS module, a GSM module, a camera module, a fingerprint scanner, and a buzzer are all components of the gadget. When an emergency arises, the system uses the GPS module to track the user's location and the GSM module to transmit an SOS alert to the user's registered emergency contacts. The camera module records pictures and videos of the surroundings, which can help find the offender. The smartphone has an additional layer of protection thanks to the fingerprint scanner, which makes sure that only authorised users can use it. In the event of an emergency, the buzzer can be used to.

Keywords— GSM, GPS, finger print module, Camera *module, finger print module, Buzzer, battery.*

I.INTRODUCTION

In today's environment, women's safety is a crucial concern, especially when they travel alone or in remote locations. The development of technological advancements like the NodeMCU-based women's safety device with a GPS, GSM, and camera module has been made in response to this problem. The goal of this project is to develop a lightweight, reliable safety tool that will give women greater confidence and protection while they are out and about.

The NodeMCU-based women's safety device with a camera, GPS, and GSM module is an effective tool that offers precise location monitoring, real-time communication, and crucial proof in the event of an incident. The device's addition of a fingerprint module and buzzer adds an additional degree of protection and expedites response time in the event of an emergency.

II RELEATED WORK

Using a smartphone application, sensors and pulse rate sensors are used to automatically detect the possibility of a potential issue. [2] highlights the use of image processing to spot potential threats and offers several defence mechanisms. S. Ar Mora's research [3] touches on using temperature. The authors of [3] created a gadget using the PIC16P87GA.

When the emergency button is touched, a SIM808 module with GPS, GSM, and GPRS capabilities and a microcontroller are utilized to send an alert to friends and family. A system built around facial traits is presented in [4]. A report is made if the expression on the face is one of menace. To create a secure system, GSM, GPS, and about [5] are employed.

III .EXISTING SYSTEM

Under the current system, it is impossible to keep track of the crimes against women. The recordings from some sites' CCTV cameras are nonetheless stored. They don't do anything till everything has happened.

In order to ask for help, they can only use their mobile device to text their friends and family. The majority of women find it difficult to reach for their phone at that crucial time. Even if they do, it can be difficult to get in touch right away in case something dreadful happens. Furthermore, it is rather unreliable. These are the drawbacks of current systems. Not very dependable, expensive, and requiring manual labour.

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"WIRELESS HEALTHCARE SENSING & MONITORING SYSTEM FOR MEDICAL COMMUNICATION IN IOT"

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Abstract: In this article, a new medical communication scheme, protocol wireless medical sensor networks for the efficiency of healthcare (PWMSN4EoCH), shortened by (PEH), which uses a hasty strategy and random network coding (RNC), is proposed. The new concept improves the performance of the healthcare network. It quickly analyzes the medical network description, focusing on some basic parameters for narrowband Internet of Things (NB-IoT) systems in wireless mesh networks (WMNs). This PEH effectively meets the requirements prescribed for wireless telemedicine applications in which medical sensors (MSs) share the downlink and uplink resources to its neighborhood, including wireless health hubs (WHHs) and wireless base stations (WBSs) for controlling the health of the human body. The PEH scheme substantially accelerates the implementation devices of telemedicine for patient satisfaction. In contrast, the state-of-the-art technique (SoAT) scheme, which is currently used, misses the entirety of the proposed principle. The proposed system is compared with the SoAT in terms of message size (bytes), roundtrip time (RTT) (ms), overall network capacity (ONC) (bytes/s, and delivery delay (DD) in ms. Our investigation has proved that the RTT, ONC, and DD of the proposed PEH are much better than the SoAT schemes, achieving 64%, 66%, and 71%, respectively. The simulation studies clearly indicate that the PEH introduces more than 64% performance enhancement over the SoAT scheme.

Index Terms **-Internet of Things, random network coding (RNC), telemedicine, viral disease, wireless medical sensor networks (WMSN).**

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"AN IOT BASED AUTOMATIC LUMINOSITY AND SOIL MOISTURE CONTROL SYSTEM FOR POTTING SHED"

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Abstract: The main goal of the Arduino-based IoT-based potting shed monitoring system is to increase production by enhancing current agriculture methods. Here is given an internet of things (IoT)-based automatic lighting and soil moisture control system for potting sheds. With the use of an LDR sensor, the automatic luminosity control system was created to gauge ambient brightness. The LED bulbs are then automatically controlled to illuminate a region between 3000 and 5000 lux that is suitable for plant development. The automatic soil moisture controller, on the other hand, uses a fork-type sensor to monitor soil moisture and automatically activates or deactivates the water sprayer when the value of the soil moisture is lower or higher than the set value. Also, air humidity and temperature are managed.

Index Terms **– IoT (Internet of Things), Automatic Control, Luminosity, Soil Moisture, Potting Shed, Sensors, Microcontroller, Wireless connectivity, Temperature, Humidity, ThingSpeak, ThingView, LDR, DHT11, ESP8266 Wi-Fi Module**

I. INTRODUCTION

Temperature, relative humidity, lighting, and soil moisture in the potting shed are key environmental elements for the quality and improved productivity of plant growth. Ongoing observation of these variables provides pertinent data regarding the specific contributions of the many variables to achieving optimal crop output.

There are 4 Sectors in the suggested automatic control system. A LDR sensor that controls luminosity serves as a potting shed's ambient lighting monitor. A soil moisture sensor, a transistor, and a water pump linked to a water sprayer make up the soil moisture control sector. We can keep an eye on the potting shed's humidity and temperature. The most important elements for good plant development and productivity are light, soil, humidity, and temperature.

A smartly regulated potting shed produces more crops per square meter than open field gardening does. Electronic equipment like as sensors, actuators, and controllers were created to be able to communicate data by connecting wirelessly to one another or to a server. We are regarded in our project as a gerbera plant in the potting shed. A plant genus in the daisy family called Gerbera produces flowers with beautiful, two-lipped ray florets in hues of yellow, red, orange, white, and pink. Its main goal is to enhance agricultural operations through the integration of contemporary technologies for greater agriculture output and quality. The system's environmental data automatically feeds back to the processing unit. The suggested automatic control method provides the path for the expansion of large intelligent framing or intelligent potting sheds for various plants.

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SMART BIN FOR WASTE MANAGEMENT SYSTEM

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Abstract:

This paper, titled "Smart Bin for Waste Management System," is crucial. A strong domain must be in good health and upbeat atmosphere. Environments that are clean and sanitary are essential for human habitation. The goal of Smart Bin is to create a profitable and flexible trash management system. In public areas, trash cans are being inundated as the garbage flows out, contaminating the area. As a large number of bugs breed on it, this also increases the frequency of diseases. In order to track garbage production, construct an automated waste disposal system, and detect rain, a smart bin was created. The results showed that the detection system is clever and practical, and can be used to automate any solid waste.

Key Words: Wi-Fi, DC, IR, Waste Bins

Introduction:

Trash management is an activity that takes place in a remarkable variety of locations. A moderate percentage of waste may be found in every environment that is under human influence. Waste management is a crucial requirement for naturally sustainable progress in many countries. The use of garbage containers for waste build up is a common approach for strong waste transmission. Without being aware of the receptacle status, the waste administration team must identify themselves in person at each trash collection location. There are two possible outcomes in this situation: either there is no tragedy for the social occasion or the container has over flew.

Related Work:

The use of smart rubbish bins is an eccentric concept. Using IR sensors, US sensors, motors, and GSM for real-time data sharing, we are able to develop smart garbage cans. We read and looked through a number of publications that discuss the idea of smart bins. At the beginning, they gave us a briefing on the many approaches that had been suggested for scraping and managing garbage in various research articles. Publication [1] provided information on the various approaches. In this study, a different method was provided and actualized for the Smart City's ideal outstanding waste management achieved using IoT [3], The Top-k question and the dynamic planning concept needed for occasional dustbin cleaning led us to need-based cleaning of bins. Using GSM technology, the City Waste Collection Indicator [4]. Using US Sensors and GSM, it can identify dustbin fills and alert the professionals. As it sends all of the alarms to the same person, there is no efficient ready structure accessible.

Design:

This study suggests a prototype system that would enable waste monitoring staff to prompt waste collection by alerting them when the fill level or acceptable gas emission standards are exceeded. By ensuring that collections take place only when necessary, overfilling is minimised, and collection expenses are decreased, the suggested method can assist in increasing productivity. Moreover, it contains a gas sensor to identify dangerous gases and warn adjacent persons through a buzzer. The bin automatically closes when an IR sensor detects person even the bin was filled. The Arduino microcontroller is employed in this system.. Moreover, By using the gsm 800l module it can send messages such as bin was filled and the location of the bin and at the same, time GPS module was used to provide the precise location of the bin.

Figure 1: Prototype

OPTIMAL ALLOCATION OF UPFC FOR OPTIMAL REACTIVE POWER DISPATCH USING KINETIC GAS MOLECULE OPTIMIZATION ALGORITHM

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Abstract:

Reactive power control plays a major role in delivering quality power to the consumers. The size of power system is increasing day by day and therefore optimal reactive power dispatch (OPRD) is becoming more complex and gigantic problem. This is a complex nonlinear problem with discrete and continuous variables. So many optimization techniques are used to solve this complex OPRD problem. Due to increasing constrains regularly, there is a problem of solution roaming around local optima rather than converging to global optima. For faster convergence and accurate solution, a special and efficient algorithm called as Kinetic Gas Molecule Optimization algorithm(KGMO) is designed and the performance is compared with convectional Particle swarm optimization algorithm. For more efficient reactive power control, Unified power flow controller (UPFC) device is allocated optimally and tested in an IEEE 30 bus system .A Multi-objective ORPD (MORPD) problem is solved and the performance of KGMO is evaluated in MATLAB

Keywords: KGMO (Kinetic Gas Molecule Optimization), ORPD (Optimal Reactive Power Dispatch), Multi-objective ORPD (MORPD), UPFC (Unified Power Flow Controller).

