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1.

Authors: Jasmine Vijithra A , Deepeka B, Sri Vaishnavi E, Srivani K, Gattu Bindhu

Paper Title: Design of Zipper Antenna for Women Safety

Abstract: The suggested system utilizes an inverted F metal zipper to act as an antenna. Here we have proposed an antenna which is designed using HFSS software in order to assure safety of women. The antenna design is carried out in three layers namely Ground plane, substrate and patch. Copper is used as ground and patch and substrate is made of FR4 material. The feeding point is identified at the bottom of the zipper, nearby one of the teeth. Simulations and measurements are made with HFSS. Changes in the radiations styles and the reflections coefficients happens when there is any disturbance in the teeth. The zipper constantly remains closed. The antenna will function even if the zipper is partially opened or closed. The suggested model remains as reconfigurable, particularly for radiation styles and also possess high gain value. The measured values give proper results based on simulations in terms of matching functionalities and radiation properties for the designed zipper, which acts as a good wireless product for women safety. This antenna design can be used in various applications when it is interfaced with some embedded system devices like GPS in order to find the location of the affected person and the material onto which it is going to be placed can also be made flexible that is, it can be used as Zip in dress material, hand bag, or can also be worn as an ornament.

Keywords - Zipper antenna, ground plane, FR4, reconfigurable.

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2.

Authors: Vaibhav Kothari, Nitin Namdev

Paper Title: Friend Recommendation using Unsupervised Machine Learning

Abstract: Friend recommendation is one of a lot of accepted characteristics of amusing arrangement platforms, which recommends agnate or accustomed humans to users. The abstraction of friend recommendation originates from amusing networks such as Twitter and Facebook, which uses friends-of-friends adjustment to acclaim people. We can say users do not accomplish accompany from accidental humans but end up authoritative accompany with their friends' friends. The absolute methods accept attenuated ambit of recommendation and are beneath efficient. Here in our proposed access, we are applying an added hierarchical clustering technique with the collaborative clarification advocacy algorithm as well the Principle Component Analysis (PCA) adjustment is activated for abbreviation the ambit of abstracts to get added accurateness in the results. The hierarchical clustering will accommodate added allowances of the clustering technique over the dataset, and the PCA will adviseredefining the dataset by abbreviating the ambit of the dataset as required. By implementing the above appearance of these two techniques on the acceptable collaborative clarification advocacy algorithm, the above apparatus acclimated for recommendations can be improved.

Keywords: Friend recommendation, collaborative filtering, social network, Recommendation system.

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3.	**Authors:**	**Sherine Glory J, Ms.Bhavani.M, Baarath S, Adarsh N, Ajay Durai V**	
	Paper Title:	**Expert System for Diagnosing Skin Disease**	
	Abstract: The most unpredictable and difficult terrain in the field of medical diagnosis is dermatology. Dermatological diseases are the most prevalent diseases that one out of three men suffer skin disorder. Regardless of being prevalent , diagnosis of these diseases require more experience in domain. About 90 percent of skin disorders can be cured by primary care. This conveys that the early care for the disease is necessary . This early stage detection can be made easier by computer aided diagnosis system. Diagnostic expert-based computer systems that simulate the diagnostic ability of human body and disease. So we propose Expert system which classify skin diseases based on their appearance and its characteristics. Rather than training every diseases in single image classifier model . We categorize skin disease based on their characteristic and train model separately for each category. This system will filter and cleans data and categorize based on their characteristics. Feature extraction and classification using complex methods such as the convolutional neural network(CNN) and softmax classifier. This system will provide more accuracy , fast and efficient result than traditional method.		
	Keywords: Dermatology, computer aided diagnosis, Expert System, Convolutional Neural Network ;		**9-12**
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8. A Fuzzy Expert System Design for Diagnosis of Skin Disease by Muhammad Asim Ali Raza, Muhammad Sheharyar Liaqat, Muhammad Shoaib. Department of Computer Science & Engineering, University of Engineering & Technology , Lahore, Pakistan.
9. Expert System To Detect Human’s Skin Diseases Using Forward Chaining Method Based On Web Mobile by STMIK Nusa Mandiri, Information Technology Program Jakarta, Indonesia, AMIK BSI Purwokerto Manajemen Informatic Program Purwokerto, Indonesia, ABA BSI Jakarta, English Program Jakarta, Indonesia.		
4.	**Authors:**	**Deoyani Mujbaile, Dinesh Rojatkar**	
	Paper Title:	**Dehazing of Images using Minimum White Balance Optimization**	
	Abstract: The quality of image captured in presence of fog and haze is degraded due to atmospheric scattering. In order to restore such images, several dehazing algorithms have been proposed. These algorithms sometimes, results in either a contrast distorted dehazed image or a dehazed image that has influence of dense haze. In order to solve this problem, dynamic facsimile dehaze system built on minimum white balance optimization is proposed. This paper proposed a system that integrates some famous single image dehazing algorithms and enhance their outputs using histograms and adaptive histograms; then adaptively select the output with minimum white balance distortion in order to get the optimum output. Experimental results demonstrated that the presented system can attain better dehazing effect and further improves universality of dehazing methods. Also proposed system improves luminance and contrast of dehazed images to a certain extent.		**13-19**
	Keywords: Adaptive histogram equalization, contrast distorted, dynamic, histogram equalization.		
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5.

Authors: **M. Rama Bai, G. Meghana**

Paper Title: **Recognition of Lung Tumor Area Based on Watershed Segmentation and CNN**

Abstract: Early recognition of tumor would assist in saving an enormous number of lives over the globe frequently. Study and remedy of lung tumor have been one of the greatest troubles faced by humans over the latest few decades. Effective recognition of lung tumor is a vital and crucial aspect of image processing. Several Segmentation methods were used to detect lung tumor at an early stage. An approach is presented in this paper to diagnose lung tumor from CT scan images. The input image (CT scan image) will be preprocessed initially using median filter to remove the noise. After applying preprocessing technique, the Dual-Tree Complex Wavelet Transform (DTCWT) segmentation technique is used for the edge detection. The Gray-Level Co-occurrence Matrix (GLCM) features are calculated based on the pixel values of the extracted image. These features can be compared with database images using Convolutional Neural Network (CNN) which facilitates in categorizing it as tumorous. After confirming that the affected area is tumorous, watershed segmentation algorithm is used to get the color features of the tumor.

Keywords: Preprocessed, DTCWT, GLCM, Convolutional Neural Network, watershed segmentation algorithm

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6.

Authors: **Sachin Ramesh Bhure, A. A. Warudkar**

Paper Title: **Mathematical Modeling for Routes and Cost of Local Transports in Pune City**

Abstract: Transportation problem is considered a vitally important aspect that has been studied in a wide range of operations including research domains. As such, it has been used in simulation of several real life problems. The transportation model is for the optimization of routes, cost and travelling of peoples with the help of public transport buses from the source to the destination by road. The data is collected which includes number of trips per day, cost of trips per trip ,distance between source and destination etc. manually through the questionery interview with the conductors drivers and the regular travelling peoples travelling on that route as well as data collection from PMPML office and calculation for minimizing the transportation cost have been done. The result of the research with proper scheduling, proper routing of buses can save Rs. 48865.875 in a 1 day. The saving of the transportation cost increases the profit of the PMPML. The total saving amount profit percentage is about 18.15% increase from saving transportation cost. The parameters as discussed above are considered and collected manually with the help of survey sheet and transportation model is prepared and after that calculation for minimizing the transportation cost have been done. The methods used for minimization of transportation of cost are Northwest corner method, Least count method etc. The result of the research gives with proper scheduling, routing of buses can save generate so much of revenue with saving of cost.. The amount saved from the transportation cost is utilized for increase the facilities in bus such as A.C, Automatic door system, Air

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suspension, Good quality of seats etc.

Keyword: Least cost method, Minimum transportation cost, North West corner method, Transportation problem.

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7.

Authors: **W. Sylvia Lilly Jebarani, Santhosh G J, Suresh Krishnan B**

Paper Title: **Conservation of Energy using Object Detection Model**

Abstract: Energy conservation has become a vital responsibility for every citizen. Considering classroom environment, electric appliances like fans and lights are usually unmonitored while students leave. It leads to the wastage of electricity. To save electricity, conventionally, sensors can be deployed to detect the presence / absence of person in the classroom and control electric appliances based on its trigger. Since (low-cost) sensors have reliability issues with shorter life span, it can't be used effectively. On the other hand, if costly (high precision and reliability) sensors were used to detect persons, deploying it in each and every classroom is not practicable due to very high initial investment. Here, this paper's approach is to use a medium quality, low cost night vision web-camera to detect persons inside classroom using YOLOv3 Object detection model built on top on TensorFlow framework. Computational capabilities for processing webcam footage is provided by PCs inside each and every classroom. (Assumption: Each and every classroom has a dedicated PC for sharing power-point slides) Switch board is configured with relays, which are connected in parallel to normal switches to allow manual intervention. Relays are controlled by Wi-Fi enabled micro-controllers like NodeMCU. Communication is made possible between NodeMCU and PC via LAN. By this means, a huge amount of electricity can be saved with least deployment cost.

