CRITERION: 3.3.2

Number of research papers per teachers in the Journals notified on UGC website during 2021-22

Sl. No.	Details	No. of papers	Page No.
1	Details of research paper publication	27	02
2	Screen shots of research articles for CIVIL	02	06
3	Screen shots of research articles for CSE	13	08
4	Screen shots of research articles for ECE	03	21
5	Screen shots of research articles for EEE	03	24
6	Screen shots of research articles for MECH	05	27
7	Screen shots of research articles for S & H	01	32

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S. No.	Title of paper	Name of the author/s	Name of journal	Link to the Journal website	Link landing to the paper/article	UGC CARE list/Scopus/Web of Science/other
CIVIL						
1	Effect of high nitrate contamination of groundwater on human health	Dr. R. Saravanan	Arabian Journal of Geosciences	https://www.springer.com/journal/12517	https://link.springer.com/article/10.1007/s12517-022-09553-x	other
2	*Spatial distribution of groundwater quality assessment using water quality index and GIS techniques in ThanjavurTaluk, Thanjavur District, Tamilnadu, India.	Dr. R. Saravanan	International Journal of civil engineering and agricultural engineering.	https://sietjournals.com/index.php/ijceae/index	https://sietjournals.com/index.php/ijceae/article/view/142	other
CSE						
3	Analysis of cloud Analytic tool	Dr. S. M. Uma Ms.R.S. Karthiga Ms. S. Priyadharshini	International Journal for Science and Advance research in technology,	https://ijsart.com/Index	http://ijsart.com/Home/IssueDetail?id=55667	other
4	Some enhancements in the choice of functionalities for data mining and their application in opinion Mining	Dr.S.M.Uma	International Journal of nuclear energy science & power generation technology	https://www.scitechnol.com/nuclear-energy-science-power-generation-technology.php	https://www.scitechnol.com/peer-review/some-enhancements-in-the-choice-of-functionalities-for-data-mining-and-their-application-in-opinion-mining-RWca.pdf	SCOPUS
5	"Yoga Posture analysis using Deep Learning techniques"	Dr. S. M. Uma	IRJMETS ,	https://www.irjmets.com/index.php	https://www.irjmets.com/uploadedfiles/paper//issue_6_june_2022/27184/final/fin_irjmets1656693645.pdf	other
6	Practical approach to the defect prediction model for software testing	Dr.D.Sivakumar	International Journal of nuclear energy science & power generation technology july	https://www.scitechnol.com/nuclear-energy-science-power-generation-technology.php	https://www.scitechnol.com/peer-review/practical-approach-to-the-defect-prediction-model-for-software-testing-RnJk.pdf	other

7	"RFID & password based door lock system with notification"	Mr. S. Rajarajan	IRJMETS,	https://www.irjmets.com/	https://www.irjmets.com/uploadedfiles/paper/issue_6_june_2022/27179/final/fin_irjmets1656695685.pdf	other
8	"Deep Learning Based Plant disease prophecy, using leaf image".	Ms. G. Chandra Prabha Ms. R. Suganthalakshmi Ms. S. Puvaneswari Ms. K. Abhirami	IRJMETS,	https://www.irjmets.com/	https://www.irjmets.com/uploadedfiles/paper/issue_7_july_2022/28892/final/fin_irjmets1659171700.pdf	other
9	"Block chain based certificate validation system"	Ms. G. Chandra Prabha Ms. R. Suganthalakshmi Ms. S. Puvaneswari Ms. K. Abhirami	IRJMETS, Volume 4, Issue 7/ July 2022.	https://www.irjmets.com/	https://www.irjmets.com/uploadedfiles/paper//issue_7_july_2022/28889/final/fin_irjmets1659003745.pdf	other
10	" Automatic Speed controlling of vehicle based on signboard detection using image processing"	Mr. M. Arun	IRJET, Volume 8, Issue 5 / May 2021	https://www.irjet.net	https://www.irjet.net/archives/V9/i1/IRJET-V9I1304.pdf	other
11	Unsupervised image clustering using different CNN architecture	Ms. S. Priyadharshini Ms.D.R. Saranya	IJSART, Volume 8, Issue 7/ July 2022	https://ijsart.com/Index	https://ijsart.com/Home/IssueDetail/55595	other
12	"Secured Application for E-Ballot using two factors Authentication".	Ms. S. Puvaneswari	IRJMETS, Volume 4, Issue 6 / Jun 2022.	https://www.irjmets.com/	https://www.irjmets.com/uploadedfiles/paper/issue_6_june_2022/27167/final/fin_irjmets1656693439.pdf	other
13	A Smart Android application for real time accident alert	Ms. S. Puvaneswari	IRJMETS, Volume 4, Issue 6 / Jun 2022.	https://www.irjmets.com/	https://www.irjmets.com/uploadedfiles/paper/issue_6_june_2022/27175/final/fin_irjmets1657691303.pdf	other
14	An efficient approach for diagnosing the breast cancer using deep learning.	Mr. S. Rajarajan	SPECIALUSIS UGDYMAS	http://sumc.lt/index.php/se/index	http://sumc.lt/index.php/se/article/view/818/633	other
15	Analysis of cloud Analytic tool.	Ms. R. S. Karthiga Dr. S. M. Uma Ms. S. Priyadharshini	International Journal for Science and Advance Research in Technology (IJSART), Volume 8, Issue 7, July 2022	https://ijsart.com/Index	https://ijsart.com/Home/IssueDetail/55667	other

				ECE		
16	Sensing and Analysis of Greenhouse Gas Emissions from Rice Fields to the Near Field Atmosphere	Rajasekar, P, Arputha Vijaya Selvi J	Sensors, no. 11: 4141,2022	https://www.mdpi.com/journal/sensors	https://www.mdpi.com/1424-8220/22/11/4141	Others
17	Intrusion detection system for big data analytics in IOT environment	Dr.T.Shanthi	Computer system science and Engineering	https://jise.iis.sinica.edu.tw/	https://techscience.com/csse/v43n1/47077/pdf	SCOPUS
18	Advanced secure electronic voting machine using deep learning.	Mr.P.Rajapirian	International Journal of Scientific research in Engineering and Management,	https://ijsrem.com/	http://ijsrem.com/volume-05-issue-10-october-2021/	Others
				EEE		
19	Smart Cities Monitoring Setup Using IoT	Dr.M.Meenalochani, Abirami.U, Chandrapriya.S , Premalatha.N	International Journal of Advanced Research in Innovative Discoveries in Engineering and Applications (IJARIDEA)	https://ijaridea.com/	https://ijaridea.com/index.php?option=com_login&view=viewpaper&id=185&fname=v7i3&ftype=journal	other
20	IoT Based Automation System	P.Thirumagal, Bavana.K , Kaviya.M, Priyadharshini.S	International Journal of Advanced Research in Management, Architecture, Technology and Engineering (IJARMATE)	https://www.ijarmate.com/	https://www.ijarmate.com/ index.php?option=com_login& task=download_volume_doc & fname=v8i6&foldertype=journal&id=1267	other
21	Wireless and Automatic Recharge for Electric Vehicles	J.Arokiaraj , Jagadeshwaran.S, Jayaprakash.R, Mohamed Halith.S, Raguraman.R	International Journal of Advanced Research in Innovative Discoveries in Engineering and Applications (IJARIDEA)	https://ijaridea.com/	https://ijaridea.com/index.php?option=com_login&view=viewpaper&id=186&fname=v7i3&ftype=journal	

			MECH			
22	Effect of Silicon Carbide on Microstructural, Mechanical and Corrosion Behavior of Electrolytic Copper Matrix Composite Produced by the Powder Metallurgy Route	M Melwin J Sridhar, M Ravichandran, M Meignanamoorthy, V Mohanavel	Silicon	https://www.springer.com/journal/12633	https://link.springer.com/article/10.1007/s12633-021-01369-w	UGC CARE list/Scopus/SCI
23	Investigation on Performance and Emission Characteristics of CI Engine Fuelled with CucurbitaPepo L. and ProsopisJuliflora Seed Oil Biodiesel Blends	V Vinothkannan, T Pushparaj	Tierärztliche Praxis	https://tierarztliche.com	https://tierarztliche.com/gallery/v40.15.pdf	UGC CARE list/Web of Science
24	Experimental Investigation on Performance, combustion and Emission Characteristics of CI Engine Fuelled with Pumpkin and Maize Biodiesel blends.	N Magesh, T Pushparaj, V Vinothkannan	Tierärztliche Praxis	https://tierarztliche.com	https://www.tierarztliche.com/gallery/v41.5.pdf	UGC CARE list/Web of Science
25	Comprehensive Assessment of Performance and Emission Characteristics of Pumpkin Seed Oil with (C2H5)2O and Jojoba Seed Oil with C5H12O in C.I Engine	H Agilan, T Pushparaj, J Rajaparthiban	Tierärztliche Praxis	https://tierarztliche.com	https://tierarztliche.com/gallery/v41.30.pdf	UGC CARE list/Web of Science
26	Influence of different reinforcements on properties of copper matrix composites: A review	M MelwinJagadeesh Sridhar, M Ravichandran, M Meignanamoorthy	AIP Conference Proceedings	https://aip.scitation.org/journal/apc	https://aip.scitation.org/doi/abs/10.1063/5.0029257	Web of Science/Scopus
			S&H			
27	ISOMORPHIC SINGLE VALUED NEUTROSOPHIC GRAPHS AND THEIR COMPLEMENTS	J. MALARVIZHI, T. GNANAJEYA and T. GEETHA	Advances and Applications in Mathematical Sciences	https://www.mililink.com/journals_desc.php?id=59	https://www.mililink.com/upload/article/495896844aams_vol_208_june_2021_a4_p1375-1388_j._malarvizhi_and_t._geetha.pdf	Web of Science

Effect of high nitrate contamination of groundwater on human health and water quality index in semi-arid region, South India

Saravanan Ramalingam[1] · Balamurugan Panneerselvam[2] · Shunmuga Priya Kaliappan[3]

Abstract

The specific objective of the present is to evaluate the human health issue due to the continuous consumption of nitrate-contaminated groundwater among the various age groups of people. In the study, 40 groundwater samples were collected during the post-monsoon season, and the major ions were analysed in a laboratory. Chadha plot revealed that weathering of parent rocks, ion exchange process and leaching of salts from the rocks are primary sources of groundwater contamination. Nitrate concentration varied from 24 to 78 mg/L with a mean of 46.45 mg/L. Nitrogen pollution index (NPI) value divulged that 40% and 17.5% of sample locations are moderately and significantly polluted due to elevated nitrate concentration in groundwater. The human health risk assessment model revealed that health issues are among the various age groups which are infants > kids > children > aged peoples > adults. The nitrate's identified sources are leaching of salts from the rocks, using synthetic fertilizers, uncovered septic tanks and improper disposal of household waste from the residential area. Therefore, periodic inspection of water supply, health check-up and inspection of underground pipelines are the remedial measures that should be taken to reduce the severe effects of nitrate-contaminated drinking water in the study area.