1. Introduction:

Reactive power compensation is one of the major problems in the power system and has become more important now a days with increasing demand and constrains [1]. In order to supress the power losses and to improve the voltage profile, OPRD is needed. By proper selection of reactive power compensation variables like magnitudes of generator voltage, transformer tap-settings and reactors or FACTS devices, OPRD problem can be solved [2]. Here, voltage magnitudes are continuous

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ELECTRIC VEHICLE BATTERY THERMAL MANAGEMENT SYSTEM BASED ON CALCULATING STATE OF CHARGE ANDSTATE OF HEALTH

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ABSTRACT
The transportation industry is increasingly turning towards electric vehicles as asustainable and environmentally friendly option, as they produce zero emissions. In order to power these vehicles, it is important tohave efficient battery storage technology inplace.Batteries when kept in isolation or a closed compact space, as in electrical vehicles tend to heat up drastically resulting in depreciation of efficiency as well as lifetime ofthe battery. The heat generation in the battery during charging and ischarging of the battery.Battery thermal management system that keepsthe battery temperature within the range of 25 C and 30 ° C will significantly improve the power consumption and enhance both the charge storing capacity and battery life. The SOC and SOH is calculated using coulomb counting method. This Paper battery thermal management system is a combination of forcedair cooling, and liquid cooling. A motor is connected to the battery system and used to pump fluid around the external layer of the battery. This liquid coolant indirectly contacts the battery and serves as the medium for removing the heat generated during operation.Forced air assisted heat removal isperformed from the reservoir.

Keywords—BTMS-BatteryThermal Management systems, Battery Thermal Model, SoC-State of Charge, SoH State of Health,Charging and Discharging, Cooling System, Efficiency.

INTRODUCTION
The power generated in our surroundings comesfrom various sources, which are mainlyclassified into renewable and non-renewable resources. The battery system is essential in all electrical and electronics fields and plays a significant role in renewable sources of energy. Proper monitoring of the battery system is necessary to safeguard its lifetime, especially inthe battery thermal management system where temperature is critical.Batteries are widely used in various fields, including electrical vehicles, electronic appliances, powerhouses, and industries. Lithium-ion, storage batteries, and fuel cells are common types of batteries used in these fields. However, the use of these batteries may generateheat during charging and discharging, which canreduce the battery's lifespan. The battery dissipates heat from its external surface. The battery dissipates heat from its external surface.The increase in temperature within the battery system can lead to overheating, which can havenegative effects on

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DYNAMIC WIRELESS CHARGING OF ELECTRICVEHICLES WITH A METERING SYSTEM

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ABSTRACT

This paper presents a dynamic wireless charging system for electric vehicles (EVs) with a metering system. The proposed system consists of a power transmitter, an energy meter, and an EV receiver. The power transmitter is responsible for transmitting the needed power from the grid to the EVs, while the energy meter is used to measure and cover the operation of energy. The EV receiver is responsible for entering and storing the transmitted power from the grid. The proposed system also includes a control algorithm that ensures that only authorized vehicles can pierce and use the transmitted power. Likewise, this paper also discusses colorful use cases of dynamic wireless charging systems to illustrate their implicit operations in unborn EV charging scripts.

Keywords – Billing Strategy, Dynamic Wireless Charging System, Internet of Things (IoT), Wireless Power Transfer (WPT)

I. INTRODUCTION

Electric vehicles are making a huge impact on machine industry. The fissionability and demand for EVs are adding fleetly due to theiradvantages. To make electric vehicles indeed more seductive, dynamic wireless charging with metering systems is being introduced. This wireless technology will allow electric vehicles to becharged wirelessly while they're in a motion, barring the need for plugging in the vehicle or having to stop at a charging station. This will enable electric vehicle possessors to enjoy the convenience of wireless charging while keeping track of their electricity operation through a metering system.

Wireless charging of electric vehicles is a revolutionary technology that promises to revisethe way we charge our vehicles. It eliminates the need for physical lines and entrapments, making charging more accessible and effective. This technology has the implicit to reduce energy costs, ameliorate safety and increase energy effectiveness. Dynamic wireless charging is an advanced form of this technology that allows for a vehicle to be charged while it's in a stir. This technology utilizes electromagnetic fields to transfer energy from a source station to a receiving station on the vehicle itself. This allows for nonstop charging while driving, barring the need for frequent stops to charge at designated stations. With dynamic wireless charging, electric vehicles can travelfurther with lower time-out and lower expenditure.

The metering system plays a pivotal part in the dynamic wireless charging of electric vehicles. It's used to cover and measure the power transferred from the charging station to the vehicle. This system helps to ensure that the energy is delivered safely and efficiently. It also helps in optimizing the charging process and furnishing accurate billing information. The metering system consists of colorful factors similar to detectors, regulators, and communication modules which are used for monitoring, controlling, and measuring the power transfer during dynamic wireless charging of electric vehicles. The metering system consists of colorful factors similar to detectors, regulators, and communication modules which are used for monitoring, controlling, and measuring the power transfer during dynamic wireless charging of electric vehicles. Element Purpose Detectors Measure the power transfer and reply to power oscillations. Regulators Control the dynamic wireless charging process. Communication modules Transfer

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DESIGN AND DEVELOPMENT OF PARALLEL HYBRID PROPULSION ELECTRIC VEHICLE USING CASCADED H-BRIDGE MULTILEVEL INVERTER

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Abstract-
In this paper, a parallel hybrid prolusion electric vehicle model is presented with motor drives realized by cascaded H-bridge multilevel inverter modules. Modulation scheme for a 15-level inverter is optimized by minimizing total harmonic distortions, switching losses, number of carriers, whilst balancing the state of charge between battery modules. The multilevel inverter model is subsequently integrated into electric motor drives simulations, with variable frequency adjustable speed and regenerative braking scenarios demonstrated. Manipulating the electric drives with regenerative braking, fuel economy is optimized by keeping the petrol engine operating at a sweet spot, i.e., 70% to 80% of its maximum torque. The simulation results can be evaluated by using MATLAB/Simulink.

Keywords: Hybrid electric vehicle, multilevel converter, motor drives, fuel economy, regenerative braking model, variable frequency adjustable speed.

Introduction

Energy saving and fuel economy are at the center of an ever-growing research effort on a global scale, as evidenced by the massively increasing electrified vehicles and their components being rolled out in the market. While innovating fossil fuels based thermal-propulsion technology for combustion engines has limited scope to meet pledges to cut carbon emissions and address the urgency of the climate crisis, hybrid electric propulsion is making disrupting changes to support the global transition into a carbon-neutral future. Arguably, the pioneering advances in efficiently combining thermal engine (for long-range travel), and electric motor drives (based on power electrics control) are influencing the next generation of electric-powered vehicles.

Multilevel multicellular converter (inverter) possesses many properties that make them highly interesting for hybrid electric vehicle (HEV) applications, e.g., negligible total harmonic distortions (THD) in the staircase waveform free of bulky filters, modular configuration with fault tolerance for battery packs (lithium-ion cells), and bidirectional current control for battery recharging during regenerative braking. A 15-level cascaded H-bridge (CHB) inverter model deployed in this work is depicted in Fig.2, with 7 identical H-bridge modules connected in series at each phase. Fuel economy of HEV is linked to the motor drives, more specifically, the control of the multilevel inverter, but its full action and impact on the hybrid. Propulsion is only just beginning to be understood. To this end, a sequence of models underpinning these are developed in this work and characterized by simulations using MATLAB Simulink. Firstly, a phase-shifted pulse-width modulation (PSPWM) for the 15-level CHB inverter is presented in section II, describing the control circuits, and reporting the simulated output analysis. Incorporating the inverter control, section III reports the motor drives modelling results of adjustable speed and regenerative braking. A parallel HEV model is built up with fuel economy balanced between the electric motor and the internal combustion engine. Conclusions are drawn in section. In Fig.2each block contains one H-bridge and all H-Bridges are connected in series with another H-bridge.

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ENHANCING VOLAGE STABILITY AND IMPROVING POWER QUALITY IN SMART GRID WITH RES FED CASCADED MULTILEVEL INVERTER

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ABSTRACT
Research focuses on renewable energy-based smart grids to meet appropriate energy demands in the world. The smart grid is an autonomous power network that can efficiently transmit electricity. As a result, a multi-level inverter (MLI) that is connected to the smart grid which increases the efficiency of the system. The main objective of system is to inject power generated by the renewable sources such as solar energy, wind energy & fuel cells with multilevel inverter for improving the power quality, lowering Total Harmonic Distortion (THD), increasing the efficiency, and maintaining voltage stability.
Keywords: Solar PV array, Fuel Cell, Multilevel Inverter, Wind energy system.