Keywords: YOLOv3, NodeMCU, Relay, Common Objects in Context (COCO), Switch Board, DC Power supply.

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8.

Authors: **Harikrishna Pydi, Allu Venkata Dattatreya Reddy, Chowdavarapu Jeevan Rupesh, Pothugunta Chandana, Chittamuru Bharath**

Paper Title: **Sdn in Edge Computing Based on Penguin Foraging Behaviour**

Abstract: Over the years usage of computational devices have been increased rapidly. 3G and 4G network evolution has helped in seamless usage of the modern devices. As the users are increasing rapidly and 4G spectrum is been congested way too fast. These situations resulted in development of 5G Spectrum by unlocking the millimetre waves. Milli meter Waves are originally shortrange waves and cannot be passed through heavy objects for these solution Small Base station concept has been implemented which provides high coverage and less latency while using. A small cell is basically a miniature base station that breaks up a cell site into much smaller pieces, and is a term that encompasses pico cells, micro cells, femto cells and can comprise of indoor/outdoor systems. For this implementation the SDN plays an important role for maintaining the connection between Base stations. Penguin foraging behaviour can be taken as a reference for the search

algorithm in edge computing for getting faster results. Usually a penguin population comprises of several groups. Each group contains a number of penguins that varies depending on food availability in the corresponding foraging region. They feed as a team and follow their local guide which has fed on most food in the last dive. Similarly we follow the same process in small cell base station. Edge computing supports all devices simultaneous for processing and getting accurate results. They can be used for platform development for storage centric, server centric or even hybrid(storage-server) workloads.

Keywords: Edge computing, Software Defined Network, foraging behaviour, small cell base stations, Milli meter waves.

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	Authors:	**Priyajit Sen, Monish Mukul Das, Debabrata Sarddar, Rajat Pandit**
	Paper Title:	**Handoff Control in Satellite Communication Applying Multi Billboard Manager Method**

Abstract: LEO satellites play an important role in global communication system. LEO satellites have some advantages over GEO and MEO satellites, in respect of power requirement, end-to-end delay & more efficient frequency spectrum. But the main problem of LEO satellite, is that they have large relative speed than the speed of mobile nodes (MN) and earth, so that the handover occurrence is more. As a result, the call blocking probability (Pb) and force call termination probability (Pf) is higher. To overcome this problem, Billboard manager based handover (BMBHO) was introduced to reduce the scanning time significantly and also to reduce the Pf. But the main problem of single billboard manager (BM) is that, since all handover requests have to be processed from a single point. In this paper, we have proposed the concept of multi-billboard manager based handover (MBMHO) method to resolve this problem. Thus, handover request will be served more efficiently so that both Pb and Pf are minimized than the BMBHO method.

Keywords: Electromagnetic radiation, False handoff initiation, GPS (Global Positioning System), Handoff, MT (mobile terminals), Mobile IP, NGWS (Next-Generation Wireless Communication System).

9.

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10.	**Authors:**	**Vanshita Pansari, Amit Kumar Manjhvar**
	Paper Title:	**Fake Comments Detection with Sentiment Anatomy using Iterative Sequential Minimal Optimization Algorithm**

Abstract: It is significant to create electronicon stream markets,on stream communication networks, peer-to-peer functions, social media providerson stream and convenience customers. In reality, web based amenities are specially designed to overcome the risk of uncertainties & distrust inherent in the main concern of ecommerce applications & to increase the robustness of the system& resistance against fake clients & unbelievers. The aim of the Ecommerce platform is, moreover, to embrace one of the most efficient methods for understanding and evaluating user attempts to expose fraudsters. Or else, the fundamental objective of ecommerce amenities to exploit the profit & purchase rate, will be endangered & deteriorated through fake and ill-intentioned users. Individuals and organizations need to detect fake Comments. With disappointing and hidden features, it is difficult to identify counterfeit Comments simply by looking at a single Comments text. It is also why it is a difficult task to identify falsified Comments.This paper uses the sentiment anatomy (SA) tool for the identification of fake Comments to analyzeon stream film Comments. The texts and the SA system are used for a specific dataset of film Comments. We particularly compared the supervised SVM & SMO machine-learning process with the feeling classification methods of the analyzes in two different cases, without stopping phrases. Measured outcomes display that SMO process compared to the SVM process for both methodes, &it arrives at the maximum precision not only in the classification of text but also for finding duplicate analyses.

Keywords: Data Mining, Reputation System,on stream Movie Comments, Machine Learning method, SMO, SVM, Sentimental Anatomy, Text Classification, Fake Comments Detection.

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Authors: **Jyoti Neginal, Ruksar Fatima**

Paper Title: **Adaptive Steganography technique using DIDC Model**

Abstract: Digital media emergence has taken the world by storm, further with the growth of digital media also causes the high risk of security and it needs to be addressed. Data security is protecting the data, normally data protecting is parted into two category i.e. cryptography and stenography. Steganography provides the high-level security by hiding one data under the other; the data can be image, text or any other formats, image steganography is one of the highly research area and several researcher have proposed different technique. The main challenge in image steganography is to innocuous image without any suspicion, furthermore the existing steganography focuses only on minimizing the distortion function. In this paper, we aim to develop an adaptive steganography technique named DIDC, which is basically based on the DPEs that approaching the rate transformation bound under the Steganography algorithm. Furthermore, the DIDC is evaluated by considering the two feature set SRM and max SRMd2 and error detection rate as the parameter, the comparison analysis shows that DIDC model outperforms not only state-of-art but also existing NFM model. Further, we also plot the AUC and the observation suggest the remarkable result.

Keywords: - Data hiding, Digital Steganography, rate transformation bound, DIDC, DPEs.

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Authors: **Nayana R Shenoy, Anand Jatti**

Paper Title: **Segmentation of Thyroid Nodules using Improvised U-Net Architecture**

Abstract: Thyroid nodules are considered as most common disease found in adults and thyroid cancer has increased over the years rapidly. Further automatic segmentation for ultrasound image is quite difficult due to the image poor quality, hence several researcher have focused and observed that U-Net achieves significant performance in medical image segmentation. However U-net faces the problem of low resolution which causes smoothness in image, hence in this research work we have proposed improvised U-Net which helps in achieving the better performance. The main aim of this research work is to achieve the probable Region of Interest through segmentation with better efficiency. In order to achieve that Improvised U-Net develops two distinctive feature map i.e. High level feature Map and low level feature map to avoid the problem of low resolution. Further proposed model is evaluated considering the standard dataset based on performance metrics such as Dice Coefficient and True positive Rate. Moreover our model achieves better performance than the existing model.

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Keywords: thyroid cancer, segmentation, Improvised U-Net, ROI.

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Authors: **P. I. Silva Medina, J. Mejías Brito, J. F. Tejeda Castrejón, C. L. Castrejón Cerro, O. Lúa Madrigal**

Paper Title: **Characterization of a computer tool for Industrial Security Management in MSME's**

Abstract: In the present work, a study is carried out on companies in the state of Colima with the purpose of compiling the characteristics that must be contained in a computer tool capable of facilitating the administration of industrial safety. With the design characteristics detected, it is intended to establish the basis for an automation proposal that benefits Micro, Small & Medium Enterprises with a tool tailored to the normative, procedural and operational reality of the Mexican environment, so that its extrapolation to the rest of the country is totally feasible since the regulatory framework of reference is federal and the legal implications to which its application impacts apply throughout the national territory.

Keywords: Health and Safety, Information Technology, MSME's, Security Management.

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Authors: **Shefali Jumnani, Shraddha Agrawal, Samiksha Verma, Swasti Singhal**

14.

Paper Title: **Use of Machine Learning Models in Sales Forecasts**

Abstract: In this paper, we present a brief survey of usage of various machine learning models and their role in retail sales forecasts. The purpose of this paper is to enlist a few popular approaches in retail sales and study their scope and areas of application. We analyze how these models have evolved over time stating the significance of each model in brief.

Keywords: autoregressive integrated moving average, artificial neural network, random forests, retail sales forecasting, support vector regression.