Introduction

Nitrogen in the various forms of nitrate, nitrite, or ammonium in groundwater is a nutrient needed for enhancing the crop yield and plant growth. In general, hundreds of tons of nitrogen spill unnoticeably into the soil, water and air every day from various man-made activities such as farms, smoke stacks and vehicle emission (Adimalla 2020; Kumar and Balamurugan 2018; Abd Al-Khodor and Albayati 2020). The result of the nitrate contamination causes unhealthy air, polluted drinking water, degraded ecosystem and consequences for climate change. In view of degraded ecosystem,

the excess nitrate might be the reason for water contamination, reduced biodiversity and loss of certain plant species (Balamurugan and Kumar 2016; Balamurugan and Balakumaran 2015; Alardhi et al. 2020b). Groundwater is a primary source of water and higher percentage of world population depends on it for their day-to-day needs (Balamurugan et al. 2020a; Kumar and Balamurugan 2019; Alardhi et al. 2020c). In India, most urban and rural peoples depend on groundwater for domestic, agriculture and industrial purpose. However, with the rapid increase in population growth, urbanization, industrialization and modernization of agricultural activities are major threats to the quality of groundwater (Balamurugan et al. 2020b). The effects of the groundwater contamination have become a serious issue in community of public health and livestock. Expressly, the consumption of contaminated water can cause many health effects on human community and it is essential to assess the suitability of groundwater for drinking uses. Among the various contaminations, nitrate (NO_3^-) pollution is the widespread environmental disaster, which has two different sources such as natural and anthropogenic sources. The excessive anthropogenic loading such as agricultural waste that includes fertilizer, pesticides, organic, inorganic waste

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Spatial distribution of Groundwater quality assessment using Water Quality Index and GIS techniques in Thanjavur Taluk, Thanjavur District, Tamil Nadu, India

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Abstract: Assessment of groundwater quality is of utmost importance to ensure sustainable use of water. Since the availability of water, irrespective of quantity and quality, varies from area to area in Thanjavur taluk. The present paper attempts to determine the spatial distribution of groundwater quality parameters and identify locations with the best quality for drinking and irrigation in the study area using GIS and WQI. Using IDW interpolation methods with ArcGIS 10.8, the spatial distribution maps of physical parameters, anions, cations, WQI, and irrigations indices have been generated. Piper pilot shows that Ca-Mg-Cl (mixed), Na-Cl, Ca-Cl, and Ca–Mg–HCO3 water types are found in the study area. Using a water quality index with a rating scale, 42.85%, 28.57%, and 14.3% of groundwater samples are fit, good, and very poor for drinking purposes, respectively. The obtained results of higher SAR, RSC, Na% show that 75% of groundwater samples are perfectly fit for irrigation purposes due to the long residence time of water, dissolution of minerals from lithological composition, and the addition of chemical fertilizers. The results of groundwater quality analysis have been used to suggest models for assessing water quality. The present study ascertained that the area's groundwater must be treated prior to consumption and protected from the perils of contamination.

Analysis of Cloud Analytic Tool

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Abstract- *Cloud computing is a common word for everything that provide hosted services over the world wide web. Cloud computing provides three major services: Platform as a service (PaaS), Software as a service (SaaS) and Infrastructure as a service (IaaS).To implement a cloud computing model, cloud infrastructure requires the hardware and software components. Cloud computing is the on-demand computing. In this paper, we are going to analysis the most excellent cloud analytics tools on the marketplace.*

Keywords- Cloud computing and analytic tools

I. INTRODUCTION

Cloud computing is the on-demand accessibility of computer resources, particularly storage of data and power computing, without straight management of user. In cloud data is distributed over various locations and every locations is considered as data center. Cloud computing relies on using a "pay-as-you-go" model by distribution of resources. So it can avoid the capital cost of users but may increases the operational cost of ignorant users. The main aim of cloud computing is to take advantages from all of the technologies by the users, without having a more understanding about or skill with all of them.

The cloud goal is to reduce the expenses and assist the users concentrate on their main business instead of having delay by software barrier.The cloud computing major tool is virtualization. Virtualization software do computing tasks by separating a hardware device into more "virtual" devices, each devices can be effortlessly useable and manageable.

Cloud analytics describe the function of analytic the data against a private or public cloud for bring a outcome of users significance. It involves use of scalable cloud computing with great analytic software to data pattern identifications and to mine latest insights. It is one kind of analytics model that transfer processing of data and storage operations to a public or private cloud. Due to needs of several analytics requirements for companies used this model.

cloud analytics:

The process of analytics a data in a private or public cloud is called cloud analytics. Cloud analytics services and applications are provided based on subscription or price model.

Gartner defines the six major analytics elements such as distribution or storing of outcomes, sources of data, models of data, applications processing, power computing and cloud models of analytic.

The products and services of cloud analytics examples are software-as-a-service business intelligence (SaaS BI), hosted data warehouses and social media analytics based on cloud.

Software-as-a service business intelligence (called as *cloud Business Intelligence* or *on-demand Business Intelligence*) used to send business intelligence (BI) applications from a hosted locations to users. It is a scalable model and establish business more easier and low price, but in-house application, product might not provide the same characteristics. For social media applications cloud based analytics tools provide the remote delivering of tools for choosing the application from social media sites, to gather data for the applications, services for storage and software based on data analytics in social media.

A hosted data warehouse is a centralized depository for data that is provided to accessible of data from remote

Some Enhancements in the Choice of Functionalities for Data Mining and their Application in Opinion Mining

Brijendra Gupta[1]*, Girish kulkarni[2], A Rajesh Kumar[3], VS Padmini[4], SM Uma[5] and Devika Rani Roy[6]

Abstract

Digital marketing is playing an increasingly important role in e-commerce, particularly in terms of sharing meaningful information about a product or service. Information extraction has emerged as the most important technique in digital marketing. The method of recommender systems in social sites while looking at the various types of argumentative documents, as well as the difficulties connected with a machine translation from social media, are addressed in this article. Using an image recognition tool, a K-means clustering algorithm has been used to a sample Twitter database to aggregate various attitudes in relationship with different product characteristics. The technique has been tested and described with the aid of the tool. Computing methods cluster analysis topics in Computer Science.

Keywords: K-Means; Sentiment analysis; Analytics; Compatibility

Introduction

Social media monitoring and analysis

The primary goal of the social mainstream press is to maintain a relationship through all online communications such as interactions, sharing of personal views, and receiving necessary information. The primary reason for selecting Social Media Analytics (SMA) is to showcase the goods or services being promoted [1].

- Social platforms have surpassed all other online activities and have become a daily pastime for adults.

- Provides a simple method of grouping consumers *via* the use of the internet.

- Context of providing about either the Product/Service is simple and quick to do.

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Facilitates the collecting and evaluating comments on a specific Product/Service by providing a simple interface.

Because although Social Media Analytics (SMA) can assist in determining the needs and sense of achievement of users, it is extremely important to obtain accurate or valuable information again from comment sections or likes that are gained on social networking sites. As a result, we must go through a special protocol in process of extracting the appropriate information from multiple information. The Social Networking Tools aid in the collection and interpretation of textual material to make it more structured. The method of "recommender systems" is one of the most important in the field of Social Networking Sites. An "assessment" is a point of view, attitude, or assessment of a thing expressed by a person or organization about that item. Opinion Mining (OM) is a research field that focuses on the collection of views or sentiments from data utilizing. It is all about discovering what individuals believe and how they act. OM must take into consideration the amount of impact that each one point of view has. This may be influenced by a variety of reasons, such as faith in the product, company, or individual.

Organization responsible: It is analogous to a group of individuals who have similar views and who put their faith in the viewpoints of the other members of the team.

Credibility: If your suggestion is similar to whatever the overwhelming of others believes, then you are regarded as experienced and then have a high level of renowned trust.

Information Extraction Via Social Media is Becoming More Popular

A significant amount of opinionated material may be found on every website on the internet; the typical individual comment will have trouble selecting relevant websites and absorbing the opinions and insights included within them [2]. Figure 1 depicts the overall picture
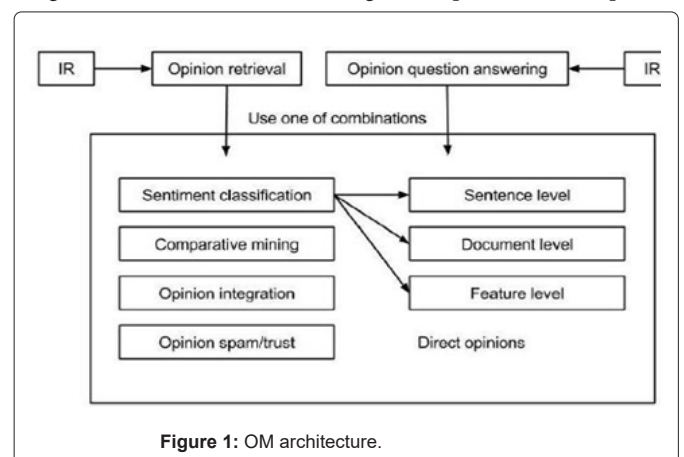

Figure 1: OM architecture.