INTRODUCTION
Renewable energy can be termed as liveliness from unlimited natural resources. There are many sources of natural renewable energy resource like sunlight, water, air, biomass, andgeothermal heat. Over a specified geographical area, the scope and opportunities for renewable energy resources are vast in contrast to other forms of energy like fossil fuels that are limited and concentrated to specific localities. With the rapid development of renewable energy, efficiency, economic benefits are immense and would result in significant energy security, while reducing the environmental effects. This includes positive developments in improved healthcare and reduction in infant mortality rates due to reduced pollution effect and countries would save millions on healthcare. And for reliable source of power, smart grids provide the technologies that improve the any fault detection and self-heal the power network without interrupting the supplied electricity. Smart grid technology can sustain a huge number of fluctuations caused due to weather conditions. Multilevel Inverters (MLIs) are playing a very vital role in the smart grid technology.

So, Power electronics inverters are increasingly more widely used for several applications, such as clean energy, electric power systems, and motor drive systems (renewable). Due to their numerous advantages, such as high-quality output waveforms, less voltage stress on switches, decreased switching losses, and better efficiency, multilevel inverters have also recently attracted a lot of attention. The idea behind multilevel inverters (MLIs) is to convert power utilizing minuscule voltage increases by using many semiconductor switches. These MLIs have been widely employed in high or medium power operations, including variable-speed drives as well as static VAR compensator (SVC) reactive power compensation. MLIs also were applied to low-power operations like solar power systems (PV) and hybrid e-mobiles. The neutral point clamped (NPC), recently developed flying capacitor (FC), and to produce inverted AC from separate DC sources the cascaded H-bridge (CHB), these considered as 3 fundamental topologies of MLI.

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ENERGY MANAGEMENT STRATEGY OF A RENEWABLE ENERGY BASED ELECTRIC VEHICLE

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ABSTRACT
The adoption of charging the electric vehicle using renewable energy sources [RES] has been on the rise. The impact of charging the EV via the electric grid, especially during the peak demand period cannot be neglected, it causes many problems such as harmonics, voltage outages and fluctuations. The strategy is based on the premise of considering constraints and the principle of minimizing the operation cost of the charging station, taking into account factors such as photovoltaic, utilization rate, real-time electricity price, battery loss and the combination of these renewable energy sources into the charging infrastructure has an important role to decease the environmental effects and to enhance the efficiency of charging station.
A grid connected electric vehicle charging station powered by renewable sources of energy (photovoltaic solar systems) and pack of batteries as storage system, is evaluated and analysed. The use of charging stations integrated with distributed generation based on photovoltaic [RES], to boost the power generation, can be a viable solution to mitigate this problem. Due to the stochastic nature of RES, there is a persistent need to add an energy storage system [ESS].
The proposed EMS supply the continuous charging to the electric vehicles even during night time (when sun irradiance is not available). This prototype charging system is tested under different sun irradiance conditions taking in to account the cost of the energy transmission and state of charge of the battery. The results validate the performance of the proposed energy management and the proper operation of electric vehicle charging station.

Keywords: electric vehicle , charging , solar pv array,management.

INTRODUCTION
There has been tremendous growth in usage of Plug–in electric vehicles (PEVs) and plug-in hybrid electric vehicles during recent years due to reasons like cost effectiveness, reduction in non-renewable energy supplies like gasoline, diesel, biogas etc. Charging of these PEVs & PHEVs using renewable energy sources (RES) further reduce the greenhouse gas emissions. Since there is an uncertainty in the availability of renewable energy it is not possible to provide continuous charging to Electric Vehicles using RES alone.

Using a grid connected Charging station powered by PV system and ESS is a solution to the above problem [1]. The combination of these renewable energy sources into the charging infrastructure has an important role to decrease the environmental effects indirectly at the power generation plants and to increase the efficiency of the charging system. Due to the non linear characterstics of RES, there is a important need to add an ESS, which has an important role in the incorporation of electric vehicle charging station (EVCS). The photo voltaic power is known as the maintance free source of energy to

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Modeling of a DC Microgrid and its Protection from Faults by using the fuzzy logic controller

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Abstract

This work's main goal is to analyze DC microgrid protection with different types of faults and effects on power electronics devices such as voltage source converters (VSC), and DC-DC converters and the effect on power loads. The first case is PV connected to the battery (off-grid), the second case is PV connected to the main grid (on-grid), and the last case is PV and battery connected to the main grid, then a case failure analysis study is carried out for them. A normal circuit breaker was used for protection, and we can use different types of protection for DC microgrids in the future. The simulations are obtained using MATLAB/SIMULINK, and the results for all cases have been discussed, for sections one and two all figures are in normal operation and the last cases show the effects of the fault on the transmission lines and all the equipment needed for the DC microgrid. The fault affects the bus, and the circuit breaker (CB) protects the bus from the current fault, but the fault current is very high, we need to design a new method to protect the DC microgrid .

Keywords: Dc Microgrid, DC Converter, Voltage source Converter, fault analysis, Matlab.

Introduction:

A DC microgrid is a small-scale electrical power distribution network that operates using direct current (DC) rather than the more common alternating current (AC). Microgrids are often used to provide localized power generation and distribution, and DC microgrids are gaining popularity due to their increased efficiency and reliability compared to AC systems. DC microgrids can be designed to operate independently of the larger grid, or they can be interconnected with the main power grid. They typically incorporate multiple energy sources such as solar panels, wind turbines, and batteries, which are connected to a central control system. This system monitors the energy demand and supply and manages the power flow between the different sources and loads to ensure that the microgrid operates at optimal efficiency. Advantages of DC microgrids include increased efficiency due to the elimination of AC-to-DC and DC-to-AC conversion losses, improved reliability due to the reduced complexity of the system, and the ability to easily integrate renewable.energy sources such as solar and wind power. Additionally, DC microgrids can help to reduce greenhouse gas emissions and promote sustainable energy practices.

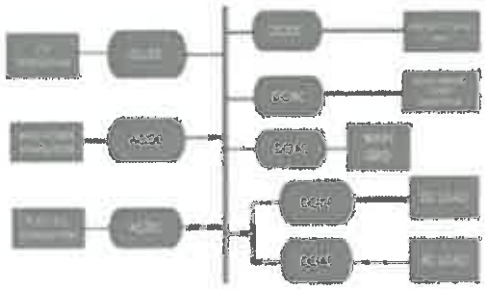

Fig 1: Block diagram of dc micro-grid

An Optimal Controller Design for BLDC Motor Drive with Transit Search Optimization Algorithm

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Abstract - The use of BLDC motors has been on the rise, requiring efficient speed control techniques. This paper proposes a transit search to designing optimal parameters for the PI controller, utilizing Transit Search optimization (TSO) algorithm. Traditional methods for PI controller parameter design can be complex and may result in large overshoot. Although PSO-based methods are commonly used to optimize PI control parameters for BLDC motor speed control, they require proper setting of several algorithm control parameters to achieve better performance. Therefore, this paper proposes a new method based on transit search optimization for optimal parameter design of the PI controller for BLDC motor speed control. The PI control parameters' optimum values are necessary to achieve the desired motor speed under any dynamic condition. To evaluate the proposed algorithm's performance, a MATLAB/Simulink model of the BLDC motor is utilized.

Keywords - BLDC Motor, PI Controller, Particle Swarm Optimization (PSO), Transit Search Optimization (TSO)

I. INTRODUCTION

In contrast to these traditional methods, soft computing techniques have gained popularity in recent years due to their ability to efficiently tune controller parameters with less mathematical complexity. These techniques include metaheuristic algorithms such as particle swarm optimization (PSO), teaching-learning-based optimization (TLBO), and differential evolution (DE), among others. These techniques aim to balance exploration and exploitation to find the optimal values of controller parameters for the BLDC motor control system[5-7].

Among these soft computing techniques, transit search optimization (TSO) is a new optimization method inspired by galaxysystem[1]. In TSO, a population of solutions is generated and categorized into different groups or parties. These parties compete with each other, and the best solutions are chosen from each party to form a new population. This process is repeated until convergence is achieved. TSO has been successfully applied to various optimization problems and has shown promising results in terms of efficiency and accuracy.

Therefore, in this paper, the authors propose using TSO to optimize the PI controller for BLDC motor speed control10]. The aim is to achieve more accurate speed control under all dynamic conditions while avoiding the complexity of traditional tuning methods[9].

TSO is a novel metaheuristic optimization technique that is inspired by political election processes. The TSO algorithm is based on the behavior of stars.The main idea of the TSO algorithm is to use a set of movement of stars to represent the planet position, and the stars represent the fitness values. The TSO algorithm uses a set of stars population to change the positions of the planets and eventually converge to the optimal solution.

In this paper, the TSO algorithm is used to optimize the PI controller parameters for the speed control of the BLDC motor. The proposed method is compared with other soft computing techniques

AN EFFECTIVE CONTROLLER DESIGN FOR BLDC MOTOR DRIVE WITH GIANT TREVALLY OPTIMIZER

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Abstract
In this project, an effective controller design for the BLDC motor drive is proposed using nature inspired Giant Trevally Optimizer (GTO). The PI controller is developed for the speed control of BLDC motor using Giant Trevally Optimizer. The gain settings of a PI controller are improved using GTO, with Integral square Error (ISE) as the objective function. The dynamic characteristics of the BLDC motor are observed by the developed model using MATLAB/simulink environment.

The suggested controller's performance is evaluated under a variety of load and set speed settings, and it is compared to other known optimization approaches such as PSO and DE. Based on the simulation results, it is clear that the suggested controller performs better under all of the drive's operating conditions.