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15.

Authors: **Manjari Jain, Sagar, Saravanan K**

Paper Title: **Smart Secured Wireless ATM using Finger Print Recognition**

Abstract: Automated Teller Machines (ATMs) have become an essential part of the individual's daily routine as it is utilized to change one's existing ATM Personal Identification Number (PIN), check one's amount balance and its most important function is to extract one's money. Nowadays, the culprits have the latest technologies at their disposal, which aids them, to easily hack into the secured systems of the banks and collect the confidential information of the clients such as their ATM PINs, Card Details, etc., To counter that, fingerprint sensing incorporated with One Time Passwords (OTPs) has been suggested, as it is globally accepted that the fingerprints of every person are unique and different, while OTPs don't hold its value like ATM PINs. This research is based on using Python Graphical User Interface (GUI) as the ATM screen. The innovation in this study exists in two ways. The first one is that OTPs will be sent via Python Graphical User Interface (GUI), on the client's registered email address also (along with the client's recorded phone number), so that OTPs can still be accessed in case of Subscriber Identity Modules (SIMs) lost. The second one is that including a Uniform Resource Allocator (URL: www.msbank.co.in) for online enrollments of the clients and producing Application Program Interfaces (APIs). The main idea is to first check the client's fingerprints and then to verify the OTPs from our Admin-Password Protected Mongo Database. The involved algorithm also maintains a check that the same email address cannot be utilized again for registration.

Keywords: APIs, Fingerprint, MongoDB Python GUI.

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16. **Authors:** **Suspended**

Paper Title: **Suspended**

17. **Authors:** **Nataliya Lytvynenko, Olexander Myasischev, Serhii Lienkov, Yuriy Husak, Ivan Starynskiy**

Paper Title: **Designing of the Aero Video Intelligence on the STM32H Microcontrollers Basis**

Abstract: The practical possibility of using the flying wing as an aero video intelligence is being considered. In this regard, an experimental sample was built with a wingspan of 1000 mm and a flight weight of up to 500 g, on that the SPRacingF3 Acro flight controller was installed on the basis of the STM32F303 microcontroller with a GPS receiver and a course video camera for FTP flights. Based on the INAV firmware, the main attention was paid to setting the flight modes NAV RTH, NAV FAILSAFE to ensure the guaranteed return of the wing to its launch zone in case of the radio communication loss with the video camera or control panel. The microOSD board has been configured for the possibility of the overlaying telemetry data on the images, that received on the monitor from the course camera. The setup and testing of the semi-automatic launch of the NAV LAUNCH flying wing was carried out, that greatly facilitated the start of the wing in windy weather and from the small areas. It has been practically shown that the flight time was about 40 minutes at an average speed of 40-45km/h with the 5x3 inch three-blade propeller on the three Sony / Murata US18650VTC5 rechargeable batteries with the capacity of 2600 mah.

Keywords: SPRacingF3, MicroOSD, INAV, GPS receiver, FPV, STM32F, NEO-6M-0-001, ESC controller, MWOSD, Failsafe, Ardupilot.

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18.

Authors: **Dmitry Dubinin, Vadim Denisov, Alexander Mescheryakov**

Paper Title: **Algorithm for Eliminating of the Limiting Disambiguation of Measurement Made by Phase Radio Direction Finders by Sorting Out the Abnormally Large Errors**

Abstract: The aim of the article is to find the upper probability limit of the measurement results to correct disambiguation in case of multi-base phase direction finders, where all bases are ambiguous. Direction finding is done using the maximum likelihood method based on a set of measured phase differences and an algorithm of rejecting (erasing) abnormally large measurement errors. The theoretical background of the article is the maximum likelihood method applied to disambiguate results of the phase measurements in multi-base measuring systems. The physical meaning of the method is that if the disambiguation process is correct, the results of angular measurements for each base are grouped around the true value of bearing. The mathematical background of the article are methods of linear algebra based on the geometric interpretation of disambiguation measurement results. We obtained formulas for calculating upper bounds for the probability correct disambiguation of measurement results, which are applicable to direction finders with linear, planar and conformal antenna arrays.
The obtained theoretical relations are exemplified by a numerical calculation of error probability including the upper bounds for a specific three-base direction finder 'bad' measurement results. The calculations proved effectiveness of the proposed algorithm, which depends on the accuracy of phase measurements.
The proposed algorithm is applicable not only in case of the direction finders, but also for other multi-base phase measurements.
The work may be interesting for designers of direction finders in terms of achievable accuracy of measurement results even if some of the results are rejected.

Keywords: ambiguity vector, antenna array, bearing estimation, likelihood function, multibase phase direction finder

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19.

Authors: **K.Subraja, N.Geetha, K.Mahesh**

Paper Title: **BITS – A Novel Video Encryption Algorithm**

Abstract: Increased digital information exchange poses a major threat against confidentiality of the

information being shared. The information exchange among the parties is said to be efficient only if the transmission process is secure and withstand security breaches. The information shared may be text, image, audio or video. Because of the availability of Internet facility around the world, video became the prime source of information exchange. We all know that anything in the form of visuals will reach the target audience in an efficient manner. They are considered as the major component of the education sector. This paper proposes a novel real time video encryption called BITS. BITS is nothing but Blocking-Inverse-Transposition-Substitution. Initially the video frames are divided into four blocks and the block contents are inverted. Then the entire content of the frame is transpositioned based on the key. And finally the contents of the frame is substituted with different random value. This proposed algorithm is strong against brute-force and statistical attack. The proposed algorithm is suitable for all real time multimedia environments. This algorithm is a compression independent one. The first two phases of the BITS algorithm are implemented using MatLab. The time taken for the computation steps are recorded and analyzed in this paper.

Keywords: Information Security, Video encryption, BITS, Confidentiality.

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20.

Authors: **Akhmetov Adilbek Agabekovich, Yuldashev Azamat Ismoilovich**

Paper Title: **Advanced Disc Spray Tip Universal Fan Sprayer**

Abstract: Fan sprayers such as OVH-600 and VP-1 are of indisputable importance in the fight against agricultural pests and diseases, but they have significant disadvantages associated with uneven application of pesticides due to the oscillating movement of their working bodies. To eliminate this drawback, the Agrikhim joint venture developed a universal fan sprayer VP-1IB, which processes field crops, orchards and vineyards based on controlled airborne droplets with simultaneous continuous girth of the entire implement width within ± 900 of the sprayer symmetry axis (in a total of 1800), i.e. around the perimeter of the treatment area. The main working element of the universal fan sprayer is the spraying tips quality performance indicators, which largely depends on the correct choice of parameters of its parts, including the radius of the input channels to the swirl chamber on the swirl disk, to justify the rational value of which this article is aimed.

Keywords: sprayer, spray tips, airborne droplets, radius, chamber, swirls, nozzle, inlet channels, entrance angle.

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21.

Authors: **Ganugula Sri Harshan, Sudheer Rayudu, Krishnan Anush Bharadwaj, Saravanan K**

Paper Title: **Finger Vein Recognition Using Vgg-16 Cnn Algorithm**

Abstract: With the advancement in the electronic technology, data identification and security is to be mainly considered as a factor in the security. Biometric recognition has been taken in to consideration for security purpose. Data security has to be done to prevent the system security from transmission of data by unauthorized users. Various authentications are taken in to consideration but most commonly focuses on finger print biometric system. Biometric recognition is taken in priority which is high safe and security oriented. Preprocessing, extraction and Equal Error rate are taken in to consideration. In this we are mainly focusing in finger vein authentication domains over the system implementation.

Keywords: LBP, Data augmentation, Resnet, VGG-16, ERR, CNN.

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22.

Authors: **Kambala Monica Sai, Haritha Chandrika P, Kasim Bebe, G. S Roja Pramila, G. Sankara Rao**

Paper Title: **Optical Character Recognition using CRNN**

Abstract: Optical Character Recognition (OCR) is a computer vision technique which recognizes text present in any form of images, such as scanned documents and photos. In recent years, OCR has improved significantly in the precise recognition of text from images. Though there are many existing applications, we plan on exploring the domain of deep learning and build an optical character recognition system using deep learning architectures. In the later stage, this OCR system is developed to form a web application which provides the functionalities. The approach applied to achieve this is to implement a hybrid model containing three components namely, the Convolutional Neural Network component, the Recurrent Neural Network component and the Transcription component which decodes the output from RNN into the corresponding label sequence. The process of solving problems involving text recognition required CNN to extract feature maps from images. These sequence of feature vectors undergo sequence modeling through the RNN component predicting label distributions which are later translated using the Connectionist Temporal Classification technique in the transcription layer. The model implemented acts as the backend of the web application developed using the Flask web framework. The complete application is later containerized into an image using Docker. This helps in easy deployment on the application along with its environment across any system.