YOGA POSTURE ANALYSIS USING DEEP LEARNING TECHNIQUES

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Gayathri J[*4]

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[*3,4]IV CSE Student, Department Of CSE, Kings College Of Engineering, Tamilnadu, India.

ABSTRACT

Human pose estimation is a profound, established computer vision issue that has uncovered numerous past difficulties. Breaking down human exercise is advantageous in multiple fields like surveillance, biometrics, and many healthcare applications. Workout with yoga poses is famous these days since yoga activities can expand adaptability and muscular quality, and the respiration procedure will be improvised. The yoga postures evaluation is hard to check, so specialists will most likely be unable to benefit from the exercises ultimately. IoT-based yoga frameworks are required for individuals who need to rehearse Yoga at home. A few studies are recommended camera-oriented or wearable gadget-oriented yoga posture finding strategies with more precision. Nonetheless, camera-based plans have security and privacy issues, and the wearable device-based methods are illogical in the earlier applications. To build such systems, one must have a strong foundation and current research in pose estimation. In this project, we have developed a web application that is capable of analyzing yoga postures and gives the result only when the postures match with the trained models.

Keywords: Yoga Pose, Yoga Health, Pose estimation, Deep Learning, IOT.

I.   INTRODUCTION

Yoga started in India many decades ago, gathering exercise related to mental, physical, and profound strength. Yoga and sports have been drawing in people groups for endless years, yet from the most recent decade, an enormous community accepts Yoga as a feature of their life. The reason is because of the medical advantages. It is critical to do this activity in the right manner, particularly in the right pose. At some point, because of no assistance or information, individuals don't have a better idea about the correct technique to perform Yoga and begin doing Yoga with no proper guidance. Accordingly, they harm them-self while self-preparing because of an ill-advised stance. Yoga ought to perform under the direction of a trainer, yet it is likewise not moderate for all individuals. These days individuals utilize their cell phones to figure out how to do yoga stances and begin doing that, yetwhile doing that, they don't realize that the yoga present they are doingis precise or not. To conquer the constraints, as mentioned earlier, numerous works have been proposed. Computer vision and data science methods are utilized Artificial Intelligence (AI) products that act as a trainer. It depicts the benefits of that present. In some articles, there applied AI and Deep learning modules on an enormous number of picture dataset, which includes different yoga poses (Laxman, 2020). Yoga utilizes a progression of physical postures called asana, breathing control, and meditation. Since Yoga focuses on both body and brain, it is unmistakably more remedial than work out. Yoga practice must consolidate the extending of significant muscle gatherings, adding to physical ability and adaptability (Rowland et.al, 2020). A few yoga-based mediations directed in the community have been described. Regardless of how interventions assist in decreasing falls and the dread of losing, older people with these issues may not promptly approach such network-dependent projects. Particular old individuals' manifest inconvenience at rehearsing Yoga publicly, Which is particularly valid for ladies who want to do much at home and recreation. It is desirable to train Yoga in a bounded area with no disturbance. In rural zones, notwithstanding, yoga coaches are scarce (Mohan, 2021), and this factor is a significant driver in the productionof a self-helped yoga training framework. Learning is frequently connected with two criteria, area and time, and is relevant to exercise or Yoga by the older too. Given an overall hesitance concerning the old to exercise or practice Yoga, the spot and season of training are adaptable by their inclinations. Also, learning depends on the person's choices and inspiration to learn at their movement.

II.   SYSTEM ARCHITECTURE

The COVID outbreak and resulting lockdown had constrained us all to stay at homes prompting a more unpleasant life (Borave, 2020).Public distancing had invigorated the chance to improve mental ability and

Research Article

Practical Approach to the Defect Prediction Model for Software Testing

Sujatha Dandu[1]*, Kiranmai Rage[2], M Sundar Raj[3], Nilamadhab Mishra[4], D Sivakumar[5] and S Mohan[6]

Abstract

The forecast for software vulnerabilities seeks to decrease test automation expenditures by leading users to default enterprise software categorization. In so many businesses, defect predictors are frequently used to prevent software defects to save time, improve quality, testing, and improve resource allocation to meet schedules. The implementation of statistical package deficiency prediction models in everyday life is highly challenging, as a result of the need to anticipate the following release or newer better types of projects with far more different data and measurements and also previous fault information. In this study, our quantitative technique demonstrates how the faults for recent software versions or undertakings are properly predicted. We utilized 20 software development releases datasets, 5 variables and constructed a model using summary analysis, correlations, and various linear models with a confidence level of 95% (CI). The R-square value was 0.91 and its standard deviation is 5.90% in this suitable multiple linear regression analysis. The deficiency model for software tests is being used to anticipate problems in numerous test programs and commercial deployments. Comparing actual and the predicted faults, we discovered 90.76% accuracy.

Keywords: Software deficiency; Linear regression analysis; Quality; Prediction faults

Introduction

Numerous simulated results of software defects have been created during the last 30 years. The requirement for release/project improved defects prediction models in computer inspection organizations. It is a major difficulty to anticipate errors in designs that were developed. Project management organizations, by forecasting the flaws, attempt to make effective strategies to improve design and planning procedures. Companies are investing enormous sums on resources for enterprise software tests to determine flaws. If we can use a model to forecast launch faults, the time variance can be minimized and service quality is great. The assessment of several software components in [1-3] has been provided. A Project Manager who has to pick between these possibilities is of little assistance to statistically-based models of software defects [4].

If detected and corrected at later stages of secure development cycles or during manufacturing [5], software errors are more costly. Tests are therefore one of the most essential, time-consuming phases of the software development cycle and represent 50% of the overall development costs. In addition to helping programmers assess the quality and predisposition of a computer product [6], problem predicts improve the efficiency of a testing stage. Managers can also assist in distributing resources. Mast prediction models combine well-known reference models and real defect rates, and use such approaches with the faulty information in terms of training data, as well as statistics [7-9], artificial intelligence [10-13], to understand which modules are susceptible to defects.

A recent study on defect forecasting reveals that AI-based fault predictors can discover [14] 70% in the median of flaws in a software system [15,16]. Manual code reviews can find around 35% and 60% of faults. A handful of writers such as [17-19] recently adopted software engineering approaches for linear regression. This is used by project managers, in particular, to determine when and where to end the testing and release of the software, pricing the period to check additionally against the anticipated benefits, to prevent a lot of technology flaws from being found after testing [20].

Objective

Deficiency prediction enhances the effectiveness of an assessment process and helps programmers analyze their software device's reliability and fault proneness. Assist management in resource allocation, reprogramming, training programs, and overall budget. (a) Funds may efficiently be increased or depleted, (b) Job and taught and training could be filled. Depending on quality assessment; anticipates faulty manufacturing leaks.

Methodology

The purpose of this article is the forecast system testing faults using predictive models as well as the prevention model's effectiveness. We will use past data and their measurements to assess the ability of statistical models to identify the number of faults. We evaluate the correlation between the number of faults and the classifiers to determine the best forecasters in the 18 variable packages provided. Then we use more complex statistical methods to handle the standard deviation of the input variables and previous data and monitor multichannel variables.

Parametric parameters of the target factor have been the principal variables we investigated. As just a consequence, we utilized data of 20 dev kits that are linked to the influential factors. The generalized multilinear regression parameters are initially calculated by utilizing the least quadratic technique (OLS). If the failure distribution is considered to be standard, the use of the OLS technique to adjust the variables of the generalized multiple linear regressions is acceptable. The maximum probability estimation (ML) of β is quite close to that for the nonlinear [21-27] theory throughout this situation. To estimate the fault that uses these five predictors with correlations, we utilize the Multiple Linear Regression (MLR). Analysis and multiple regression analysis for both the detection of potential faults are used in predictive analytics.

$$Y = \beta_0 + \beta_I X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \ldots + \beta_n X_n$$

Where Y=Dependent parameter (Defects),

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RFID AND PASSWORD BASED DOOR LOCK SYSTEM WITH NOTIFICATION

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ABSTRACT

In our proposed system, a magnetic door lock is administered via RFID reader that initiates the authentication as well as validation of the user or controls the access in short. The system is more convenient to install and implement as access security solution of a particular arena due to its cost effectiveness with respect to the satisfactory level of protection provided. Another advantage is that the system consumes considerably less space for installation and maintenance purpose. In this concept for radio frequency identification (RFID) is used to recognize the user identity using like a smart card solution.

Keywords: RFID Tag, RFID Card, Solenoid Locker, Node MCU.

I.   INTRODUCTION

RFID is a short form of Radio Frequency Identification. It is working under inductive coupling principle, based on a radio frequency or radio waves. RIFD uses electromagnetic field to identify objective or tracking the objects automatically even 100 meters distance.

Radio Frequency Identification refers to a wireless system comprised of two components, tags and readers. The reader is a device that has one or more antennas that emit radio waves and receive signals back from the RFID tag. RFID tags are smart labels that can store a range of information from serial numbers. Whenever the object is in the range of the reader, the RFID tag are used to transmit feedback signal to the reader. The RFID Contains a transmitter and receivers. So it is very similar to the technology used in bar code. In the case of the bar code the scanner should be in a line of site. RFID is a not a line of technology as far as the object is in range of the reader object is able to identify the reader and able to send the feedback signal to reader. (The object can be in random position)

II.   METHODOLOGY

The purpose is to carry out a security system by combining mobile phone and IoT using RFID. Here is a Room security solution based on IoT using RFID.RFID tags work by using a microchip and an antenna to receive and transmit information. RFID tags that are battery-operated use an onboard battery as their power supply. Whenever the reader scans the passive RFID tag, the energy is transmitted by the reader to the tag.

Advantages

• Easy to use no need to carry keys often.

• RFID locks are waterproof.

• It can be programmed and reprogrammed as to user convenient.

RFID and solenoid locker

The card reader on the door constantly emits a Radio Frequency energy Field. When a card crosses the field, the power from the field energizes a copper wire inside the card, which powers the chip containing the card number and any other unique data. The door contains an solenoid lock which is designed to perform locking and unlocking operations on a door when it receives a correct pass code the door will open if not it remains locked.