Keywords— Giant Trevally Optimizer(GTO), Brushless DC motor, torque control, speed estimations.

Introduction:

The electricity industry is one of the largest and most complex industries in the world. An electric power system is a network of electrical components used to supply, transmit and use electric power. Power system engineers are concerned with every step in the process of generation, transmission and distribution and efficient utilization of electrical energy. Since an engineer is always concerned with the cost, hence, it is important for all power engineers to understand the economy within which the generation, transmission, distribution, supply of electrical power, and its pricing policies are directed towards producing maximum benefits in consuming electrical energy in efficient and effective ways.

I. MODELLING OF BLDC MOTOR

The BLDC motor is a self-synchronous rotating motor and in construction point of view similar to the permanent magnet synchronous motor. It has better speed versus torque characteristics and better dynamic response. Straight forward structure and lower cost than other motors are the most attracting features of BLDC motor. The applications which require less space and weight, BLDC motor is the best choice. Maintaining the Integrity of the Specifications.

In BLDC motor, a permanent magnet produces the main flux whereas in dc motor, DC current through the field coil of the stator produces field flux. The other constructional differences are: hall effect sensors are used in place of commutator and brushes. The rotor position of the BLDC motor is sensed by hall sensors and give position signal to the electronic commutation controller. Hence, the power state of windings is controlled without a mechanical commutator. This continuous commutating is to drive the rotor to move. The back emf influences the torque and speed of the BLDC motor.

FULLY AUTOMATED SOLAR GRASS CUTTER

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Abstract –
This Paper Presents a Fully Automated Solar Grass Cutter. In the Present Generation Grass Cutting Machines Are Becoming Very Popular Today.Ic Engine Driven Cutter Is More Costly, it Consumes More Power. To Avoid These Drawbacks, We Make the Grass Cutter which Operates on Solar Energy. Hence Save Electrical Energy and Manpower. The grass Cutter is incorporated With Pesticide Sprayer attached with the grass Cutter. The Sound produced by the cutter is verry low.it can be used in Silent Zone Areas. such as hospitals, educational institutions. The grass Cutter Operates automatically hence it does not require skilled person to operate. The Main Advantage of our Project is to reduce the Space, cost and manpower Required.

Keywords: ATMega328p Micro controller, Ultrasonic Sensor, DC Motor, Motor Driver, Pesticides Sprayer, Robotic Chassis.

Introduction:

Grass-cutting machines have now become a necessity these modern days. They are reducing the time, cost, and labour for doing the work of maintaining the gardens and lawns and helping farmers remove weed grass, which would otherwise damage the plants cropped in agricultural fields. According to the place and purpose they are serving, the grass cutter is also commonly called a lawn.
mower or an agricultural weed cutter. Previously, the grass cutters were either gas or man powered. Cutting grass with normal grass cutters or with a sickle, as in a hedge, takes more time and human power. Solar-powered grass cutters make the work faster and easier. Because of their combustion engines, these traditional grass cutters produce a lot of noise and leave a carbon footprint in the environment, leading to an increase in pollution. The engines used in conventional grass cutters require periodic maintenance. In our daily lives, we are largely dependent on fossil fuels as a source of energy for industries, transportation, etc.
Pollution is gradually increasing due to this. So it is; therefore, as a result, it is our responsibility to reduce our carbon footprint on the environment by using alternative energy sources to power machines used for domestic purposes such as grass cutting. to move onto renewable sources of energy like solar energy, which can be obtained from the sun through its light rays and collected using a solar panel based on a photovoltaic cell. The availability and utilisation of solar energy in the farm during the daytime is higher when compared to tidal energy and wind energy, and mobility of the grass cutting machine is easier with a solar panel. A flow of electrons began when the protons from solar energy struck a photovoltaic cell. These electrons could then be pulled off by two wires to provide direct current (DC). A photovoltaic module is a cluster of electrically interconnected solar cells installed on a frame or support structure. These modules are designed such that they provide power at a specific voltage based on the requirements and can be stored using a battery, and the battery can be used to drive a motor.
The cells on the cathode and anode plates of the batteries in the solar grass cutter directly convert chemical energy to electrical energy. Within the cell, a chemical reaction will occur due to its chemical composition. The two half cells that make up each voltaic cell are connected by a conductive electrolyte that contains anions and cations. In our project, the grass cutter model is powered using a solar panel, which is used to drive the motor that runs the blade to cut the grass. We mainly focused on using a renewable source like solar energy as the power source to help farmers by making their work easier in agricultural fields. We carefully selected the cutter frame, high-rpm dc motor, and helical blade as the cutter in order to use the machine in both agricultural fields as well as in lawns for general maintenance purposes.

SOLAR POWER GENERATION SYSTEM WITH POWERSMOOTHING FUNCTION USING TWO POWER STAGES

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ABSTRACT
The output power from a solar power generation system (SPGS) changes significantlybecause of environmental factors, which affects the stability and reliability of a powerdistribution system. The DIBBDAI get together the functions of boost voltage, buck voltage and DC-ACpower conversion. The BPC acts likea battery charger between the solar cell array and the battery set. For theproposed SPGS, the DC power that isprovided by the solar cell array or thebattery set is converted into AC power through only one power stage. The proposed power conversion interface increases power efficiency, smooth's power fluctuation and decreases leakage current for a SPGS. The simulation results show that the output voltage, output currentand inductor leakage etc.

INTRODUCTION
Introduction of SPGS with power
Power smoothing function using twopower stages are extreme climate change has created global warming. Most countries are actively developing renewable power generation reduce the environmental impact of greenhouse gas emissions. In the past, renewable power generation was expensive and depended on government subsidiesbut the cost of renewable power generation has decreased rapidly dueto developments in manufacturing technology. These environmental factors change with the weather and seasons and cannot be controlled. As the penetration of SPGSs increases, drastic changes in their power generation will affect the voltage and frequency of distribution power system and can cause power outages. This reduces the power quality of distribution power systems. To suppress upward and downward fluctuations of the SPGS, the rapid power regulation technology is required to temporarily store and release power to stabilize the power output from the and release of electrical energy and flexible operation, it has SPGS. Since battery set has the advantages of small size, quick absorption considerable potential as a power regulation device for the SPGS. The output froma solar cell array is DC power and thebattery set stores power in DC form, so a power conversion interface is needed for integrating solar cell arrayor battery set into the power grid for DC-AC power conversion. A boost power converter (BPC) must beinserted between the DC-AC power converter and the solar cell array or battery set and all power from the solar cell array or battery set must be processed using two power conversion stages. Each BPCgenerates an AC voltage with a DC offset. The output voltage is the difference between the output voltages of the two BPCs and the DCoffsets will be canceled each other. However, the output voltage has a higher peak value due to the DC offset. As a result, the voltage rating and the switching loss for the power electronic switches are increased. In addition, the Z-source DC-AC power converter and the boost DC-AC power converter cannot solve the problem of leakage current for the applications of SPGS. This study proposes a SPGS with a power smoothing function. The proposed SPGS uses a dual-input buck-boost DC-AC inverter (DIBBDAI) and a BPC to integrate a solar cell array anda battery set to generate power
injecting into the grid. The DIBBDAI integrates two DC power sources. AC power using only the DIBBDAI, andthe battery set is charged from the solar cell array only using the BPC. The negative terminal voltage for thesolar cell array contains little high frequency components, so the leakage current that is induced by theparasitic capacitance of the solar cellarray is smaller.

PROPOSED BLOCK DIAGRAM

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NEURAL NETWORK CONTROLLER BASED INTERLINKING CONVERTERFOR POWER QUALITY IMPROVEMENT IN MICROGRID SYSTEMS

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Abstract

- The project aims to improve power quality using a neural network-based interlinking converter. The proposed control system is designed to reduce harmonics and improve dynamic response compared to conventional notch-filter techniques. The system is also developed for a three-phase power system application and can compensate for both balanced and unbalanced harmonics with higher accuracy. The use of a neural network allows for more precise control of the converter, resulting in a more efficient and effective system. The system's ability to reduce harmonics and improve dynamic response is crucial in improving power quality, as it minimizes the risk of equipment damage and improves the overall reliability of the power system. The proposed control scheme is an improvement over conventional notch-filter techniques because it provides more accurate compensation for harmonics. The system is also able to handle both balanced and unbalanced harmonics, which is critical in real-world power systems. Overall, the implementation of the NN-based interlinking converter has the potential to significantly improve power quality, leading to a more reliable and efficient power system.

Keywords: Grid-connected microgrid, harmonics reduction, notch filter, power management, Neural Networks Controller.

I. INTRODUCTION

Harmonics in power systems can cause a range of issues, including increased losses, reduced efficiency, equipment overheating, and interference with communication systems. In microgrids, the problem of harmonics is even more critical, as the presence of distributed energy resources (DERs) such as renewable energy sources and energy storage systems can exacerbate the harmonic distortion. To reduce the harmonic distortion in microgrids, filters such as LC or LCL filters can be used to mitigate the effects of power electronic devices. These filters are designed to suppress the high-frequency harmonics generated by the converters. Non-linear loads, on the other hand, require a different approach. These loads draw non-sinusoidal currents that can distort the voltage waveform. This, in turn, can increase the THD ofthe grid voltage and current. To mitigate this problem, it is important to ensure that the THD level is kept within an acceptable range based on the grid standards. The IEEE standard 1547 and Australian standard 4777 both specify that the total current distortion should be less than 5%. This means that the sum of all the harmonic currents should not exceed 5% of the fundamental current. Meeting these standards requires careful design and control of microgrids, including proper selection and placement of filters and other mitigation measures.