Keywords: Artificial Intelligence, Connectionist Temporal Classification (CTC), Convolutional Neural

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Network (CNN), Flask web framework, Long-Short Term Memory (LSTM), Recurrent Neural Network (RNN)

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23.

Authors: **Rajesh Kanna, S Kalpana, Pushpa Sharma**

Paper Title: **Application of Data Mining in Hydrocarbon Transportation, Storage and Safety Handling**

Abstract: Considering the present scenario, in the hydrocarbon industries, heavy oil prices and need for explorations leads to decide the economy of the country. Technology had been identified and experimentally considered for new hydrocarbon exploration with the help of data mining. Besides, transportation and storage of the produced Hydrocarbon has been monitored and can be maintained in control limit using data mining too. Hydrocarbon can be stored within a tank made up of steel, iron or combination of suitable material. The tanks are properly designed, erected and all its fittings are secured. Proper construction and maintained will aid in preventing any leakage of petroleum products to the environment. Current study is about influence of hydrocarbon transportation and storage using available methodology in upstream hydrocarbon sectors. Petroleum reservoir consist of complex heterogeneities that are not limited to extract the hydrocarbon from the subsurface to surface. Post drilling, produced crude and gas will be transported fuel have to transported to refineries for further processing of crude into various products. Apart from upstream, persons working on midstream and downstream plays a crucial role. Crude hydrocarbon can be transported by vessels, pipelines and road. Pipeline and truck transportation are considered to be the prior most than other modes. Transporting oil and gas by pipeline or rail is in general quite safe. But when the safety of transporting oil and gas by pipelines and rail is compared, taking into consideration the amount of product moved, pipe-lines are found to be the much safer transportation method. Refinery has to ensure safety aspects of storing the received petroleum crude which has to be processed in to commercial products. They must be maintained in prescribed temperature and pressure condition. In order to make this successful, some of the safety protocols has to be followed which are defined and approved ministry and safety norms. This article deals about the process and procedures in transporting and storage of fuels from upstream, midstream and downstream. Hence, the protocols and other safety precaution aspects are discussed to have a safe storage and handling practices.

Keywords: Downstream, Hydrocarbon, Midstream, Safety, Transportation.

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24.

Authors: **D. Mabuni**

Paper Title: **Classification Algorithm in Data Mining Based on Maximum Exponential Class Counts Technique**

Abstract: A new split attribute measure for decision tree node split during decision tree creation is proposed. The new split measure consists of the sum of class counts of distinct values of categorical attributes in the dataset. Larger counts induce larger partitions and smaller trees there by favors to the determination of the best spit attribute. The new split attribute measure is termed as maximum exponential class counts (MECC). Experiment results obtained over several UCI machine learning categorical datasets predominantly indicate that the decision tree models created based on the proposed MECC node split attribute technique provides better classification accuracy results and smaller trees in size than the decision trees created using popular gain ratio, normalized gain ratio and gini-index measures. The experimental results are mainly focused on performing and analyzing the results from the node splitting measures alone.

Keywords: Categorical attributes, categorical datasets, larger counts and larger partitions, maximum

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exponential class counts (MECC).

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25.

Authors: **Ajay Krishna .V.M, Madhusmitha .S, Nirmal .A, Dhinesh Kumar .S, U.Sowmmiya**

Paper Title: **Energy Management between Solar Panel and Battery**

Abstract: This project ensures a reduced energy loss of the renewable source and efficiency of solar and battery network. Because of the erratic irradiations and temperature, the solar source is called an uncontrollable source. In a microgrid, an energy storage device is attached to the photovoltaic system and uses a bidirectional DC-DC converter to monitor the charging, retention and discharge of batteries based on the load requirement. They are simulated to work under five conditions which has different relationships between each other. When synchronized with the battery bank this device acts controllable. Battery helps in reduction of loss of renewable source of energy. The type of operation is determined by the situation or algorithm. An integrated strategy for handling the energy is given to increase the performance of Photovoltaic systems. The expected system efficiency is measured using MATLAB / simulink for varying loads.

Keywords: Battery, Energy management, Photovoltaic system, boost converter.

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26.

Authors: **Sunil B Ingole**

Paper Title: **Experimental Heat Transfer using Insert for Nusselt Number Enhancement**

Abstract: Various heat transfer and its enhancement techniques are found in literature. Many researchers have focused on such topics typically in last decade of last century. The paper deals with experimental work of the passive techniques which do not require direct application of external power, whereas the active techniques require an. Exact method and system used for research from 1964 till around 2000 is presented. A case study of twisted tape of Y as 4.2 and 5.2. It is seen that overall heat transfer coefficient is a function of Reynolds number. .It is noticed that on the tube side the flow conditions have included both laminar and turbulent flow. Graph presents shows heat transfer data for both twisted tapes. It can be seen that the overall heat transfer coefficient in general increase with increase in Reynolds number. For a given Reynolds number the overall heat transfer coefficient increase with decrease in twist ratio i.e. tape with tighter twist. Also friction factor increase with decreases in the twist ratio 1

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Keywords:

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27.

Authors: **Slim Dhahri, Essia Ben Alaïa**

Paper Title: **Robust Fault Estimation and Fault-Tolerant Control Based on Sliding Mode Observer for Takagi–Sugeno Fuzzy Systems Subject to Actuator and Sensor Faults**

Abstract: In this paper, the problems of fault estimation and fault-tolerant control for Takagi-Sugeno fuzzy system affected by simultaneous actuator faults, sensor faults and external disturbances are investigated. Firstly, an adaptive fuzzy sliding-mode observer is designed to simultaneously estimate system states and both actuator and sensor faults. Then, based on the online estimation information, a static output feedback fault-tolerant controller is designed to compensate for the effect of faults and to stabilize the closed-loop system. Moreover, sufficient conditions for the existence of the proposed observer and controller with an H∞ performance are derived based on Lyapunov stability theory and expressed in terms of linear matrix inequalities. Finally, a nonlinear inverted pendulum with cart system application is given illustrate the validity of the proposed method.

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Keywords: Fault estimation, sliding mode observer, static output feedback fault-tolerant controller, Takagi-Sugeno fuzzy system.

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28.

Authors: **Anuja Bhondve, Shweta Koparde, Vaishali Latke**

Paper Title: **Effective Revisable Data Hiding in Encrypted Image for Protection of Image Content**

Abstract: In this article, we propose a reversible method for hiding data, in which the original image and hidden data can be restored on the receiving side. The owner encrypts the original image using an encryption key to protect the privacy of the image content. Each block of encrypted image is added to the little secret by Hider data using the key data hiding. Data hiding process causes only a small change in each partial pixel flip block, which improves decoded image visual quality. The image can be easily decoded receiver using the key, data encryption key to hide the adaptive soft characteristic of the evaluation function along the direction of the isophote, the secret data can be extracted from a decoded image and original image recovery can be restored more successfully.

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Keywords: Privacy protection, Reversible data hiding, encrypted images, decrypted images, image recovery.

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Authors: **Janarthanan R, Sreevidya V**

Paper Title: **Strength Enhancement on Mechanical Properties of Geopolymer Concrete with Magnetized Water and Recycled Coarse Aggregate**

Abstract: Cement is probably the mostly widely used construction material in the world. However, the production of cement releases CO2 into the air. Greenhouse effect is mainly caused by carbon- di-oxide. Hence, there is a need to develop sustainable alternatives to Portland cement. One of the suitable alternatives is usage of Geo-Polymer Concrete (GPC) which is made from utilization of waste materials like fly ash and ground granulated blast furnace slag (GGBS) with suitable alkali activators. In general, chemical admixtures are added to get concrete with increased strength. The chemical admixtures for increasing the strength are not easily accessible in rural areas. The fresh and hardened properties of concrete are improved by using magnetic water. The scaling and corrosion are greatly reduced using magnetic water. It is due to the change in microstructure of water molecules making it soft water. Further, recycled coarse aggregate was used with coarse aggregate in the study. The specimens were cast and were investigated for Compressive strength, Split Tensile strength and Flexural strength test after 7 days and 28 days of ambient curing. It was observed that Compressive, Split Tensile and Flexural strength of the GPC specimen with magnetic water increased compared to other mix proportions.

Keyword: Cement, Corrosion, Geo-polymer, Magnetic water.