DEEP LEARNING BASED PLANT DISEASE PROPHECY
USING LEAF IMAGE

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ABSTRACT

Accurate diagnosis of leaf disease is a complex challenge faced by farmers during the growth and production stages of crops. In order to address this problem, the paper proposes a method based on K-means clustering and an improved deep learning model for accurately diagnosing common diseases of leafs and a recommendation with fertilizer. First, to diagnose three diseases, K-means algorithm is used to cluster sample image and then feed them into the improved deep learning model. This paper investigate the impact of various K values and models(VGG/16), VGG-19 and the improved deep learning model on leaf disease diagnosis.

Keywords: Deep Learning, K-Means Clustering.

I.   INTRODUCTION

Economy contributes the most for the productivity of the agriculture. In agricultural field, the disease in plants is more common and the detection of disease in plants has become more feasible due to the above reason. These days' plant disease detection has acquired enlarging scrutiny in surveilling crops of large and various fields. Farmers undergo significant hassles in chop and changing from one disease administer principle to a different one. Plant disease detection is a significant challenge in the Agriculture sector. Some of the plants show visible symptoms on the plant leaf. The occurrence of plant diseases has a negative impact on agricultural production. If plant diseases are not discovered in time, food insecurity will increase. There are more than dozen common diseases in leaf. These leaf patterns can be used to identify different diseases and take immediate action to prevent the spread. This paper proposes a leaf disease diagnosis method based on the K-means clustering and deep learning combination to improve leaf disease diagnosis accuracy. The main contributions of the work are summarized as follows: First is to use K-means clustering to segment disease images. The second is to propose a deep learning model for leaf disease diagnosis, which is improved based on VGG-19. Third is that our method can be used to classify and diagnose leaf diseases.

II.   METHODOLOGY
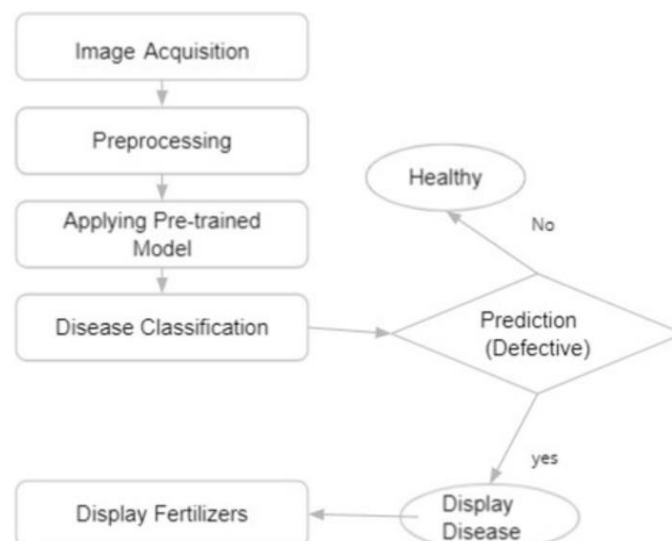
Diseases in plants are a major concern to the farmers these days. Many times, the farmers are not sure which pesticides or insecticides are needed to treat a particular diseased plant because, they are not sure of the type

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BLOCKCHAIN BASED CERTIFICATE VALIDATION SYSTEM

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ABSTRACT

Education is necessary for each and everyone. During the course of education, the students achieve many certificates. With their certificates they can apply for job at public or private sectors, where all these certificates are needed to be verified manually. There can be incidents where students may produce fake certificate and it is difficult to identify them. This problem of fake academic certificates has been a longstanding issue in the academic community. To make the data more secure and safe, everything needs to be digitalized with the principle of Confidentiality, Reliability, and Availability. All of these can be achieved with a technology named Block chain. The Block chain technology provides inherent security quality where it can be used to generate the digital certificate which is anti-counterfeit and easy to verify. Each certificate will have a unique hash key which can be used to validate the authenticity of the certificate by any organization through the portal. The benefit this a system is that the student also faces less risk of losing or damaging a certificate and the validation of the certificate can also be done quite easily.

Keywords: Block Chain, Digital Certificates, Confidentiality, Reliability, Availability.

I. INTRODUCTION

In India, usually a student's studies goes like taking admission in kindergarten, after that changing of school for primary, secondary, and high school studies. After completing high school students, need to get admission into college. For graduation, there's also once again changing of college. This is the basic cycle for student's study years. After this, some students continue to pursue higher studies. So the problem with this cycle is that a student needs to produce all his certificates in each stage for validation. This poses a risk of losing and damaging the certificate. And it is tedious for the validator to authenticate each certificate. With such a huge population in our country, almost every year 26.3 million students graduate. It is very hard to keep track and validate such a huge amount of records. Due to this, an unwanted scenario rises i.e. tampering and production of fake or duplicate certificates. There are a lot of hidden agencies in our country who are running this scam behind everyone's back. Technology has moved quite forward until now. Distinguishing between a fake and an original certificate will require a lot of concentration and result in wastage of precious time.

For removing this disadvantage, a technology named Blockchain comes into our life as a savior. The data in a Blockchain cannot be changed under realistic conditions. Even if data is changed, it just takes a second to let us know about the tampering. In Blockchain a data or a node is validated only when multiple parties approve it. So, the system would be Reliable and Authenticated at any instance of time. Now, the issue of tampering is solved.

Certificates distributed in colleges or universities are mostly in the form of hard copy. Whenever applicants apply for the job at any public or private sector they have to produce those hard copies, while the organizations have to verify all certificates manually which is very time-consuming process and there are chances that some may have produce the certificate which is not legit and that may get unnoticed by the verifier during the process because of this ineligible candidate will get a chance. There had been lot of cases in past where people are caught selling fake certificates of different organization at low cost. To eradicate such problem and diminish the production of fake certificates we can use the Blockchain technology. Blockchain can be used to store the data of the certificate that can be validated by anyone from any place.

The Blockchain is a decentralized shared distributed ledger; the data stored in the Blockchain is almost un-modifiable. It is a type of database which is not centralized and governed by the set of rules. In this study, we are going to develop the decentralized certificate verification application on the Blockchain. We are selecting this technology because it is traceable, tamper proof and encrypted. By integrating the Blockchain technology

AUTOMATIC SPEED CONTROLLING OF VEHICLE BASED ON SIGNBOARD DETECTION USING IMAGE PROCESSING

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Abstract - *The aim of this project is to reduce accidents and follow traffic rules by identifying and recognizing traffic sign boards in various backgrounds and lighting conditions from static digital images.These identification is done by using image processing technology. A major reason for accidents is not considering the signboards and not following the rules consequently. So to avoid this problem, introduce an automatic speed controlling vehicle using an image processing system in the vehicle which will detect the signboard. It will reduce the speed of the vehicle according to the signboard speed limit with the help of image processing algorithm and if head counts more than 10, speed of the vehicle automatically limited to 35kms/hr. Traffic sign recognition is important to the transport system on the highway road. Major approach is to detect road signs and use the data to reduce the speed of the vehicle.Proposed system will play a vital part in saving numerous lives.*

*Key Words***:** Traffic sign recognition, Deep learning, Speed control, Image Processing

1.INTRODUCTION

Most of the traffic accidents are the result of neglectfulness, ignorance of the traffic rules and disobeying traffic sign boards, by the drivers and also people in the society at large. Due to inflated vehicle density and over speed driving causes a lot of accidents. The applied mathematics reports of happened accidents shows that, there area unit inflated rate of auto density, the Indian roads area unit drastically inflated quite up to the expecting level excluding the national road, multiple performing at the time of driving the vehicle that's like use of mobile, drink whereas driving, refuse of traffic rules and regulation, crossing speed limits that is dangerous for your own safety which of others. This is apparent from the fact that every hour 56 accidents occurring due to carelessness, disobeying of traffic rules and overspeed. Similarly, every hour nearly 14 people die in road accidents. When someone fails to obey traffic signs, they are making themselves at risk as well as the life of pedestrians, and other drivers. Speed limit sign boards and traffic signals helps to reduce traffic in roads and they also are fabricate to reduce the number of traffic accidents. Image processing technology plays an important role in the speed limit sign board capturing. In this journal we have introduced a system that can help the driver, significantly increasing passenger's safety. Road sign

detection and recognition systems have also been implemented lately by many companies. In earlier days the road signs were detected manually by the drivers. But now the Automatic speed controlling of vehicles based on signboard detection using image processing can easily recognize the signs using the raspberry pi camera module.
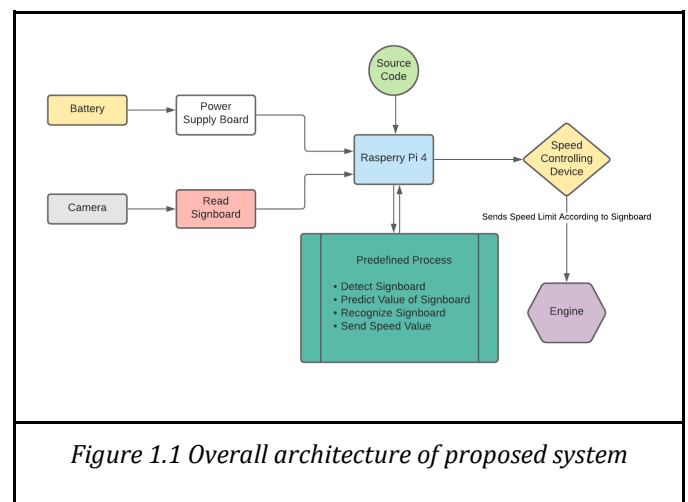
1.1 METHODOLOGY

Figure 1.1 Overall architecture of proposed system

The automatic recognition of those signs, however, isn't simple due to weather's conditions, the blur ensuing from moving vehicles and also the lighting conditions. To handle these challenges, researchers suggested the use of image processing and machine learning techniques. Automatic speed controlling of vehicles using image processing includes mainly, the traffic sign detection and also the traffic sign classification. Traffic signs have many distinctive options like colors, shapes and symbols. Within the detection stage, the input pictures are preprocessed increased so metameric in step with their color or pure mathematics

Proposed speed controlling system has two modules, which is an image processing module and a speed controlling unit module. The image processing module acknowledges the regulation signs before extracting from them a speed of the vehicle data that may be sent to the speed controlling unit module. A summary of those units is shown in Figure 1.1.