II. LITERATURE REVIEW

The proposed autonomous power management scheme for interlinked AC-DC microgrids addresses the operational drawbacks of existing control schemes by considering the specific loading conditions of the DC microgrid before importing power from the interlinked

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EYE CONTROLLED WHEEL CHAIR FOR PHYSICALLY HANDICAPPED USING RASPBERRYPI

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ABSTRACT:

This paper presents an eye-controlled wheel chair using raspberry pi for people suffering from quadriplegia & paralysis. In this model, we use the optical-type eye tracking system to control powered wheel chair. User's eye movements are captured and sent to raspberry pi in which it identifies the position of the eye and send signals to the motor driver. The motor driver then sends commands to the motors so that the motors can move in a particular direction according to user needs. If the eye is moved left then the wheel chair also moves left, if the eye is moved right the wheel chair also moves right, single blink is to move forward and double blink is to stop the wheel chair. An ultrasonic sensor is placed to detect obstacles and send a voice message to the user. An emergency button is placed so that the user can send their GPS location via SMS to their relatives when pressed.

Keywords: Eye-controlled wheel chair, optical-type eye tracking system,raspberry pi, ultrasonic sensor, GPS.

I.INTRODUCTION

Security and Safety is one of the introductory musts in our day- to- day life. In numerous countries, the physically challenged and paralyzed people increase everyday due to the accidents or inheritable diseases.

• According to recent check by World Health Organization(WHO) it's noticed that about37.5 of population were being affected by palsy, which makes them feel worse in certain situations. These people are always dependent to do their work.

• So, a result is handed to this problem to make the physically challenged people to move singly from one place to another without anyone's help. Indeed though they move outdoors like other people, safety is veritably important for them. So, in order to make sure of their safety emergency alert system is handed during their unanticipated situation.

• In this model, we use the eye tracking system to control powered wheel chair user's eye movements are restated to raspberry pi through face corner recognition, without any direct contact.

• When the user moves his eye ball the camera prisoner the angle and sends it to Raspberry pi which helps in the movement of the wheel chair.

• Grounded on the eye ball direction the wheel chair moves left, right, straight and stops when the eye is blinked for a certain time.

• When an obstacle is detected, the ultrasonic detector stops the wheel chair and sends a signal to the speaker and a voice communication is transferred to the user. • If the user is in emergency and presses the emergency button the GPS position is transferred via SMS to his/ her relatives.

Fig 1:Quadriplegia diseased patient

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A SURVEILLANCE SYSTEM TO DETECT BIKES WITHOUT HELMET AND TRIPLE RIDERS

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ABSTRACT:
This paper presents a surveillance system to detect bikes without helmet and triple riders, Motorcycle accidents have been rapidly growing through the years in many countries. In India more than 37 million people use two wheelers. Therefore, it is necessary to develop a system for automatic detection of helmet wearing and triple rides for road safety. In order to maintain the road safety the government implemented the challan system, here we are introducing this system to get more accuracy. Therefore, a custom object detection model is created using a object detection and image processing techniques which can detect Motorcycle riders. On the detection of a Helmetless rider and triple rides, if the bike riders didn't wear helmets and if they are going with triple rides then at that time the whole image is captured by raspberry pi using web cam and that photo is send to the particular organization who are handling this process. This Application can be implemented in real-time using a Webcam.

Keywords: Raspberry pi, python, telegram bot.

INTRODUCTION:

In virtually each country, the two-wheeler is a frequent skill of transportation. However, due to the fact of the lack of protection, there is a large risk. It is quite encouraged that bike rid-ers use helmets to reduce the threat associated.

Two-wheelers are the most frequent motive of site visitors accidents. Though reckless and rash driv-ing is the major reason of these incidents, head accidents are the main motive of fatalities. According to research, extra than one-third of those killed in vehicle accidents should have lived if they had worn a helmet. Helmet use can limit accident deaths through 30 to 40%.

The variety of bike accidents precipitated by using riders who do no longer put on helmets has been frightening. According to a Delhi Police annual document (published in 2017), 35-40% of deadly accidents in the town in 2016 had been precipitated by means of riders "not carrying helmets" or "using helmets of insufficient quali-ty. According to the Section of the 129 Motor Vehicles Act of 1988 makes that it obligatory for two-wheeler riders to put on protection helmets. A helmet must additionally have a thickness of 20-25 mm and extraordinary foam, in accordance to the guideline. It additionally ought to be ISI-certified and adhere to Bureau of Indian Standards.

With the speedy pace of lifestyles and work, human beings have begun to compromise on the most necessary object they require to feature efficiently in a given scenario, namely, fantastic relaxation and sleep to remain ac-tive whilst performing a task. Drowsy riding is a incredibly unsafe phenomenon that has before resulted in severa accidents. According to sure studies, about 1200 human beings died and 76000 human beings had been severely injured as a end result of a fatigued driver who precipitated a crash. We can preclude huge site visitors accidents with the aid of the use of modern-day technological know-how and real-time scanning structures with cameras to inform vehicle drivers who are feeling drowsy thru a drowsiness detection system. The purpose of this assignment is to create a working prototype of a sleepiness detecting system. The center of attention will be on a framework that can consistently realize whether or not the driver's eyes are open or closed. It has been dis-covered that through focusing on the eyes, the onset of driver weariness can be detected in order to keep away from an vehicle accident. Drowsiness is detected the use of eye moves and the time between blinks to provide a rating that determines whether or not or now not a motorist is drowsy.

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Study, Analysis and Comparison of Mechanical Properties of GFRP Re-Bars with Steel Re-Bars Using Ansys Workbench for Bridge Application

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Abstract- In recent years the use of Glass reinforced polymer bars has increased due to its light weight, increased corrosion resistance of structures, greater service life. In this paper the comparison of steel re-bars and GFRP re-bars is performed by varying its diameter and applying boundary conditions in numerical method, ANSYS Workbench, according to the ASTM code.

The results of the ultimate Tensile Strength, Ultimate Tensile Strain, Transverse Shear strength, Bond Strength of both steel re-bar and GFRP re-bar are checked with the Literature review results. It is found that the GFRP re-bars is giving more strength compared to steel re-bar.

Key Points: GFRP re-bars, Steel re-bar, ANSYS Workbench, Bond Strength, ASTM code.

1. INTRODUCTION

A composite material can be defined as a combination of two or more materials that results in better properties than those of the individual components used alone. In contrast to metallic alloys, each material retains its separate chemical, physical, and mechanical properties. The two constituents are reinforcement and a matrix. The main advantages of composite materials are their high strength and stiffness, combined with low density, when compared with bulk materials, allowing for a weight reduction in the finished part. The reinforcing phase provides the strength and stiffness. In most cases, the reinforcement is harder, stronger, and stiffer than the matrix. The reinforcement is usually a fiber or a particulate. Particulate composites have dimensions that are approximately equal in all directions. They may be spherical, platelets, or any other regular or irregular geometry. Particulate composites tend to be much weaker and less stiff than continuous fiber composites, but they are usually much less expensive. There is a practical limit of about 70 volume percent reinforcement that can be added to form a composite. At higher percentages, there is too little matrix to support the fibers effectively.

Composites are high-performance composites, formulated using fiber or fabric reinforcement and shape memory polymer resin as the matrix. Since a shape memory polymer resin is used as the matrix, these composites have the ability to be easily manipulated into various configurations when they are heated above their activation temperatures and will exhibit high strength and stiffness at lower temperatures. High stain polymer are another type of high performance composites that are designed to perform in a high deformation setting and are often used in deployable systems where structural flexing is advantageous.

Characteristics of the GFRP:

1. High strength-to-weight ratio: GFRP is a lightweight material with high tensile strength and stiffness, which makes it useful in applications where weight is a concern.
2. Corrosion resistant: Unlike metals, GFRP is not susceptible to corrosion, making it ideal for use in harsh environments.
3. Dimensional stability: GFRP has a low coefficient of thermal expansion, which means it does not expand or contract significantly with changes in temperature.

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Effect of fuel additives on performance and emission characteristics of diesel engine fueled with custard apple biodiesel

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Abstract- **Biodiesel is an alternative fuel, which can replace diesel. Nowadays fossil fuels are creating a lot of pollution to the environment, so to minimize the causes and effects of diesel we can use biodiesel which can reduce pollution when compared to diesel. By using this biodiesel, we can perform the same operations that can be performed by the diesel since as per the literature survey the properties of the biodiesel are very similar to the diesel. Biodiesel can be prepared from animal fats and plant wastes. In this project, we are going to prepare biodiesel from custard seeds oil. Initially, oil is extracted from the seeds, to reduce the viscosity of oil, the transesterification process for oil is performed using methanol and KOH as catalysts to get ethyl ester and glycerol where glycerol is removed to form pure biodiesel. This biodiesel is blended with diesel in the B10(10%), B20(20%), B30(30%), proportions based on the diesel volume. Further fuel additives like Diethyl ether (DEE), and 1-butanol are added in at 5% and 10% to improve the ignition process. Performance, emission, tests are performed and the suggest results compared with the diesel to the better blend bio-diesel.**

Keywords: **Biodiesel, Custard apple seeds, Transesterification, KOH, Methanol, Diethyl ether (DEE), 1-Butanol.**

1. INTRODUCTION

Fossil fuels has dominated transportation sector since the invention of internal combustion (IC)engines in early nineteenth century. We all know the fuels like petrol, diesel are non renewable energy sources since they are depleting day by day more over they create a lot of environmental problems by releasing of lot of harm full gases like Nox, CO2 etc. To minimize these problems we can use the Biodiesel since Biodiesel has emerged as a strong diesel alternative. A large number of scientific studies have reported successful operation of CI engines with biodiesels derived from different feedstock. Biodiesel can either be used as a full replacement of minerals diesel or it can also be blended with mineral diesel in any proportion, Bio-diesel is essentially Sulphur free and engines fuelled with biodiesel emit significantly fewer particulates, hydrocarbons, and less carbon monoxide than those operating on conventional diesel fuel.