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Authors: **Mayur Nikhar, Laxman .P. Thakre**

Paper Title: **Smart Agricultural Farm Enhancement with K-Means Learning**

Abstract: In the modern learning of Machine has to be emerged in the gather with large data technology and with respective Large to performance computing to indicate. Classing cluster is a grouping of information and its objects that are identical to one another and different to the information objects in another clusters property are added in new opportunities that things for data science for recommendation in recognized the multi-disciplinary or large descriptive way such many Agri-technologies and domain. This paper comprehensive review marginal shows that research to applications and more than of machines and its application learning in agricultural production systems is forward to conduction. Data mining is a specific field of computer and information science with substantial point of view of knowledge discovery from expansive database or dataset. Resulted formation works carried out forming were categorized top to bottom in form crop indication and result Segregation, including used on yield prediction filed, forming disease Mestagestic, detection crop and weed management and quality, and livestock management, species recognition Devises, along with applications on animal welfare and live detection and stock production soil management and water management. Rest of K-means algorithm for examination of fertility of soil Ratio are objective and Resolve the Continuity amount estimating implementation and algorithm’s high time complexity. In crop method filtering results obtain classification of various crops the presented paper demonstrates forming how farming will improved with the help machine learning methods are used. In the case of resection K-means algorithm is utilize to cluster and Marathwada town soil nutrient information for Six successive year clustering outcomes show that the precision

rate raised ratio is year by year The Remote location applying machine such as GIS and GPS learning to sensor information, field management systems are more accurate to developing into real-time AI authorize plans and sentimental values that supports rich suggestion and awareness for farmer choice action and support. The Resultant of this paper are compared and modern the performance of commonly used classical and analytical k-means clustering procedures as well as parallel k-means clustering to realize formation the advantage of the parallelism of algorithm on agricultural data. The present investigation has been taken up to achieve the above-mentioned goal.

Keywords: Algorithms Advantages, Clustering, Crop Adverted, Data Driven Farm Management, K means Algorithm, water management.

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Authors:	**K.S.N Sai Abhishek, S. Rahul Guptha, V. Shashank Srivatsav, Boopathi M.**
Paper Title:	**Unmanned Grounded Vehicle for Surveillance and Infiltration**

Abstract: Surveillance in remote areas can prove to be a difficult task due to the risk of safety. Therefore, this project is aimed to develop a robot that can be used for both surveillance and infiltration purposes. It is a land-based system where rear and front wheels are used as a form of locomotive control. It is an unmanned vehicle where it is controlled with the help of Bluetooth through either phone or laptop. This robot can also differentiate between friend and foe mainly with the help of image processing. By implementing this robot, one can substitute military personnel on the battlefield which can save many lives. It can also reduce human effort and error during war times.

Keywords: image processing, autonomous robot, dc motors, servo motors, Bluetooth module (HC-05)

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Authors:	**Bhavana R, Rakshitha S G, Rajashree Shettar, Minal Moharir**
Paper Title:	**Microservice Architecture using ASP.NET Core**

Abstract: Microservice architecture is a variation of the structured form of service-oriented architecture that arranges an application a series of loosely coupled services. This is a self-contained process that takes advantage of specific and unique business capabilities. The Microservice architecture approach provides many advantages in terms of scalability and flexibility. Microservices can be built by either dotnet framework solution (such as asp.net and asp.net web Api) or use solutions based on a core Microsoft dotnet framework (such as asp.net core).This paper presents an overview of Microservice architecture along with its advantages and disadvantages. We have also presented why ASP.NET core can be used instead of ASP.NET to build Microservices.

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Keywords: Microservice Architecture, ASP.NET core Scalability, Services, Flexibility.

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Authors: **Natalia Kalkova, Olga Yarosh, Ella Mitina, Vyacheslav Khokhlov**

Paper Title: **Asymmetry of Visual Perception When Choosing Products: Methods and Algorithms of Neuromarketing**

Abstract: Consumer behavior is a complex and multi-step process. It is necessary to study consumer choice with different alternatives and choice parameters, which will allow us to identify behavioral characteristics in different demographic groups. The article deals with theoretical and practical issues of consumer behavior when choosing food. The article uses classical marketing methods and neuromarketing approaches. Based on this comprehensive approach, an assessment of the structure of food consumption was carried out, as well as a pilot study of the characteristics of consumer choice depending on gender characteristics.The study of statistical data showed that the decline in real incomes of the population in Russia affected the structure of food consumption. There is a decrease in the volume of demand for meat, vegetables, and fruits, which is associated with a decrease in the population's ability to pay and an increase in the level of poverty.Gender characteristics in the consumer's preferred and actually purchased products were identified using the neuromarketing research methodology. Thus, it was determined that the speed of decision-making when choosing products is higher for women than for men, since women are more frequent buyers. The high speed of decision-making by women is most likely a result of emotional choice of products. Using visual advertising signals can increase attention to incentives and increase motivation. It was also found that in the absence of external restrictions: the number of products chosen and sufficient financial resources, women consumers are strongly influenced by internal restrictions, but men tend to take risks. Women try to be Thrifty, choosing a standard set of products that make up their diet, men in conditions of unlimited financial resources tend to buy expensive goods without thinking about the costs. The study of consumer choice between those products that were visually noticed and those that were selected as a result of the survey showed that there is a significant asymmetry between what is desired and what is chosen. To assess the level of asymmetry of visual attention, we proposed a method for assessing the asymmetry of consumer preferences, the use of which allows us to assess the gap between the desired and purchased goods. Based on the coefficient of asymmetry of consumer preferences, it is possible to assess the level of consumer imbalance and timely prevent social and economic dissatisfaction in different gender groups. The possibility of changing consumer choice under the influence of various stimulating factors is proved. The results obtained can be used in the practical activities of food retailers and food manufacturers when promoting their products with gender differences in mind. The results also need to be taken into account when developing government strategies for developing the food market and supporting healthy lifestyles and changing consumer culture.

Keywords: consumer, consumer behavior, consumer choice, neuromarketing, asymmetry Funding: The research was funded by the Russian Foundation for Basic Research, project number № 20-010-00473 A

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34.

Authors: **Ashraf M. A. Shrawai, Ateaya B. Azeez**

Paper Title: **Correction of Very High-Resolution Satellite Images using Control Points Captured by Web Map Service (WMS) server: Google Earth**

Abstract: The recent progress for spatial resolution of remote sensing imagery led to generate many types of Very High-Resolution (VHR) satellite images, consequently, general speaking, it is possible to prepare accurate base map larger than 1:10,000 scale. One of these VHR satellite image is WorldView-3 sensor that launched in August 2014. The resolution of 0.31m makes WorldView-3 the highest resolution commercial satellite in the world. In the current research, a pan-sharpen image from that type, covering an area at Giza Governorate in Egypt, used to determine the suitable large-scale map that could be produced from that image. To reach this objective, two different sources for acquiring Ground Control Points (GCPs). Firstly, very accurate field measurements using GPS and secondly, Web Map Service (WMS) server (in the current research is Google Earth) which is considered a good alternative when GCPs are not available, are used. Accordingly, three scenarios are tested, using the same set of both 16 Ground Control Points (GCPs) as well as 14 Check Points (CHKs), used for evaluation the accuracy of geometric correction of that type of images. First approach using both GCPs and CHKs coordinates acquired by GPS. Second approach using GCPs coordinates acquired by Google Earth and CHKs acquired by GPS. Third approach using GCPs and CHKs coordinates by Google Earth. Results showed that, first approach gives Root Mean Square Error (RMSE) planimeteric discrepancy for GCPs of 0.45m and RMSE planimeteric discrepancy for CHKs of 0.69m. Second approach gives RMSE for GCPs of 1.10m and RMSE for CHKs of 1.75m. Third approach gives RMSE for GCPs of 1.10m and RMSE for CHKs of 1.40m. Taking map accuracy specification of 0.5mm of map scale, the worst values for CHKs points (1.75m&1,4m) resulted from using Google Earth as a source, gives the possibility of producing 1:5000 large-scale map compared with the best value of (0.69m) (map scale 1:2500). This means, for the given parameters of the current research, large scale maps could be produced using Google Earth, in case of GCPs are not available accurately from the field surveying, which is very useful for many users.

Keywords: WorldView-3, Very high-resolution satellite images, Geometric correction, GPS, Web Map Service (WMS) server, Google Earth.

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35.

Authors: **Ateaya B. Azeez, Researcher, Ashraf M. Shrawai, Researcher**

Paper Title: **Low Cost Handheld 3D Scanning for Egyptian Architectural Artifacts Acquisition**

Abstract: Surface reconstruction of objects using photogrammetry and terrestrial laser scanning systems (TLS) has been a topic for research for many decades, especially for culture heritage data recording. Recently, many advances into these systems are now available in the market, which give the availability of collecting a huge number of geo-referenced 3-D points covering any object surface. Due to speed and efficiency of data acquisition by means of terrestrial laser scanners, researchers and designers can select the reliable technique, depending on their application, that can be complete to give good results for the complex surfaces such as heritage objects.