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Unsupervised Image Clustering Using Different CNN Architecture

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Abstract- *Clustering is a fundamental problem in many data-driven application domains, and clustering performance highly depends on the quality of data representation. Hence, linear or non-linear feature transformations have been extensively used to learn a better data representation for clustering. In recent years, a lot of works focused on using deep neural networks to learn a clustering-friendly representation, resulting in a significant increase of clustering performance. This project aims at providing insight on the transferability of deep CNN features to unsupervised problems. We study the impact of different pre trained CNN feature extractors on the problem of image set clustering for object classification as well as fine- grained classification. We propose a rather straightforward pipeline combining deep-feature extraction using a CNN pretrained on Image Net, VGG16 and Res Net and a classic clustering algorithm to clustering sets of images. This approach is compared to state-of-the-art algorithms in image-clustering and provides better results. These results strengthen the belief that supervised training of deep CNN on large datasets, with a large variability of classes, extracts better features than most carefully designed engineering approaches, even for unsupervised tasks.*

I. INTRODUCTION

Clustering is an interesting field of Unsupervised Machine learning where we classify datasets into set of similar groups. It is part of 'Unsupervised learning' meaning, where there is no prior training happening and the dataset will be unlabeled. Clustering can be done using different techniques like K-means clustering, Mean Shift clustering, DB Scan clustering, Hierarchical clustering etc. The key assumption behind all the clustering algorithms is that nearby points in the feature space, possess similar qualities and they can be clustered together.

In Introduction you can mention the introduction about your research

Up to know, we have only explored supervised Machine Learning algorithms and techniques to develop

models where the data had labels previously known. In other words, our data had some target variables with specific values that we used to train our models. However, when dealing with real-world problems, most of the time, data will not come with predefined labels, so we will want to develop machine learning models that can classify correctly this data, by finding by themselves some commonality in the features, that will be used to predict the classes on new data.

Unsupervised learning main applications are:

* Segmenting datasets by some shared attributes.
* Detecting anomalies that do not fit to any group.
* Simplify datasets by aggregating variables with similar attributes.
* Dimensionality Reduction

Throughout this article we will focus on clustering problems and we will cover dimensionality reduction in future articles.

Clustering Analysis

In basic terms, the objective of clustering is to find different groups within the elements in the data. To do so, clustering algorithms find the structure in the data so that elements of the same cluster (or group) are more similar to each other than to those from different clusters.

In a visual way: Imagine that we have a dataset of movies and want to classify them. We have the following reviews of films:

The machine learning model will be able to infer that there are two different classes without knowing anything else from the data. These unsupervised learning algorithms have an incredible wide range of applications and are quite useful to solve real world problems such as anomaly detection, recommending systems, documents grouping, or finding customers with common interests based on their purchases.

Some of the most common clustering algorithms, and the ones that will be explored throughout the article, are:

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SECURED APPLICATION FOR E-BALLOT USING TWO FACTOR AUTHENTICATION

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ABSTRACT

India's democratic underpinning are based on election results. In earlier days, voting periods range in length from three days to 46 days. In traditional they were using ballot paper and other methods for voting system. Now at 21th century, we are all using advanced electronic voting machine. Electronic voting machine contains certain drawbacks as chances of the violence, damage of machineries, dummy votes etc. So to avoid these drawbacks this paper implements a new technique as Android Mobile based Voting System. Our voting application is highly secured, and it has a quite simple and interactive user interface. For security purpose, we are using two authentication technique such as user recognition of Fingerprint and QR Scanner. Since the QR code and Fingerprint of each human being is different, the voter can be easily authenticated. Once the user can login and vote for the candidate who are nominated. User can vote the candidate only once, the application will not allow the candidate to vote for the second time. These votes will be counted and the results will be reported immediately. In our application helps to user can vote anywhere in the places and country.

Keywords: Voter ID And QR Code Based Online Voting System, E-Voting, Fingerprint Based Online Voting, One Time Password(OTP).

I. INTRODUCTION

Traditionally, election process plays a important role in democratic country. The election is a process for selection of a perfect candidate who will lead the nation. In a democracy, people choose their leader by giving their vote. Recently in India, electronic voting system is used and voter availability at in the city is compulsory. Now, this electronic system has no need of ballot papers . Electronic Voting systems suffers from various drawbacks such as time consuming, consumes large volume of paper work, no direct role for the higher officials, damage of machines due to lack of attention, mass update doesn't allows users to update and edit many item simultaneously etc.

In our application, the major advantage is that the user has no need of coming to the voting halls, as they can vote from anywhere. It has more features as compared to the normal voting system. By this way most the people can cast their votes without missing. There's a chance to kill long lines at review stations and offer better reception for people who are mentally ill, experiencing illness, serving in the military or living abroad as well as those who are away from close rides and others who feel hard to see. Young people between the ages of 18 and 30 are special voters and the application is a process to attract those citizens who seem to be the hardest to reach.

II. METHODOLOGY

The Existing System of election is running manually. The voter has to visit to booths to vote a candidate so there is wastage of time. The voter has to manually register into the voter list and also vote counting has to be done manually. All the information of the voter or candidate is to be filling in manually. Voter must be present in his/her constituency to give his/her vote. There are Electronic Voting Machines used which takes more cost. The voting system previously being used by the Government is a paper based system, in which the voter simply picks up ballots sheets from electoral officials, tick off who they would like to vote for, and then cast their votes by merely handing over the ballot sheet back to electoral official. Maintaining the integrity of the specifications.

Some of the existing system are:

1. Paper-based voting
2. Punch card
3. Direct recording electronic voting machine

A SMART ANDROID APPLICATION FOR REAL TIME ACCIDENT ALERT

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ABSTRACT

Technology has made our lives far easier, faster and better through communication. Nowadays everything is becoming a mobile technology. Such as Mobile Government, Mobile Hospital, Mobile ambulance all are innovative research area in this technology era. This paper proposes a Smart Android Application System for the purpose of increasing security and giving a real time emergency alert for the people who are in the emergency or a hazardous situation. This mobile application will send the alert with the real time location of the user to the nearby police station and the public in and around the area by the use of Google map API and GPS. Also, this application will send the live video proofs of the user who are sends alert. The main purpose of this system is to reduce the response time of emergency services in situations like health emergencies, traffic emergencies, women security emergencies or other emergencies such as fire, theft/robberies. So, that the Governmental agencies such as Police Departments and family members can also easily find out the people who are in the occurrence of danger through push notifications.

Keywords: Emergency Alert, Accident Alert, Mobile Application, Push Notification, Cloud Technology, GPS Location, Traffic Accidents, SOS, Real-Time Emergency Alert, Google Map API.

I.   INTRODUCTION

With current technology era where mostly everything runs on smart phones and applications, the need of quick and efficient services is important in every aspect especially when it comes to women security, emergency and medical services. In emergency cases the number of deaths due to road accidents is very high. Looking at the number of deaths and injuries due to road accidents shows the global crisis of road safety. Nearly 1.4 million people are killed every year. More than 90% of road accident deaths occur in middle-income countries, in low-income countries the figure is even higher. If we analyse such this problem one of the main reasons behind this is lagging in medical response and lagging in reporting on correct time. The most likely reason for an individual's death in an accident is lack of the first aid provision that is because of emergency services not receiving information about accident in time. Analysis shows that if we decrease just one minute in accident response time that increases chances of saving an individual's life up to six percent. Women are still facing unspeakable insecurities. For these kinds of security and emergency purpose many devices and applications are already exist but those are ineffective. In such other emergency cases like fire emergency, theft/robberies cases we need to give immediate alert in order to avoid death causes. Due to the above reasons, it is quite apparent that there is a striving need for emergency alert in the country. However, it is a point worth to note that advancement in technology has paved its path in almost all walk of life. To resolve these types of societal issues, current technologies are have to be introduced.

In this work we are utilizing android smartphone to give real time emergency or accident alert to the nearest Police Stations and emergency contacts with the exact location of victims and live video in emergency. On an emergency responder side, the system will inform responders about the incidents that occur near to them and provide them with real time tracking of emergency victims on a Google map. This will help emergency responders keep track of victim's location and rescue them as soon as possible. With live video proof will help to the responders. So, that the given information might not be wrong at any time.

II.   SYSTEM ARCHITECTURE

An architecture diagram is a diagram of a system that is used to abstract theoverall outline of the software system and the relationship, constraints, andboundaries between thecomponent.Initially, after installing the

An Efficient Approach for Diagnosing the Breast Cancer Using Deep Learning Technique

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Abstract

Background: Now a days breast cancer is one of the deadliest diseases found in most of the matured women. The Cancer disease is curable if it is diagnosed at initial stages. But once it goes to the final stages it is very hard to cure and which leads the patient to death.
Objectives: In this paper, we proposed a model to diagnosis the cancer which gives a clinical support to the physician for initial diagnosis of breast cancer. In general, the cancer disease is identified if there is a tumour growth is appeared in the human body. But before the tumour grows, there may be change in textures of the different biological parts in the region of breast where tumours can be grown. Here, in this paper, we propose an image processing technique to detect the change in structural parameters of the mammography images.
Methods: The proposed image processing technique and convolutional neural network were combined here which forms a layered approach in deep learning. Here, we prefer manual prediction of the images rather than automatic bulky predictions so as to ensure an image is correctly predicted whether it is malignant or benignant.
Results and Conclusion: As based on the experimental results, we prove that the proposed work attains outstanding results compared to the ideal CNN approach in terms of wide variety of parameters such as accuracy of detection, Sensitivity, Specificity, Positive Predictive Value (PPV), Negative Prediction Value (NPV), Mathew's Correlation Coefficient(MCC).