Biodiesel is a renewable, clean-burning fuel that is made from vegetable oils, animal fats, or recycled cooking oils. It is an alternative to petroleum-based diesel fuel that can be used in most diesel engines without any modifications. Biodiesel is produced through a chemical process called transesterification, which involves reacting the vegetable oil or animal fat with an alcohol, typically methanol or ethanol, and a catalyst, such as sodium hydroxide or potassium hydroxide.

Biodiesel has several advantages over traditional diesel fuel. It is a renewable and sustainable source of energy that can be produced domestically, reducing dependence on foreign oil. It is also cleaner burning than diesel fuel, emitting less carbon monoxide, particulate matter, and other harmful pollutants. In addition, biodiesel has a higher lubricity than diesel fuel, which can reduce engine wear and prolong the life of diesel engines.

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Modelling And Analysis of Shell and Helical Coil Heat Exchanger and Determining Its Effectiveness by Using Different Materials

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Abstract- A heat exchanger is equipment which facilitates the flow of thermal energy between two or more fluids at different temperatures. By analysis and experimentation of systematic data degradation which are done previously leads to the conclusion that the maximum heat transfer rates is obtained in case of the inward counter flow configuration. The references shows that effectiveness of counter flow heat exchanger is maximum compare to parallel flow.
In this project with the addition of counter flow heat exchanger we are going to change the materials of the heat exchanger to improve the effectiveness of heat exchanger, and how it is making the changes in COP of refrigeration. For this simulation we are using FLOW SIMULATION method in solid works.

Keywords: Effectiveness, Flow simulation

1. INTRODUCTION

In this project we are introducing shell and helical coil heat exchanger at the condensation process of a refrigerator. Instead of leaving coil to atmospheric air we are adding a shell around a coil and, in this shell the refrigerant will flow and the condensate will flow through the coil in counter flow direction.
In regular domestic refrigerators only the refrigerant is in motion and the atmospheric air will be stagnate so, we replaced the condenser with shell and helical coil heat exchanger to make both coolant and refrigerant to be in motion and we reduce the thickness of the helical coil and we change the material of the helical coil to increase effectiveness and heat exchange rate in heat exchanger.

A shell and helical coil heat exchanger is a type of heat transfer device commonly used in various industrial applications. It is a compact, efficient, and versatile heat exchanger that is widely used due to its high heat transfer rate, small footprint, and low maintenance requirements.
The aim of modeling and analysing a shell and helical coil heat exchanger is to determine its effectiveness in transferring heat between two fluids. This is done by using different types of materials to construct the heat exchanger and studying the effects on its performance.
The modelling process involves the use of mathematical equations, simulations, and flow simulation to predict the heat transfer rate and pressure drop in the heat exchanger. By varying the material properties, such as thermal conductivity and heat capacity, the impact of different materials on the heat exchanger's effectiveness can be analysed.
The analysis of the heat exchanger's performance can be used to optimize its design and select the most suitable materials for specific applications. Factors such as cost, durability, and thermal stability need to be considered when selecting the material.
In conclusion, modeling and analysing a shell and helical coil heat exchanger is an important process for determining its effectiveness and optimizing its design. By using different types of materials, it is possible to improve the performance of the heat exchanger and meet specific industrial requirements.

2.LITERATURE SURVEY

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Enhancing the Heat Transfer Rate of Automobile Radiator by Using Nanofluid as Coolant

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Abstract- **In today's world one of the most important tasks is to handle the energy available and to minimize the usage of it and to improve the alternate ways to save it. Talking about the automobile sector, engine is the prime energy source. Cooling system in any automobile system is of almost importance as it carries the heat from the engine and dispenses it to the atmosphere it also enhances the fuel economy and heat transfer rate which is turn helps in maximizing the engine performance. For this reason, we are proposing a way to increase the heat transfer rate in heat exchanger (Radiator) by using nano fluids.**

We are planning on designing an advanced radiator which is now using in latest automobile vehicles and analyzing the radiator by using base fluid & nano fluid. In this process we are going to compare the both results and we will find out the enhanced results obtained while using nano fluids.

Key words – radiator, nano fluid, ethylene, glycol, propylene, thermal conductivity, heat transfer coefficient, effectiveness.

1. INTRODUCTION

A radiator is a heating device used to transfer heat from a hot surface to the surrounding environment. Radiators are commonly used in central heating systems to warm a room by circulating hot water or steam through pipes that run along the walls, floors, or ceilings. The hot water or steam enters the radiator, which then heats up the surrounding air and radiates the heat into the room.

The earliest radiators were made of cast iron and were used in steam heating systems in the 19th century. These radiators were large and bulky, and often took up significant amounts of space in rooms. Over time, however, radiator designs improved and became more compact, allowing for easier installation and better heat distribution.

Today, radiators come in a variety of shapes and sizes, including traditional column-style radiators, flat panel radiators, and even designer radiators that are designed to complement a room's decor. They can also be made from different materials such as steel, aluminium, or copper. One of the advantages of using a radiator for heating is that it is a very efficient way to distribute heat throughout a room. Because radiators operate by transferring heat through convection and radiation, they can quickly warm up a space and maintain a consistent temperature. Additionally, radiators are generally low-maintenance and can last for many years with proper care.

However, radiators do have some drawbacks. For example, they can be slow to heat up and can take a while to reach their maximum temperature. Additionally, radiators can be unsightly and may take up valuable space in a room. Finally, because they operate by circulating hot water or steam, radiators can be noisy, especially when they are first turned on. Overall, radiators are a reliable and efficient way to heat a room. Whether you are looking for a traditional or modern style, there is likely a radiator that can meet

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Design and Fabrication of Surveillance Robot by Using Klann's Mechanism

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Abstract – This paper, discuss the development of a linkage-based amphibian legged robot for exploration and surveillance tasks. The klann's mechanism can access to places where the wheels cannot be used and it is even capable to travel any terrain and harmful places where the people con not work or travel like nuclear plants mining etc. It is very useful to patrolling purpose in army. It's like we want to merge the both trajectory of walking and climbing into one trajectory so it can perform both the motions in needed.
Design to mimic the moment of arachnids, this robot build s upon the ingenuity of the klann's mechanism. This system uses a motor setup paired to linkages which in turn accurate legs in synchrony. Its remote-control operation enables the operator to control this robot wirelessly

Index Terms – Klann Mechanism, Walking Robot.

1. INTRODUCTION

The main purpose is to replace the function of wheel in order to overcome the difficulty of travelling in uneven terrain. In this mechanism links are connected by pivot joints and convert the rotating motion of the crank into the movement of foot similar to that of animal walking. The proportions of each of the links in the mechanism are defined to optimize the linearity of the foot for one-half of the rotation of the crank. The remaining rotation of the crank allows the foot to be raised to a predetermined height before returning to the starting position and repeating the cycle. Two of these linkages coupled together at the crank and one-half cycle out of phase with each other will allow the frame of a vehicle to travel parallel to the ground.
A leg mechanism (walking mechanism) is an assembly of links and joints intended to simulate the walking motion of humans or animals. Mechanical legs can have one or more actuators and can perform simple planar or complex motion. Compared to a wheel, a leg mechanism is potentially better fitted to uneven terrain, as it can step over obstacles.
The Klann linkage provides many of the benefits of more advanced walking vehicles without some of their limitations. It can step over curbs, climb stairs, or travel into areas that are currently not accessible with wheels but do not require microprocessor control or multitudes of actuator mechanisms. It fits into the technological space between these walking devices and axle-driven wheels.
The scientific study of legged locomotion began just very a century ago when Leland Stanford, then governor of California, commissioned Edward Muybridge to find out whether or not a trotting horse left the ground with all four feet at the same time. The Stanford had wagered that it never did. After Muybridge proved him wrong with a set of stop motion photographs that appeared in Scientific American in 1878, Muybridge went on to document the walking and running behavior of over 40 mammals, including humans. His photographic data are still of considerable value and survive as a landmark in locomotion research. The study of machines that walk also had its origin in Muybridge's time. An early walking model appeared in about. It used a linkage to move the body along a straight horizontal path while the feet moved up and down to exchange support during stepping.

2. RELATED WORK

In 1878 the Edward Muybridge discuss the logical investigation of a legged movement started simply exceptionally a century prior when Leland Stanford, at that point legislative leader of California appointed

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Designing and Analysis of Excavator Bucket

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Abstract- ***A Excavator bucket plays a afflictive role in mining industries. Mostly excavator bucket was made of steel alloys mixtures. It is one of the most important component As the failure of excavator bucket causes the loss of production In this paper, we present a comprehensive study on the design and analysis of an excavator bucket using SolidWorks and ANSYS Workbench. The design process involves creating a 3D model of the excavator bucket using SolidWorks, followed by structural analysis using ANSYS to ensure its structural integrity and performance. The analysis includes finite element analysis (FEA) to evaluate the Life, Deformation, Damage and Equivalent altering stress of the bucket under different loading conditions. The results obtained from the analysis are used to optimize the design of the excavator bucket, ensuring its safety and reliability in operation***

Keywords: Excavator bucket, SolidWorks, ANSYS, Design, Finite Element Analysis (FEA).