As Grand Egyptian Museum (GEM), located nearby the Giza Pyramids, is set to open by 2020, which considered as the largest museum from its type all over the world, with a huge area covered about a half million m2. GEM is proposed to be a unique museum all over the world for presenting a huge number from old history Egyptian artifacts.

Consequently, there is a vital need for building a huge digital database containing complete information for this large number of artifacts. Mobile applications are presently at the primacy of documenting historical and archaeological sites. The current paper examine the methodological framework adopted for one high copy of Pharaonic artifacts, namely Offering Carrier, using hand held laser scanning and convert the results to a mobile application.

Keywords: cultural heritage, handheld scanners; laser scanning, Pharaonic artifacts.

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36.

Authors: **Arun Prakash, Devendra Singh, Ajay Kumar Sharma**

Paper Title: **Static Structural Simulation Analysis of Leaf Spring using Ansys Workbench**

Abstract: The leaf springs are different spring styles used for automotive suspension systems. In addition to the use of energy absorption equipment, the ends of the spring can be pointed in a certain direction as it deflects as a structural function. Not primarily supporting vertical loads but isolating road-induced vibration are the principal feature of leaf spring. The present research aims at studying the safe load of the leaf spring, showing how easily an easy, safe driving speed is achieved. A standard TATA-407 light commercial vehicle leaf spring configuration is chosen. Finite element analysis for safe stresses and pay loads has been done. Conventional materials and alternative materials in spring construction used in the present work have been studied.

Keywords: Leaf spring, Geometric modeling, Static analysis, Leaf spring, Composite material, FEM, ANSYS, Solid work.

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Authors: **Yusupov F., Khudayberganov T.R., Otamuratov H.Q., Shomuratova I.I., Allaberganova M.R.**

Paper Title: **Method of Applying the Program 3ds Max on the Topic of the Use of Global Illumination**

Abstract: The purpose of the study was to examine a set of tools of 3Ds MAX that allow working with 3D graphics and animation. To do this, we investigated the lighting methods in modeling, allowing us to create models of different complexity. The article discusses global illumination, with which you can create particle simulations with simulated real world effects, create and break bonds between particles, and collide particles with each other and with other objects.

Keywords: 3DS MAX, GI, global illumination, direct illumination, modeling.

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38.

Authors: **Selina Ruby.G, Dinesh.S, Bharath Raj.P, Kishorenandha.S**

Paper Title: **Assessment on Influence of Corncob Ash as a Partial Replacement of Cement in Concrete**

Abstract: In an attempt to renovate waste product into constructive material for the building purpose, this research considered the use of corn cob ash (CCA) as a partial replacement of cement. Hence, in this research, we have proposed an eco-friendly solution by investigating the utilization of corncob ash with 0, 5, 10 and 15% replacement for cement in M30 grade of concrete Mechanical Properties such as compressive strength, Split tensile strength and Flexural strength at 7,14,28 days are examined in laboratory. The results reveal that Corn Cob Ash can be used as a partial replacement for cement which in turn reduces the emission of greenhouse gases.

Keywords: Agricultural waste, Corncob Ash, Mechanical Properties, Replacement of cement.

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39.

Authors: **Archana K, K.L. Sudha**

Paper Title: **Different Spectrum Sensing Technique in Cognitive Radio Environment**

213-220

Abstract: A cognitive radio (CR) is one of the wireless sensor networks and the use of CR is increasing day by day. It is the process of learning via perception, planning, reasoning and continuously updating and upgrading the academic history of information. The cognitive radio has spectrum sensing (SS) problem in opportunistic spectrum access process. The SS, where the second user has to fill the unused spectrum of a licensed user when primary user (PU) not in use. It may arise interference problem to the user by the transmission of information in WSNs. Thus; this paper providing the comprehensive survey with the brief explanation of cognitive radio along with SS methods to reduce the issues appear in CR. The open research problems are discussed by considering previously existed research papers.

Keywords: Cognitive radio (CR), Primary user (PU), Spectrum sensing (SS), Wireless Sensor Network (WSN)

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Authors: **Ravendra Kumar, Rahul Sajwan, Praveen Kumar Jha, Sachin Sharma**

Paper Title: **Challenges in Face Detection and Recognition Techniques**

Abstract: Face Recognition System is popular topic in the biometric world .This system provide Features to detect the person's face and identify on basis of existing records in database .The aim of this study is to described how to show various facial features of an image. Face Recognition system, based on Biometric AI, uniquely finds out a person by analyzing the person's facial textures and shape. In this paper, our aim is to study various face detect and recognition techniques such as Harr Like Feature Algorithm resulting to retort criminality and public crisis. Also, some facial recognition approaches PCA and LDA have been discussed in the research paper for abstracting the image information.

Keyword- Face recognition system, biometric, database, facial features.

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41.

Authors: **Christina Subiksha W, Nandhini A, Bharath K P, Mahalti Mohammed Sohail, Rajesh Kumar M**

Paper Title: **Speech Signal Analysis and Classification of Dominant Parameter for Pathological Voices**

Abstract: The primary objective of the project is to analyze speech signals by determining the important parameters that affect the voice of an individual which leads to various voice disorders. The analysis is carried out based on the individual's age and gender with the help of the pattern recognized from each sample and the value of each parameter is compared with the nominal values of the healthy person with respect to their age and gender using the Praat software. The secondary objective is the classification of the voice signal into normal and abnormal voice samples using the machine learning software Konstanz Information Miner (KNIME).

Keywords: Harmonics-to-noise ratio (HNR), Jitter, Konstanz Information Miner (KNIME), Praat, Shimmer.

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Authors: **Nandhini A, Bharath K P, Mahalti Mohammed Sohail, Rajesh Kumar M**

Paper Title: **Denoising of Speech Signal using Empirical Mode Decomposition and Kalman Filter**

Abstract: Speech denoising is the process of removing the noise from the noise corrupted speech. The applications of speech denoising are used in speech enhancement, speech recognition and many more. In this work, a new approach is proposed to de-noise the speech which is corrupted from different noises, Empirical mode decomposition and the Kalman filter (EMD-KF) is used for speech denoising in the proposed work. The clean speech is corrupted by the noise with the different SNR's, and further Empirical mode decomposition (EMD) is applied to the noise corrupted speech later the obtained resultant speech is passed through the Kalman

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filter (KF) which gives the denoised speech. The result shows that the mean squared error (MSE) values of EMD-KF are extremely less when compared to other methods like discrete wavelet transform (wavelet families like Daubechies and Symlet), empirical mode decomposition (EMD) and moving average filter followed by empirical mode decomposition (MA-EMD). As an application the proposed algorithm is used in the feature extraction for speech recognition. Mel frequency cepstral coefficient (MFCC) is performed on both the original speech and the denoised speech and found majority of the denoised speech features are similar to the original speech features and few denoised speech features are nearby to the original speech features.

Keywords: Empirical mode decomposition (EMD), Kalman filter (KF), Mel-frequency cepstral coefficient (MFCC), Speech denoising.

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Authors: **A. Goutham Sai Mahesh, S Nivash, Revathi S**

Paper Title: **Advantages of Spectrally Efficient Frequency Division Multiplexing Over Orthogonal Frequency Division Multiplexing**

Abstract: An analysis on Spectrally Efficient Frequency Division Multiplexing (SEFDM) is contrast with Orthogonal Frequency Division Multiplexing (OFDM) considering the impact on Peak to Average Power Ratio (PAPR) and nonlinearities within fibre. With respect to OFDM the sub-carriers in SEFDM signals are compressed adjacent to each other at a rate of frequency lesser than the symbol rate. At the receiver end we have utilized the Sphere Decoder which is used to recover the data to remunerate the Interference created by the compressed signals (ICI) faced in the system. This research shows the advantages by using SEFDM and evaluates its achievement. PAPR. when compared with OFDM, while effects of non-linear fibres are considered. The use of various formats of modulation going from 4-QAM to 32-QAM, shows that the SEFDM signals have a noteworthy increment in the transmission length with respect to ordinary signals.

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Keywords: Spectrally efficient frequency division multiplexing (SEFDM), orthogonal frequency division multiplexing (OFDM), optical fibre communication.