Keywords - *Breast cancer, benign, malign, Convolutional Neural Network, Image Processing, image pre-processing, accuracy, loss, Sensitivity, Specificity, PPV, NPVM confusion matrix, keras, tensor flow, epochs, convolutional layer.*

1.   Introduction

Cancer is one of the deadliest diseases around the world. Among all types of cancers, women are mostly affected by breast cancer which can turn to fatal if it is not diagnosed earlier. Currently the first procedure of diagnosing breast cancer is by taking mammography images. After that radiologist and physician clinically detect the mammography image as malign or benign only if a tumour is found on those mammography image regions. But this is not the accurate may of diagnosing breast cancer because tumours can be observed only at the end of early stages and stage 1. So, in such a condition there is a huge chance of spreading cancerous cell to various part of our

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Analysis of Cloud Analytic Tool

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Abstract- *Cloud computing is a common word for everything that provide hosted services over the world wide web. Cloud computing provides three major services: Platform as a service (PaaS), Software as a service (SaaS) and Infrastructure as a service (IaaS).To implement a cloud computing model, cloud infrastructure requires the hardware and software components. Cloud computing is the on-demand computing. In this paper, we are going to analysis the most excellent cloud analytics tools on the marketplace.*

Keywords- Cloud computing and analytic tools

I. INTRODUCTION

Cloud computing is the on-demand accessibility of computer resources, particularly storage of data and power computing, without straight management of user. In cloud data is distributed over various locations and every locations is considered as data center. Cloud computing relies on using a "pay-as-you-go" model by distribution of resources. So it can avoid the capital cost of users but may increases the operational cost of ignorant users. The main aim of cloud computing is to take advantages from all of the technologies by the users, without having a more understanding about or skill with all of them.

The cloud goal is to reduce the expenses and assist the users concentrate on their main business instead of having delay by software barrier.The cloud computing major tool is virtualization. Virtualization software do computing tasks by separating a hardware device into more "virtual" devices, each devices can be effortlessly useable and manageable.

Cloud analytics describe the function of analytic the data against a private or public cloud for bring a outcome of users significance. It involves use of scalable cloud computing with great analytic software to data pattern identifications and to mine latest insights. It is one kind of analytics model that transfer processing of data and storage operations to a public or private cloud. Due to needs of several analytics requirements for companies used this model.

cloud analytics:

The process of analytics a data in a private or public cloud is called cloud analytics. Cloud analytics services and applications are provided based on subscription or price model.

Gartner defines the six major analytics elements such as distribution or storing of outcomes, sources of data, models of data, applications processing, power computing and cloud models of analytic.

The products and services of cloud analytics examples are software-as-a-service business intelligence (SaaS BI), hosted data warehouses and social media analytics based on cloud.

Software-as-a service business intelligence (called as *cloud Business Intelligence* or *on-demand Business Intelligence*) used to send business intelligence (BI) applications from a hosted locations to users. It is a scalable model and establish business more easier and low price, but in-house application, product might not provide the same characteristics. For social media applications cloud based analytics tools provide the remote delivering of tools for choosing the application from social media sites, to gather data for the applications, services for storage and software based on data analytics in social media.

A hosted data warehouse is a centralized depository for data that is provided to accessible of data from remote

MDPI

Article

Sensing and Analysis of Greenhouse Gas Emissions from Rice Fields to the Near Field Atmosphere

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Abstract: Greenhouse gas (GHG) emissions from rice fields have huge effects on climate change. Low-cost systems and management practices to quantify and reduce GHGs emission rates are needed to achieve a better climate. The typical GHGs estimation processes are expensive and mainly depend on high-cost laboratory equipment. This study introduces a low-cost sensor-based GHG sampling and estimation system for rice fields. For this, a fully automatic gas chamber with a sensor-integrated gas accumulator and quantifier unit was designed and implemented to study its performance in the estimation efficiency of greenhouse gases (CH_4, N_2O, and CO_2) from rice fields for two crop seasons. For each crop season, three paddy plots were prepared at the experimental site and then subjected to different irrigation methods (continuous flooding (CF), intermittent flooding (IF), and controlled intermittent flooding (CIF)) and fertilizer treatments to study the production and emission rates of GHGs throughout the crop growing season at regular intervals. A weather station was installed on the site to record the seasonal temperature and rainfall events. The seasonal total CH_4 emission was affected by the effects of irrigation treatments. The mean CH_4 emission in the CIF field was smaller than in other treatments. CH_4 and N_2O emission peaks were high during the vegetative and reproductive phases of rice growth, respectively. The results indicated that CIF treatment is most suitable in terms of rice productivity and higher water use efficiency. The application of nitrogen fertilizers produced some peaks in N_2O emissions. On the whole, the proposed low-cost GHGs estimation system performed well during both crop seasons and it was found that the adaption of CIF treatment in rice fields could significantly reduce GHG emissions and increase rice productivity. The research results also suggested some mitigation strategies that could reduce the production of GHGs from rice fields.

Keywords: greenhouse gases (GHGs); irrigation treatments; automatic gas chamber; rice fields

1. Introduction

Rice is the second major staple food in 48 countries of Asia and is being grown on about 153 Mha, which is equal to 11% of the world's arable land [1]. A major concern in the cultivation of rice is the fact that it is one of the main agricultural sources of emissions of greenhouse gases (GHGs) like CH_4, N_2O, and CO_2 [2]. Rice crops have 169% higher global warming potential than maize and 460% higher than wheat crops. The Global Warming Potential (GWP) rate is higher in southern and eastern parts of India due to the larger extension of rice cultivation fields. This is mainly due to the contribution of higher CH_4 emission to total greenhouse gas emissions in rice production compared to othercrops. It is estimated that by 2030, the demand for rice production may increase by 40% due to the growing population. Hence, the resulting GHG emission rate may increase by 35% to 60% [3], which will lead to increased global warming [4]. The excessive application of inorganic fertilizers in the rice field to increase productivity may also increase GHGs emissions from rice fields. GHG emissions from paddy fields depend on various factors like the irrigation-water level, amount of fertilizer used, rice varieties, and soil

Tech Science Press

Intrusion Detection System for Big Data Analytics in IoT Environment

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Abstract: In the digital area, Internet of Things (IoT) and connected objects generate a huge quantity of data traffic which feeds big data analytic models to discover hidden patterns and detect abnormal traffic. Though IoT networks are popular and widely employed in real world applications, security in IoT networks remains a challenging problem. Conventional intrusion detection systems (IDS) cannot be employed in IoT networks owing to the limitations in resources and complexity. Therefore, this paper concentrates on the design of intelligent metaheuristic optimization based feature selection with deep learning (IMFSDL) based classification model, called IMFSDL-IDS for IoT networks. The proposed IMFSDL-IDS model involves data collection as the primary process utilizing the IoT devices and is preprocessed in two stages: data transformation and data normalization. To manage big data, Hadoop ecosystem is employed. Besides, the IMFSDL-IDS model includes a hill climbing with moth flame optimization (HCMFO) for feature subset selection to reduce the complexity and increase the overall detection efficiency. Moreover, the beetle antenna search (BAS) with variational autoencoder (VAE), called BAS-VAE technique is applied for the detection of intrusions in the feature reduced data. The BAS algorithm is integrated into the VAE to properly tune the parameters involved in it and thereby raises the classification performance. To validate the intrusion detection performance of the IMFSDL-IDS system, a set of experimentations were carried out on the standard IDS dataset and the results are investigated under distinct aspects. The resultant experimental values pointed out the betterment of the IMFSDL-IDS model over the compared models with the maximum accuracy 95.25% and 97.39% on the applied NSL-KDD and UNSW-NB15 dataset correspondingly.

Keywords: Big data; cybersecurity; IoT networks; intrusion detection; deep learning; metaheuristics; intelligent systems

ADVANCED SECURE ELECTRONIC VOTING MACHINE USING DEEP LEARNING

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ABSTRACT:

Voting is one the fundamental rights of every citizens of a country. In India the voting system plays a major role during election. In past we had ballot paper method for voting which was time consuming and more storage space was needed. Later, Technology development bought Electronic Voting Machine in use. The EVM were designed by BEL and ECIL. The current EVM used in our country require more man power and less trustworthy. It doesn't have any verification step. In this project, the system concentrates on advance secure during election. The system provides verification step and more trustworthy. Before polling vote every citizen will be verified their fingerprint through deep learning method and then they will be identified by scanning QR code in their AADHAR card. After the verification steps over the voters will allow for polling vote. If the same voters trying to does polling vote again while the verification step the system will shows that he/she as already voted. This system will help to move a step ahead towards Digitalize India and Make in India.

KEYWORDS: Deep learning, CNN, Fingerprint recognition, QR code, AADHAR card, EVM, FPGA.

I.INTRODUCTION:

An EVM comprises of two units, a control unit, and the balloting unit. The two units are joined by a five-meter link. Balloting unit encourages casting a ballot by a citizen by means of marked catches while the control unit controls the polling form units, stores casting a ballot checks and shows the outcomes on 7 portion LED shows. The regulator utilized in EVMs has its working project carved for all time in silicon at the hour of assembling by the maker. Nobody (counting the maker) can change the program once the regulator is produced. The control unit is worked by one of the surveying stall officials, while the balloting unit is worked by the citizen in security. The official affirms the elector's recognizable proof at that point electronically initiates the voting form unit to acknowledge another vote. When the elector enters the vote, the balloting unit shows the vote to the citizen, records it in its memory. A "close" order gave from the control unit by the surveying corner official registers the vote, relocks the unit to forestall various votes. The interaction is rehashed when the following citizen with another elector ID shows up before the surveying corner official. The figure 1.1 shows the EVM

FIG 1.1 EVM

The two units have various carefully designed conventions. Their equipment, by configuration, must be modified once at the hour of their assembling and they can't be reconstructed. They don't have any remote correspondence segments inside, nor any web interface and related equipment. The balloting unit has an inner ongoing clock and a convention by which it records each info yield occasion with a timestamp at whatever point they are associated with a battery pack. The creators deliberately decided on battery power, to forestall the likelihood that the force links may be utilized to meddle with the dependable working of an EVM.