1. INTRODUCTION

Excavator buckets are critical components of excavators used in construction and mining industries for various material handling tasks. The design and analysis of excavator buckets are crucial to ensure their structural integrity, performance, and reliability under heavy loads and harsh working conditions. SolidWorks and ANSYS Workbench are widely used software tools for 3D modelling and finite element analysis(FEA), respectively, and offer powerful capabilities for designing and analysing excavator buckets.

Here we designed the bucket with DOMEX STEEL ALLOY. Domex cold forming steels are thermo-mechanically rolled in modern plants where the heating, rolling and cooling processes are carefully controlled. The chemical analysis, consisting of low levels of carbon and manganese has precise addition of grain refiners such as niobium, titanium or vanadium. This together with a clean structure, makes Domex Steels the most competitive alternative for cold formed and welded products.

which is very strong and have all mechanical properties where the excavator bucket needed, and also Bendability and weldability properties which gives more advantage to bucket manufacturing. The design process involves creating a 3D model of the excavator bucket using SolidWorks, followed by finite element analysis (FEA) using ANSYS Workbench to evaluate its structural integrity and performance. The analysis includes stress analysis, deformation analysis, and optimization to ensure that the excavator bucket is safe and reliable under different loading conditions. Verification and validation of the model and results are also conducted to ensure accuracy and reliability. The design and analysis of excavator buckets are crucial in ensuring their optimal performance, durability, and safety. With advancements in computer-aided design (CAD) and finite element analysis (FEA) software, such as SolidWorks and ANSYS Workbench, engineers can create and simulate excavator bucket designs to evaluate their structural integrity, performance, and reliability. Material selection, geometry optimization, structural analysis, and optimization techniques are key aspects of excavator bucket design and analysis, aiming to achieve optimal performance with minimal weight and material usage.

Excavator buckets play a significant role in construction and mining operations, and their design and analysis have been the subject of extensive research and development. The literature review on

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EFFECT OF JOHNSON COOK PARAMETERS IN FINITE ELEMENT SIMULATION OF TI6AL4V ALLOY MACHINING

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Abstract:
Ti6Al4v alloy is an important material due to its properties like high strength to weight ratio. This alloy is widely used in aerospace, bio medical and power generation plants. However, the machining of Ti6A14Valloy is difficult due to its high chemical affinity towards cutting tool material which reduces the tool life. Johnson Cook material model is one important model which describes the relation between equivalent stress and thermomechanical load in machining process. The success of Finite Element simulation of machining depends on material model parameters (A,B,C, n and m) used for that particular machining process. Hence, the suitable set of Johnson cook parameters is inevitable for success of machining process. Hence, this work deals with multiple sets of JC parameters available in literature and finds the suitable set of JC Parameters for accurate machining process.

1. Introduction

Modern industrial manufacturing aims to produce high quality products with reduced time and cost. Automated and flexible manufacturing systems such as the computerized numerical control (CNC) machines are employed for that purpose, which are capable of minimizing the processing time while achieving high accuracy. Turning process is one of the most used methods for cutting and the finishing of machined parts. In this process, it is vital to select input (cutting) parameters with precision for achieving high cutting performance. Generally, the required cutting parameters are chosen based on past experience or by following guidelines from a handbook [i].Experiments are condition specific and needs resources and time; therefore, the researchers have adopted a fairly common technique of simulating their hypothesis and comparing the physical results. The finite element method has been extensively employed for cutting process simulations and optimization of the process parameters [3, 5 - 10].

Linhu Tang et al. [4] used finite element method to simulate the machining of AISI D2 tool steel with CBN cutting tool using dry hard orthogonal cutting process. Authors used experimental data available in literature to verify the FE model. Element removal technique based on nodal stresses was adopted for chip formation using the updated Lagrange model. An iterative technique for finding the friction coefficient was used while isotropic friction coefficient was taken from literature. The FE results deviated from the experimental results by an average of 8%. Xiamon Deng et al. [5] investigated the effects of rake angle and friction coefficient in orthogonal cutting to account for the local temperature rise due to conversion of friction and plastic work into heat.Adiabatic conditions was assumed. The FE model used a chip separation criterion and Coulomb law modelling dry friction at the tool-chip-contact. Simulation results were obtained for temperature, stress, strain, and strain rate fields by varying rake angle and coefficient of friction.

Movahhedy et al. [6]used Arbitrary Lagrangian-Eulerian(ALE) formulation which gives better mesh adaptability. However, remeshing technique and chip separation criterion were avoided due to material flow around the tool. Xiamon Deng et al. [7] simulated the orthogonal cutting process and determined the effects of friction on thermo mechanical quantities under plane strain conditions. They used a modified coulomb's friction law in order to successfully model the phenomena of friction along the tool-chip interface. To simulate the chip separation, finite element nodal release procedure was adopted. Rake angle and friction coefficients were varied and it was shown that the

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EXPERIMENTAL INVESTIGATION ON PERFORMANCE AND EMISSION CHARACTERISTICS OF DIESEL ENIGINE FUELED WITH PALLMYRA BIODIESEL

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Abstract-

The constant increase in the consumption of fossil fuels is consequent upon the ever-increasing population in the present days. The Greenhouse Gas emissions from these fossil fuels are constantly degrading the planet and causing global warming and other pollutant emission-related problems. As such, the situation demands an alternate source of energy that can be used to overcome the forecasted future energy crisis. In addition, if the energy source is clean and renewable, it will also reduce environmental issues. In this quest for an alternate and renewable energy resource, scientists have come up with a variety of options among which biodiesel-diesel blends as alternative fuels have become a popular option and have the attention of many researchers.

In this work biodiesel production from palmyra seeds oil has been synthesized by a transesterification process with the influence of catalyst concentration, methanol is used to produce the palmyra oil methyl ester from the palmyra crude oil which is extracted from the palmyra seeds by the application of mechanical pressing operation. Preliminary tests will be conducted with Palmyra Oil Methyl Ester blends (POME10, POME20, POME30, POME40) of palmyra biodiesel on a diesel engine at a fixed engine speed of 1500 rpm, no load to full load, and at a compression ratio of 16.5:1. The impact of various load on fuel consumption and exhaust gas emissions will be examined. The current work is to explore the impact of biodiesel blends on the efficiency and emissions of diesel engines.

KEYWORDS: Palmyra oil, Transesterification, Palmyra oil methyl ester (POME), Biodiesel, Performance, Emission.

1. INTRODUCTION

The exponential increase in energy demand in the past few decades are be due to rapid urbanization and industrialization. Urbanization of developing countries practically relies on energy (i.e. renewable and non-renewable) sources. Fossil fuels are the primary source of fulfilling such energy requirements. Industries and transport sectors are dependent primarily on fossil fuels. The exhaustion of fossil fuels in the next few decades could increase costs and the associated impact on global warming and greenhouse gas emissions are the primary reasons that require extensive research on alternate fuels for the future. Biodiesel seen be the potential alternative to diesel fuel that compensates for high energy demand. In addition, the use of biodiesel does not seek a major modification to the existing diesel engine. Biodiesel production from renewable energy sources (oils derived from plant and animal fat) possesses excellent features such as biodegradability, nontoxic, carbon neutral, and eco-friendly.

In recent years, edible (soybean, sunflower, coconut, palm, pine, and so on) and non-edible (mahua, Karanja, jatropha, cotton seeds, algae, etc.) oils are used as a potential source for the production of biodiesel. India has the world's second-largest population and the fulfillment of huge energy demand with edible and non-edible oils has been criticized due to its low sustainability, shortfall of agricultural land, and conflict with food and fiber

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Enhancement of Heat Transfer Rate in Shell and Tube Heat Exchanger of Using Base Fluids and Nano Fluids

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Abstract- **The development of Nanotechnology has witnessed an emergence of new generation of heat transfer fluids known as Nano fluids. Nano fluids are used as coolants which provide excellent thermal performance in the device called heat exchangers. However, the viscosity of these fluids increases with the addition of nanoparticles. Furthermore, Various Nano fluids are potential working fluids for heat transfer applications, according to the studies, using Nano fluids increase the thermal conductivity and conductive heat transfer coefficients compare to the base fluids. In heat exchangers, due to the high thermal performance of Nano fluids than Base fluids, it can be used in various processes of cooling and heating.**
In this project we are introducing the nanofluids like alluminium oxide in the shell and tube heat exchanger and we are comparing the base fluids and nano fluids by using them in heat exchanger. By using Flow simulation, we are going to prove that which is enhancing the heat transfer rate and improving the effectiveness of heat exchanger.

Keywords: **Nano technology, Effectiveness, Flow simulation, base fluids and nanofluids.**

1. INTRODUCTION

In this project we are introducing Shell and tube heat exchangers are widely used in various industries for transferring heat between fluids. These heat exchangers consist of a bundle of tubes, with one fluid flowing through the tubes and the other flowing on the outside of the shell. The efficiency of heat transfer in these heat exchangers can be enhanced by using base fluids and nanoparticles that have high thermal conductivity.