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Authors: **Alarqam Saeed Batarfi Alkendi, Habib Khan**

Paper Title: **Effect of Electronic Medical Record Systems on Patients, Physicians, and Healthcare Businesses**

Abstract: Paper In the wake of a big shift of the world from the manual patient data management system to the automated process, many technologies have emerged. Needless to say that EMR is one epitome of such technological evolutions in the healthcare field. Though many hospitals as well as healthcare entities have acknowledged this and marching their services towards this change, some laggards persist. The present research tried to re-emphasize the significance of EMR by bringing the effect of EMR system on the group of stakeholders like patients, physicians and businesses from the response of hospital staff. The data, thus collected by sharing the google questionnaire to the staff of both type of branches has fetched 325 responses from the non-EMR implemented hospitals and 308 responses from the EMR implemented hospitals. It is obtained from the results that all the workflows are vital for the process of EMR implementation and are inter-dependent.

Keywords: EMR – Electronic Medical Record; EMR Effect.

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Authors:	**Sameer S Patil, Darshan G. Gaidhankar, Mrudula S. Kulkarni**
Paper Title:	**Ferrocement Panels Under Flexure By Partial Replacement of Cement With Marble Powder.**

Abstract: Ferrocement is largely used material in today's modern structural engineering technology. In this case study the main aim is to study flexural behavior of ferrocement by replacing cement content by 5%. In this study, 40 cubes were tested to get desirable compression strength results and engineering properties input data. Various test specimens in the form of ferrocement plate of sizes (400x200x15) mm, (500x200x20) mm, (600x200x25) mm, (800x200x30) mm and tested analytically with three-point loading with linearly varying load. Equivalent stress and deflection are the main parameters of this study. From the results, it can be concluded that 5%replacement of marble powder and increasing number of layers has proven to be good at increasing strength and reducing deflections.

45. **Keywords :** Ferrocement, Square weld mesh, Marble powder, Flexure Strength, Compressive Strength.

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46.	**Authors:**	**K Sai Vamsi, P. Pardha Saradhi, Visalakshi Annepu, Ravi Kumar C V, Kalapraveen Bagadi**
	Paper Title:	**IoT Applications for Animal Tracking and Monitoring**

Abstract: This paper is about maintaining the surveillance of the wild animals to protect tribal and vice versa. As we know, tribal people who live in the forest areas have threat from the wild animals. So we have proposed an idea in such a way that it helps in protecting the tribal people. The idea says that firstly the wild animals are caught or brought together and a device is attached to them. With the device, we can track them in the forest or in the surrounding area with the help of GPS concept. Once a device or the animal which has the device gets tracked, the information or the data such as the proximity distance is immediately sent to the web application designed for this project. Further it alarms the villagers or the tribal people and informs to the forest officers, so that they can be taken under control. There is also a camera incorporated in the device. This will constantly capture the video surveillance from the animal's point of view. If there occurs any instance of hunting (human detection) of endangered animals or any wildlife, the images of the people who get captured in the video feed are sent to the web application along with the location of the device at that particular instant of time. Human detection will be done using Haar cascade. This will help us in locating the exact area of occurrence of hunting and take extra precautions for the animals in such areas.

Keywords: Animal tracking, web application, human detection, camera, GPS, video surveillance, Haar cascad.

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47.	**Authors:**	**M.V.S Phani Narasimham, Y.V.S Sai Pragathi**
	Paper Title:	**Realtime Cost and Performance Improved Reservoir Simulator Service using ANN and Cloud Containers**

Abstract: Real time reservoir simulation is growing demand while drilling to find new energy resources. Especially during drilling when the test data differs from actual data due to fault injections. This paper proposes a methodology using modified ANN scheduler using task characteristics and optimal cloud containers. Our methodology optimizes cost and end to end delay to achieve real time reservoir simulations. Realization of the paper is done using azure cloud resources and open porous media (OPM) reservoir simulator code. ANN based scheduling of cloud containers make the simulator energy efficient and scalable. Methodology uses microservice

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based architecture which gives the advantage of real time modifications, pluggability with minimum validation costs. Patent is demonstrated on 3-phase black oil well reservoirs - Input pod, Grid pod, Solver pods, Upscale pods, Output pods, 3D PODs. ANN scheduler with Ant Colony Optimization (ACO) will classify the input tasks based on task characteristics and schedule the POD containers on the optimal virtual machines (VMs). Proposed architecture is realized using Kubernetes docker containers on Microsoft azure linux VMs.

Keywords: Oil & Well Modeling, Microsoft Azure, Kubernetes, Reservoir Simulators, dockers, Load Balancer, Cloud Simulators.

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48.

Authors: **Abhishek Agrawal, Vibha Bora, Shailesh Bhalerao**

Paper Title: **Artificial Intelligence in Enterprise Resource Planning Logistics**

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Abstract: Enterprise Resource Planning system allows the various business departments, differentiated by various places or utilities or services provided, to mobilize vital information which helps them to in an integrated single system. Suppose we consider an ERP unit that enables flawless flow of information among its continuous system of a producing process, like spare parts buyer's facility, parts storehouse owned by producer, and producing and arranging unit. ERP allows us real time information transfer among various systems so as to maintain that the producing house has the required supply of necessary parts to ensure seamless working because of inadequate supply while also overcoming the problem of oversupply of parts.
Artificial Intelligence can be used along with ERP systems. Such AI-enabled ERP systems not only provide benefit to single application only but also put a major impact which is more than the sum of individual parts. The various amounts of benefits of using AI-based ERP system, which basically comes from the majorly three features:Minimize data entryIntelligent data processingIntegrated data analytics.

Keywords: AI, ERP,

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	Authors:	**Shweta Koparde, Anuja Bhondve, Vaishali Latke**
	Paper Title:	**Explanation Generation Mechanism for Black Box Recommendation Model**

Abstract: The recommender system is everywhere, and even streaming platform they have been looking for a maze of user available information handling products and services. Unfortunately, these black box systems do not have sufficient transparency, as they provide littlie description about the their prediction. In contrast, the white box system by its nature can produce a brief description. However, their predictions are less accurate than complex black box models. Recent research has shown that explanations are an important component in bringing powerful big data predictions and machine learning techniques to a mass audience without compromising trust.This paper proposes a new approach using semantic web technology to generate an explanation for the output of a black box recommender system. The developed model is trained to make predictions accompanied by explanations that are automatically extracted from the semantic network.

Keywords: Recommender systems, Matrix factorization, Artificial intelligence, collaborative filtering, Explanation, Semantic network.

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50.	**Authors:**	**Divyanshu Tyagi, Drishti Sharma, Rishabh Singh, Kaushal Kishor**
	Paper Title:	**Real Time ‘Driver Drowsiness’ & Monitoring & Detection Techniques**

Abstract: World has seen many of the accidents occur due to driver’s fatigue and a small scale distraction factor while driving the vehicle. Number of accidents has been increasing day-by-day during driving due to driver drowsiness playing as an implicating factor in many accidents. Goal of this thesis is to reduce these accidents and maintenance of transportation safety. The system are design such that it will precisely scrutiny the

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eye blink. Dissimilarity covering the eye will differ as per eye blink. If out-turn is high the eye is closed or else out-turn is low. It shows close or open area of the eye.

Keywords: Driver drowsiness detection, transportation safety, driver's fatigue, eye blink

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51.

Authors: **Venkata Reddy. S, V. Sai Rakesh, M. Varun, S. Prakash, D. Naveen**

Paper Title: **Demand Forecasting-using Simulation for SCM Environment**

Abstract: Supply chain management (SCM) is an emerging field that has commanded attention and support from the industrial community. Forecasting activities are widely performed in different categories of supply chains for predicting important supply chain management (SCM) comparis ons such as demand volume in order management, product quality in manufacturing processes, capacity usage in production management, traffic costs in transportation management and so on. Demand forecast taking inventory into consideration is an critical issue in SCM. The demand is forecasted using SIMULATION and compared with various forecasting models. The paper describes an application of discrete event simulation for forecasting the demand for next few periods, where the previous demand pattern show a purely random variation and increasing trend with random variation. The main objective of the study was to determine the demand of the product for future periods based on past data using simulation technique and compare its efficiency with conventional techniques for the SCM environment. By simulation we can forecast the demand either with the same accuracy or with more accuracy by increasing number of iterations. Mean absolute deviation (MAD) is used as measure of accuracy of various techniques. In this paper, this technique is verified by considering a case study which deals with the demand of tyres over past three years(2002,2003,2004) and forecasting the demand in the present year(2005) and successful results are obtained.

Keywords: Supply chain management (SCM), Forecasting, Simulation, Random number, Mean Absolute Deviation.