SMART CITIES MONITORING SETUP USING IOT

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Abstract— The idea of a smart city injects new thought into the innovation of city development mode and brings tangible development benefits for urban residents. Building smart cities have become a cross-disciplinary hot issue in the current information technology and city development. An environment monitoring system using Wireless Sensor networks in smart cities is proposed. The monitoring system consists of street lights as routers and vehicles as nodes. The data collected by the nodes in vehicles are transmitted to the routers in the street light. The router data can be sent to a central station through the Internet of Things for monitoring the overall city. Once this network is created, many parameters can be monitored in a smart city setup. Since the network of vehicles and street lights covers a wide range and is orderly distributed and easy to be managed, the Zigbee Wireless Sensor Network based on the vehicles and street lights could offer a new idea for the construction of a smart city's infrastructure.

Keywords— Internet of Things (IoT), Zigbee Wireless Sensor Network, atmosphere monitoring, smart city.

I.Introduction:

IoT can be defined as 'Objects having virtual personalities and identifications in smart areas employing intelligent interfaces to connect and communicate within medical, social, environmental, and users context.With the help of particular sensors, particular faults or abnormalities could be detected and the corresponding status shall be sent to the authorized person who can assign his assistants to look after the issue.

A sophisticated attacker could, for example, take control of various intelligent devices such as traffic lights are connected cars and many other smart devices in cities. When the city is faced with the challenges of population, environment, economy, social culture, and other aspects, the idea of a smart city undoubtedly introduces a new opportunity for the transformation and upgrade of the city. The IoT concept leverages several ubiquitous services to enable Smart City deployments all over the world. IoT introduces new opportunities such as the capability to monitor and manage devices remotely, analyze and take actions based on the information received from various real-time data streams. IoT objects with various capabilities (e.g., temperature, light, humidity, pressure) have appeared today and many of them allow us to anticipate rather than simply react. Indeed, there are many sectors (health, manufacturing, transportation, and others) where connected objects are being deployed.

III.Literature survey

Due to the advancements in technologies, smart cities have been considered a versatile parameter to control, monitor, and operate in different fields (like electrical fault detection, corporation duties, etc.) in an efficient manner without costing much time and manpower thereby making the city smarter than before. Cities can be interfaced with the Internet of Things(IoT) which finds many applications in the conversion of a city to a „Smart City". In this paper, a sincere attempt has been taken to list the essentials of „Smart Cities" and overcome the issues faced by normal cities. Also, the main purpose of this paper is that of providing a detailed review of the concepts of smart cities and their applications in different fields [1]. In particular, this concept describes the IoT technologies for smart cities and the main features of a smart city.

Awareness of air pollution is one of the key aspects of modern smart cities. Policy makers, and other key stakeholders, are often ignorant of pollution in their immediate surrounding and its correlation to local environment and micro-climate when making short- or longterm decisions.

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IoT BASED AUTOMATION SYSTEM

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ABSTRACT

Energy is a very important aspect for any household, industries, Environment agriculture and so. Managing the energy efficiently and conserving it intelligently for appliances is very much important. The energy usage is directly affected with Coal, oil and so towards power generation. Towards this, there has been lot of research work carried out in developing some smart lighting system pertaining to classroom for conserving the energy. In one another research, researchers have developed Android based Smart home system for monitoring the usage of power to avoid any kind of anomaly. In none of the research, researchers have worked towards automating the appliance control towards conserving the energy. Most of them concentrate on controlling the appliances using android devices. So with the upcoming of machine to `machine communication where devices can be connected wirelessly leading to IoT, we here have developed an IoT based Smart Energy Conservation system where appliances like Fan and Bulb to start with are controlled wirelessly based on humidity and light intensity information. These inputs are used towards controlling the appliances intelligently rather than just switching on or off. In addition the system also keeps computing throughput the day power consumption of the appliances which gives the user knowledge on power being consumed over a period of time. These details are updated in Cloud server. This prototype system developed have achieved energy conservation at every household

KEYWORDS:

Internet of things (IoT), Power consumption, Smart device Internet of things Home automation,security ,android

The use of energy has been a key in the development of the human society by helping to adapt to the environment. The

consumption of energy has led to major threats to climate change, environmental pollution, and human health.
. The network path can be interconnected or interconnected with the "things" being either embedded software, hardware or   and sensor. It refers to the state where the things will have more and more data and information associated with them and have a ability to communicate, produce new information and become the integral part of the free world wide web .save money on energy use while keeping our office or building ,comfortable. The cost of simply forgetting to turn off your classroom lights and electric appliances can really add up over time. Controlling temperature and lighting based on time of day or occupancy can really reduce energy costs.

ii.   LITERATURE SURVEY:

The pervasive advancement in the field of an autonomous system is significantly influenced by the concept of integrating a large number of devices. The use Internet of Things (IoT) has increased day by day for making connected devices over the internet. Besides, mobile sensing devices operated by IoT including smartphones, tablets, digital cameras, sensors, etc. are providing access to a large variety of data and services based on human interaction. In this paper, the implementation and analysis of an IoT based home automation framework using NodeMCU through the MQTT protocol are described. This helps the users to monitor and control home appliances from remote places by using a mobile application over the internet. Keywords Sensors, IoT, Firmware, Home Automation, Node MCU, MQTT Broker

i.   INTRODUCTION:

WIRELESS AND AUTOMATIC RECHARGE FOR ELECTRIC VEHICLES

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Abstract— In this paper we proposed a Wireless Charging for Electric Vehicles (WCEV) to increase the battery life of the vehicle. Due to plugged in charging**,** port may be damaged and incompatible plugs receptacles also cause additional inconvenience between different EV models. Wired charging only done by manually, because it needs human efforts to charging the e-vehicles. Without any wired connection, the Wireless Power Transfer (WPT) systems transfer electric energy from a source to a load through inductive coupling between two coils termed transmitter and receiver coil. We can be implemented Wireless power transfer as a static charging system. The wireless charging takes place, only if the two coils should be in the correct position. We can monitor the e-vehicles is correctly parked or not by the position sensors. When we use the wireless system for charging, a very small amount of heat is produced. Here we use an app (Blynk IoT) to monitoring the charging percentage through notification in the mobile phone. Wireless power transfer with the help of inductive coupling and an app to monitoring the charging percentage is the main motive of our paper.

Introduction :

According to Government of India at the end of year 2022 about 75 % of the automobile market will be occupied by the Electric vehicles. Nowadays IC engine vehicles are in used everywhere. But it has many drawbacks such as it runs on the gasoline and diesel engines so that they are conventional type of fuels and produces large amount of carbon emission as a side product which are very harmful for environment. Increasing demand is resulting in increasing in the price of the fuels. The commercial market of electric vehicles (EVs) has begun to grow. The existing conductive charging method requires high power charging devices or charging stations to recharge the vehicle within a short time. Incompatible plugs receptacles also cause additional inconvenience between different EV models. As for the wireless charging technologies, different EV models can share their charging infrastructure if the same wireless power transfer (WPT) technology is adopted . But the major issue to use the electric vehicle is the time required for the charging of the EV and the lack of charging stations. In our project we are focusing on getting the things simple for the user with the help of wireless charging which is simply based on inductive coupling. Two plates will be placed one is on the electric vehicle (receiving plate) and another is at the ground level (transmitting plate). So that user will not have to plug the charger always in the vehicles. When he will park the vehicle in the parking the charging will get started with about 97% efficiency and very less heat loss.

Keywords— *Wireless Charging for Electric Vehicles (WCEV), Wireless Power Transfer (WPT), Inductive coupling, Blynk IoT.*

ORIGINAL PAPER

Effect of Silicon Carbide on Microstructural, Mechanical and Corrosion Behavior of Electrolytic Copper Matrix Composite Produced by the Powder Metallurgy Route

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Abstract

In this work Copper based composites were synthesized from Cu and SiC powders using Powder Metallurgy (PM) technique. The composition of the composites are Cu, Cu-5 wt% SiC, Cu-10 wt% SiC and Cu-15 wt% SiC were made using 400 kN hydraulic press and sintered at 900 °C using muffle furnace for 4 h. Scanning Electron Microscope (SEM) analysis was done on ball milled powders and sintered samples showed the uniform dispersal of SiC in the Cu. EDAX analysis evident the occurrence of SiC in the matrix. The addition of SiC in Cu improved the hardness and compressive strength (CS). Salt spray corrosion test resulted that, the improved corrosion resistance was obtained for the composite contain 10 wt.% of SiC. The corrosion rate was accomplished for the Cu – 10 wt.% SiC composite as 0.000894535 mm/year. Highest CS was attained for the sample contain 10 wt.% of SiC and highest hardness was observed for the sample contain 15 wt.% of SiC. The strengthening mechanism was discussed with the help of SEM images. The density was decreased and the % porosity was increased for the increasing wt.% of SiC in Cu matrix. The sintered density is higher than the green density for all the samples. From the observed results, it is concluded that produced composites would be suitable for radiator applications.

1 Introduction

Metal matrix composites (MMCs) are extensively used in numerous applications because of its exceptional properties such as strength, hardness and conductivity [23]. Copper and its alloys are popular ductile materials which has greater importance among the all the metals because of its excellent corrosion resistance, thermal conductivity and workability [20]. Cu composites are very useful materials for automobiles, marines, and machinery. Cu matrix composites are used in electrical and electronics fields in the manufacturing of springs for radiators, relay contacts, switchgear and rotor bars [22]. The properties of the copper could be improved by reinforcing various oxides and carbides through various techniques such as casting and PM [2]. SiC is the useful reinforcement since it has better properties and low cost one. Beibei Chen et al. developed copper-based composite by reinforcing with $NbSe_2$ and CNT and reported that the inclusion of aforesaid particles improved the wear behavior of the composites [4]. Hua Bai et al. developed B_4C reinforced copper composites using electroless deposition and they reported that the inclusion of B_4C decreased the conductivity [1]. Jian-Tao Yao et al. developed Mo-Cu composites through infiltration process and studied the mechanical and microstructure of the composites. The improved thermal conductivity was achieved for the copper filled composites [30].