The use of nanofluids, such as aluminum oxide (Al2O3) nanofluid, has gained attention in recent years as a means of improving heat transfer in shell and tube heat exchangers. These nanofluids are characterized by the addition of small amounts of nanoparticles to base fluids, which have a much higher thermal conductivity than the base fluids alone. As a result, they can significantly enhance the heat transfer by increasing the rate of heat transfer across the shell and tube surface.

The heat transfer enhancement properties of nanofluids have been extensively studied in recent years, and research has shown that the addition of nanoparticles significantly increases the thermal conductivity of base fluids, which in turn leads to a higher rate of heat transfer. Furthermore, since the viscosity of these nanofluids is lower than that of the base fluid, the pressure drop across the heat exchanger is reduced, which can further improve the efficiency of heat transfer.

The use of aluminum oxide in nanofluids has been shown to have particularly good heat transfer enhancement properties. This is because aluminum oxide has a high thermal conductivity and excellent stability, making it an ideal material for use in heat transfer applications.

Overall, the use of nanofluids, particularly those containing aluminum oxide, can significantly enhance the efficiency of heat transfer in shell and tube heat exchangers. As such, they represent an attractive option for improving the performance of these important devices in various industrial applications.

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AN ENHANCED ENSEMBLE HYBRID DEEP LEARNING ALGORITHM FOR IMPROVING THE ACCURACY IN IRIS SEGMENTATION

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Abstract

In recent years, there has been a meteoric rise in the application of deep neural networks for the purpose of iris segmentation. This can be attributed to the extraordinary capacity for learning possessed by the convolution kernels that are utilised by CNNs. Conventional methods have several drawbacks, some of which can be partially compensated for by using CNN-based algorithms, which increase the segmentation precision. On the other hand, the CNN-based iris segmentation approaches that are currently in use typically require a more complex network, which results in an increase in the number of parameters. This is essential to realise a higher degree of precision in the results. CNN-based techniques are effective, they can only be used for a specific application. This makes them inappropriate for general iris segmentation goals, even though they are effective.

Keywords:

Ensemble Model, Deep Learning, Iris Segmentation

1. INTRODUCTION

When developing an iris identification system, the first stage in the preprocessing phase must always be the segmentation of the iris [1]. If the segmentation of the iris is done incorrectly, it is possible for identity-related information to be erased as well as for new interferences, such as eyebrows and eyelashes, to be introduced. Both factors can contribute to a reduction in the precision of iris identification. Iris segmentation has several important applications, not the least of which is in the field of medicine, in addition to its use in devices that perform iris identification [2].

Before an effective computer-assisted ocular disease diagnosis can be made, the pre-processing pipeline must first be finished, which includes an important first stage known as accurate iris segmentation. This stage must be finished before the next stage in the pipeline can begin. The ability to divide the iris is clinically significant because it facilitates in the early discovery of neovascular glaucoma. This is one of the most common causes of blindness worldwide. The capacity to divide the iris is essential for a few reasons, but this is one of the most significant ones. As a direct consequence of these issues, several individuals have begun offering solutions in the form of suggestions for improved methods of iris segmentation. There are still a great many obstacles to overcome in this branch of research [3].

Iris recognition devices require input from a person, they are vulnerable to a wide range of restrictions on account of this requirement. Iris photographs, on the other hand, taken in settings with a less stringent degree of control are more likely to have an excessive amount of ambient noise in the background. This noise may be brought on by several different things, such as motion blur, occlusions brought on by the eyelids or eyelashes, occlusions brought on by spectacles, position offset, and other similar things.

Taking an image of an iris can be done with either visible light or near infrared photography, which are the two most prevalent approaches. The other technique that is frequently used is called near-infrared. The iris is responsible for producing an image, the clarity of which can be significantly influenced by factors such as the lighting and the background [4].

Eye segmentation techniques that are based on manual labour and convolutional neural networks respectively are the two primary categories of techniques that fall under the category of earlier methods. The Hough transform is the fundamental building block upon which most of the diverse segmentation approaches that are presently in use are constructed. The only circumstances in which these conventional techniques can produce segmentation results that are up to standard are those that are ideal. Conventional methods of iris segmentation will have a much lesser degree of accuracy if there is extraneous noise present in the image of the iris that is being segmented [5].

2. LITERATURE SURVEY

The steps that are involved in the conventional method of iris recognition are as follows: taking a image of a person iris, putting that image through a series of mathematical operations to generate a feature vector, using that vector to generate an iris code, and finally storing that code as a template. This method is used to identify individuals based on their eyes. During the authentication process, these iris templates are compared to a freshly created template of the same iris by making use of distance measurements. This comparison takes place between two templates of the same iris. Depending on the format in which the textured data is presented, the two primary techniques that have emerged for extracting iris features are the use of real-valued feature vectors and binary iris codes. The length of real-valued feature vectors is longer than that of binary retinal codes. The first device that was able to successfully recognise iris patterns was built with the help of the former method [6].

Daugman method for separating the iris from the rest of the eye depended on the assumption that the pupil is spherical, which is not always the case. This is because the iris is much more circular than the rest of the eye. There are a few distinct methods that can be utilised to dissect the iris from the remainder of the eye. In addition, real-valued feature vector-based techniques make use of transformations that are comparable to the binary iris code; however, the product of these transformations is real-valued vectors rather than binary codes [7].

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ASSESSMENT TECHNIQUE USING WAVELET TRANSFORM FOR IMPROVISING THE SCREEN CONTENT IMAGE QUALITY

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Abstract

Within the confines of this article, we advocate for the utilisation of wavelet transforms in teleconferencing environments as a means of improving the overall video quality. This can be accomplished by increasing the number of participants in the conference. The fundamental concept behind this is to use a collection of high-quality, professionally captured facial images as examples for the purposes of training, and the collection should include as many unique faces as is practically feasible. Images are often changed to make the skin tones and contrast of the facial regions more appealing to the viewer gaze. Adjustments are made to the colouring of a new picture so that the colour distribution in the face region will be comparable to that of the training pictures. This method is very effective when it comes to computation, and it also makes it much simpler to automate the process of making enhancements. The results of user research experiments are presented here, which demonstrate how the suggested method can improve the viewer perception of the video overall quality. The experiments were carried out to determine how the suggested method can accomplish this.

Keywords:

Wavelet Transform, Screen Content, Image Quality

1. INTRODUCTION

There is a wide variety of filters available, the most common of which are spatial and spatial frequency domain filters. Other types of filters also exist. To be more specific, wavelet denoising filters and other spatial frequency domain filters that are used to decrease noise in degraded gamma images have disadvantages when compared to spatial domain filters [1]. These filters are used to decrease noise in degraded gamma images. Noise can be reduced with the help of these filters. The acquisition of the denoised gamma image in techniques that are based on filters in the spatial frequency domain requires many parameters, and the setting of the value requires more sophisticated methods [2].

Because of how easily they can be implemented to lessen the impact of noise distribution, academics make extensive use of spatial domain filters. This is because the procedure generally involves doing nothing more complicated than setting up a new matrix [3]. In addition, many researchers have developed novel noise reduction filters and enhanced the efficiency with which previously developed noise reduction filters can be applied to images that have been damaged [4].

Filters in the spatial domain, such as Wiener, median, and Gaussian filters, are frequently used to minimise the noise distributions in deteriorated images [5]. By adjusting the mask of a new matrix that is n by m in size, these filters make it possible to restore definition to a photograph that had previously lost its sharpness. These filters are helpful in that they concentrate the signal intensity while preserving the edge signal of the image.

Spatial domain filters are useful for cutting down on background noise [6] because they improve the quality of the signal while also decreasing the amount of image distortion that occurs. In addition, the Wiener and median filters are frequently combined to generate a hybrid filter. This hybrid filter is then applied to images of low quality to improve the way they look. The median-modified Wiener filter, also known as the MMWF, is a technique for reducing the distribution of noise. In this approach, the median value of the mask matrix is used instead of the average value of the mask matrix, which is the value that is considered by the Wiener filter [7].

The noise distribution in X-ray images can be evaluated with the help of these filters, which are utilised quite frequently, and the level of noise can be reduced with their help [8] [9]. On the other hand, the application of such filters to images used in nuclear medicine has only been the subject of a relatively modest number of studies. The purpose of this research was to ascertain whether it is advantageous to make use of images that have a greater degree of screen sharpness [10] [11].

The colour of a image that is being used as an input can be altered by selecting the appropriate grouping to use as a target in the process of colour correction. They demonstrated that the method is effective for improving the colour accuracy of outdoor landscapes, provided that the user is present to select a suitable cluster to work with. This is a prerequisite for the method success. On the other hand, the problem of how face images are interpreted was not addressed, and it is not obvious how their method could be modified to work with video.

2. PROPOSED MODEL

In the field of mathematics, the action of moving data from one location to another is referred to as a transformation. When images are processed and analysed, a broad variety of transforms are used. Some of these transforms reveal information about the spatial frequency at which the grey levels in a image change. On the other hand, the primary objective is to eradicate any correlation that may exist between the information contained in the different image sections. The geographic and frequency information of the initial data is preserved by both the wavelet and Haar transforms, even though they achieve this goal in very different methods.

In a nutshell, a transformation is the process of translating one collection of image data to another mathematical region by using an equation that represents a transformation. This translation takes place using an equation that represents a transformation. On the