Yunhong Liang et al. studied the behavior of TiC filled Cu composite at Ar and air atmosphere and reported the mechanism of diffusion and precipitation mechanism [13]. Silicon Carbide (SiC) is a mostly used reinforcement materials for developing MMCs because of its excellent strength and hardness [8, 9, 11]. Among the various methods, PM is the efficient method to produce the MMCs as aluminium [25],

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Investigation on Performance and Emission Characteristics of CI Engine Fuelled with Cucurbita Pepo L. and Prosopis Juliflora Seed Oil Biodiesel Blends

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Abstract

Recent researches of different countries have used traditional seed oils such as sunflower oil, soybean oil for the synthesis of biodiesel. In the present investigation, (pumpkin) Cucurbita pepo.L and prosopis juliflora seed oil was used for the synthesis of biodiesel. Since these are produced in large quantities in India, oil cost is low. Diethyl ether as additive was added to the above blend and performance and emission parameters were compared. Performance tests were conducted using biodiesel blend in water cooled, constant speed, CI engine and the emission characteristics were analyzed using a five-gas analyser. It was observed that there was 9.89 % increase in Brake Thermal efficiency and 14.35 % reduction in Brake Specific Fuel consumption at the maximum load for B20 blend with 5mladditive. It was also noted that emission of CO reduced by 0.65 % than that of diesel. CO2 by 10.3 % and NO by 21.1 % for B20 blend and further, emission of CO reduced by 14.3 %; CO2 by 13.8 % and NO by 25.83 % was noticed when additive was added to B20 blend. HC emission and smoke opacity increased by 33.8 % and 16.56 % respectively for B20 blend and increased by 26.47 % and 5.15 % for B20 blend with additive which indicates reduction of HC emission and smoke opacity by adding additive to biodiesel. The combustion characteristics of blended biodiesel (50:50 for Cucurbita pepo L and prosopis juliflora) with additive closely follow that of diesel. Hence this blend is used as fuel in CI engine without any engine modification.

Keywords: Cucurbita pepo L, Prosopis Juliflora, B20 biodieseel blend, Diethyl ether, Emission characteristics, 5-gas analyser.

1. Introduction

Bio-diesels are extracted from the organic vegetables, waste oil and animal fat that have increased the higher potency as compared to fossil fuels in current engineering researches [1]. The biodiesel plays a major role in India for the usage in commercial applications and also decreases the usage of non-renewable sources. Industrial

Experimental Investigation on Performance, combustion and Emission Characteristics of CI Engine Fuelled with Pumpkin and Maize Biodiesel blends.

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ABSTRACT

The most promising renewable, alternative and environmental friendly liquid fuel is bio-diesel. An experimental investigation has been carried out to investigate the performance and emission characteristics of a CI engine without any engine modification fuelled with pumpkin and maize biodiesel with various percentages of blends. The present work investigates the biodiesel obtained from transesterification process of Pumpkin and Maize is used as an alternative fuel to diesel. The performance, combustion and emission test using Pumpkin-Maize (PM) biodiesel and their blends (10%, 20%, 30%, 40% and 50%) with diesel were carried out at variable loads conditions. The research comprises of the performance, combustion characteristics such as brake thermal efficiency, brake specific fuel consumption and emission characteristics such as Carbon monoxide (CO), Carbon dioxide (CO_2), Hydro carbon (HC), Nitrogen oxide (NO) and smoke opacity were determined. Also the recent research notifies the engine running with biodiesel exhibit NO emission in higher concentrations. The results concluded that for B30 blend, an increase of 13.75% in brake thermal efficiency of the engine was observed at 80% load respectively. A decrement of brake specific fuel consumption has been observed, especially at higher loads for B30 by 11% respectively. The CO emissions increased by 27.3% and HC emissions increased by 27.2% for B30 blend at maximum loads whereas Smoke opacity decreased by 1.88% and NO emission decreased by 26.9% emissions were observed with respect to diesel fuel. Finally the research highlights the production of PM biodiesel fuel with proper proportion in order to achieve better engine performances and emission characteristics.

Keywords: Pumpkin-Maize biodiesel, Combustion, performance, emission, five gas analyser.

Comprehensive Assessment of Performance and Emission Characteristics of Pumpkin Seed Oil with $(C_2H_5)_2O$ and Jojoba Seed Oil with $C_5H_{12}O$ in C.I Engine

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Abstract

Bio-Diesel is an inexhaustible asset and a good alternative to conventional diesel fuel. The supply and demand holds to develop alternative fuels, which was stimulated by the depletion of the fossil fuel due to the limited resources. The main aim of the current study is to evaluate the performance and emission characteristics of a dual fuel was formulated using diesel with pumpkin seed oil as pilot fuel blended with diethyl ether as additive and jojoba seed oil as primary fuel blended with 1-pentanol as additive in a dual fuel engine. The performance parameters like brake specific fuel consumption, brake thermal efficiency and exhaust emissions of CO, CO₂, HC and NOx were determined. The testing can be done at constant speed at 1500 rpm. The comparative statement from this experiment of bio oils reveals that a significance improvement in the results of engine performance and emission characteristics of C.I engine.

Keywords: *Pumpkin Seed oil, Jojoba seed oil, Diethyl ether, 1- pentanol*

1. Introduction

Vegetable oil can be used as an alternative fuel in diesel engines due to the foreseen scarcity of non-renewable energy, the study of the future fuel is an unavoidable target. A research reported that the cotton seed methyl ester was used as an alternative fuel which yields, the engine torque and power was lower than that of diesel fuel varies in the range of 3-9%, SFC consumption was higher than the diesel in the percentile of 8-10% and the carbon-dioxide, carbon-monoxide and NOx emission is found to be lower than diesel fuel [1]. Pumpkin seed has considerable oil content by nature, the oil from the seed can be converted into methyl ester and various blend ratios were examined and compared with diesel fuel. Tests were performed at different loads condition in a single cylinder, four stroke and air cooled direct injection diesel engine developing power of 4.4 kW at rated speed of 1500 rpm. The result reveals that the combustion analysis, it is found that 40% volume basis considered as an optimum blend. The maximum heat release rate occurs for diesel fuel and followed by pumpkin oil methyl ester diesel blends [2]. Jatropha methyl ester is used as a bio-oil and blends with diesel and butanol through transesterification process with a catalyst sodium meth-oxide. The results of the comparative statements reports using methanol and ethanol, further the reaction rates and impacts were discussed. The performance measures were evaluated such as BSEC and brake thermal efficiency along with emissions of hydro-carbon, carbon-monoxide, NOx for the test fuels. The performance parameters are evaluated and found to be lower for all the blends in case of

Influence of different reinforcements on properties of Copper Matrix Composites: A Review

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Abstract. In recent years the copper matrix composites (MMC) has become a noteworthy composite amongst metal matrix composites due to its salient features. Copper matrix composites reinforced with various micro and nano reinforcements are very suitable material for many industrial applications. The new kind of copper matrix composites satisfy the industrial needs, exhibit improved mechanical properties and present scope for cutting down production cost. The performance of these materials is for the most part based on selecting the precise grouping of reinforcing materials, as some of the process parameters are linked to the reinforcing materials. The copper matrix composites can be fabricated through various techniques namely compo-casting, compo-casting, rheo casting, ultra-sonic assisted casting, stir casting, in-situ, powder metallurgy technique, etc. From these various production methods powder metallurgy (PM) technique is the most prominent and cheaper alternative to manufacture the copper matrix composites. In this article, review of the research work so far in the related area of copper matrix composites has been carried out.

INTRODUCTION

Copper is being utilized for numerous usages contact breakers, rocket engines, liners of combustion chamber walls & nozzles of gas turbines and so on [1]. Because of its excellent conductivity characteristics of copper is exploited in welding electrode, rocket nozzle liners, magnetic confinement fusion reactors & reusable launch vehicle (RLV) engines [2].Copper matrix composites are wide spread utilized for different usages such as like bearings, bushes and blocks owing to its excellent corrosion, wear and thermal conductivity [3].However, copper possess certain disadvantages less hardness, frail creep resistance, less yield strength which could overwhelm usages of copper [4]. Further to defeat those impediments, reinforcements like SiC [5],TiC [6], Al_2O_3 [7], Fly Ash [8] and TiO_2 [9] could enhance tribological and mechanical performance characteristics of copper MMCs. Centrifugal casting endorses operative metal filling in mixture with fine micro structure that generally results in enhanced inclusive mechanical behavior [10]. Compo-casting method is used for producing intermittently strengthened metal-matrix composites (MMCs). In Compo-casting manufacturing method, strengthening material is poured to a semisolid alloy matrix and finally the mixture is dispersed dynamically [11]. Squeeze casting method adopted for major reasons decreasing the quantity of trapped gases and decreasing the quantity of solidification reduction [12].Stir casting fabrication method composites exhibits superior properties. Composites fabricated through stir casting method will possess good mechanical properties and makes the composites useful for numerous engineering applications [13]. In situ manufacturing methods are protuberant actuality commercial and subsidizing numerous merits than that of other techniques like fine dispersal of good bonding strength amid matrix and reinforcement and fine grain enhancement [14]. Powder metallurgy fabrication route possesses various merits over other production methods. It is the easiest and appropriate technique to fabricate MMCs having desired properties [15]. Praveen Kumar et al [16] reported that PM technique is the most fitting route to make MMCs having homogenous

ISOMORPHIC SINGLE VALUED NEUTROSOPHIC GRAPHS AND THEIR COMPLEMENTS

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Abstract

In this paper, basic definitions related to Single Valued Neutrosophic Graphs (SVNG) with examples are discussed. Some properties of isomorphism are introduced. Also isomorphism between single valued neutrosophic graphs is proved to be an equivalence relation. Also discussed about isomorphic neutrosophic graphs and their complements.

1. Introduction

The notion graph theory was first introduced by Euler in 1736. In the history of mathematics, the solution given by Euler of the well known Konigsberg bridge problem is considered to be the first theorem of graph