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Authors: **Camellia Ray**

Paper Title: **Diagnosis of Autism using Machine Learning as a Healthcare Technology**

Abstract: Autism is one of the inborn disease, researchers are presently focusing on. The autistic child faces inflexibility in language, thinking and behavior together with the difficulties in understanding emotional states of others. There are lot of interventions going on to make them understand the feelings of others and vice-versa.

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Now a day, ASD became one of the quick spreading diseases all over the world. Therefore there is a huge need to provide a time-consuming and easy accessible diagnostic tool to detect autism at an early stage to help the clinicians in providing prior medications. Though there is no proper curability of autism, still easy detection helps to provide better therapy session and supports the autistic child to lead a comfort independent life. The thesis deals with the building up of a model where the parents and relatives of a suspected autistic child can easily detect if they are suffering from autism by providing their answers of some particular questions related to the characteristics of autism. In order to build that model, the data were collected manually from different autism therapy centers in India and those raw data are then classified by using three different classifiers namely Logistic Regression, Support Vector Machine and Random Forest with Python as a programming tool to find out the one with higher accuracy by various analyses after pre-processing. The Random Forest classifier with the highest accuracy is utilized in framing the question based model for the early discovery of autism which can be operated as a primary diagnostic model to assist medical professionals technologically.

Keywords: Autism, Diagnosis, Random Forest, Logistic Regression, Support Vector Machine, 10-fold cross validation.

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53.	**Authors:**	**Rishabh Chakraborty, Rohit Agarwal, Srishti Mallick, K. Saravanan**
	Paper Title:	**Diverse Resource Allocation Techniques in D2D Networks**

Abstract: D2D communication is going to be the upcoming technology which is going to change the era of wireless networks due to its flexibility. Due to the limited availability of Spectral resources, the co-channel interference is increasing. Co- channel interference occurs when number of User Equipment (UEs) share the same frequency block or commonly known as Resource Block (RB). Many researchers have ideated different Resource Allocation (RA) algorithms using modern optimisation methods like Fuzzy Logic, Game theory, Graph colouring and clustering. RA helps to provide proper channel to UEs and thus ensures proper utilisation of spectrum which is limited. With proper RA, the overall interferences can be mitigated easily and therefore it enhances the parameters such as QoS (Quality of Service), SNR, Throughput, power consumption, etc which are used to check the quality of the wireless network. In this paper review of these various RA methods, literature and deep analysis for clustering algorithm is carried out for different values of RBs and comparison Data Rates for various values of Bandwidth. A modified Spectral clustering method is propounded which will handle the number of clusters formation on the basis of requirements. The proposed RA technique is going to deal with the interferences step by step using modified Greedy algorithm and minimise the interference value until it can’t be further minimised. Data Rate is calculated using Shannon’s Theorem from the SINR values obtained.

Keywords: Clustering, Co-channel interference, D2D, Data Rate, RA, SNR and spectrum.

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54.	**Authors:**	**Suneetha Kuna, K Nandini, N V Narendra Reddy, Kadapa Harinadha Reddy**
	Paper Title:	**Simulation and Analysis of Fault Characteristics of Distributed Solar Generation**

Abstract: Inverter power supply sources (DERs) are characterized by low current loss and zero negative and null series currents. Comprehension of the fault features of DER is important for fault analysis and safe relay setup. While DER modelling work has been abundant, there have been few research studies in DER fault behaviours. This paper looks at past Dominion Energy fault events. Fault scale, angle, and sequence components are evaluated to illustrate the possible difference between real DER response and previous understandings.

Keywords: Distribution Energy Resources (DER’s), sequence components, electrical power system, protection systems, Renewable energy sources.

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55.

Authors: **K.kannan, P. Surya kumar, V.praveen kumar, V.purushothaman, D.ramanand**

Paper Title: **Vehicle to Vehicle Communication using Assisted Global Positioning System in Vehicular Ad Hoc Network**

Abstract: Vehicular Ad Hoc Network (VANET) is a type of Mobile Ad-Hoc Network or MANET which gives correspondence among vehicles and among vehicles and street side base stations. A vehicle in VANET is viewed as a savvy portable hub fit for speaking with its neighbors and different vehicles in the system. VANET is unique in relation to MANET because of high portability of hubs and the huge size of systems. Secure transmission and protection of data are the important constraint for structuring a VANET. Since there are many proposed work for improving protections in VANET, however secure transmission despite everything stays a sensitive research field. The primary destination of our work is to enhance the security concerns in vehicular networks. The fundamental endeavors were centered on the potential applications, potential assaults, secure prerequisites and the writing perusal. The long haul objective of this venture is to concoct a altogether new arrangement that can be executed in structuring a vehicular network.

Keywords: VANET, MANET, IOT, QOS, GPS and Secure Transmission

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56.

Authors: **Mallikarjun C Sarsamba, Raju Yanamshetti**

Paper Title: **Frequency Reconfigurable Compact Antenna for Multiband Wireless Communication Application**

Abstract: This pioneering work suggests a reconfigurable multiband frequency antenna for applications in wireless networking The miniaturization and multi-band function of the mounted antenna is done by inserting a rectangular hole, and the reconfiguration of the frequency is achieved by utilizing two PIN diode switches. The ON and OFF state of the PIN diode determines the surface current distribution of the radiating patch resulting in the multiband resonance and reconfiguration of the proposed device. Application and analysis dependent on parameter of the antenna such as lack of return loss, VSWR, gain, and radiation pattern. The developed antenna is used for the intended application of wireless communication. Simulation is performed using Ansys HFSS.

Keywords: MSPA, slot, PIN diodes, Wireless communication, and Reconfigurable antenna.

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57.

Authors: **L.Malathi, A.Bharathi, A.N.Jayanthi**

Paper Title: **FPGA Implementation in Robust FFT Architecture for Signal Processing Applications**

Abstract: FFT architecture is the common and very efficient design in modern signal processing applications. Though so much of architectures are executed in now-a-days applications, This paper will give different approach of FFT design. In order to reduce the computation time, FFT structure is modified in the arrangement. This analyzed approach somewhat satisfies the low power, high performance and to useful in image, signal and wireless applications.

Keywords: FFT, Scaling Factor, Multiplier, CSA, CLA, BM, AM

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Authors: **M. C. Chinnaiah, M. Akhil, M. Aishwarya, J. Manisha, B. Sai Raga Sireesha.**

Paper Title: **Autonomous Fire Detection Alarm System At Forest**

Abstract: Fire mishaps are characterized as a bothersome occasion which radiates warmth, smoke or fire. Fire mishap is a significant type of mishap and can cause countless causalities due to the peril and hazard associated

with protecting casualties out of the fire. While firefighting units participate in such circumstances there is a high chance to misfortune the life of fire personnel's. In regular day to day existence, it isn't possible to consistently depend on human watch for identifying and dousing fire at a fire mishap scene. In the event that a mechanized framework is made to watch the edge for fire mishaps, at that point we can have an early admonition framework. This will be compelling in a fire mishap in ventures and neighborhoods where the fire prospects are high. So as to accomplish this, we should think of a thought which can recognize a fire, find it and smother the fire preceding it represents a danger to anything around it. For dangerous circumstances, it is hopeful to send a firefighting robot that could rapidly and proficiently discover the fire and smother it. Compelling observing, fast acknowledgment, and stifling of fire are issues to be managed right away. To lessen the danger of losing life in such circumstances, fire mishap control framework can be utilized. The programmed framework is intended to maintain a strategic distance from further spreading of the fire that could prompt conceivable human causalities or harm to property.

Keywords: Fire accidents, Warning system, Automatic system, Accident Control, Monitoring.

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Authors: **Pramod Kumar Pandey, Sakshi Chhabra**

Paper Title: **An Observable Network Route Support on Interpretation of Cloud Computing**

Abstract: The Commercial cloud computing is appropriate conventional and funding agencies beyond prototyping, and initiated fund Production exercise. An important feature of any technical computing Program is moving production data, inward and outward. By means of the virtual machine performance and cost relatively glowing assumed, Network performance and cost is not. This article provides an authentication in the regions of Amazon Web Services, Microsoft Azure network and between Google clouds platforms, cloud both resources and major DTNs In research platform in the Pacific, including the Federation of OSG data cache Network backbone, cloud inside their own. This article contains both qualitative results of the analysis, as well as latency and throughput measuring. It also includes analysis of the cost of contribution Cloud Based on the network.

Keywords: Cloud Computing, AWS, Microsoft Azure, Computer Network, GCP

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60.

Authors: **D. Mabuni**

Paper Title: **A Novel Cosine Similarity Like Data Clustering Method for Effective Data Classification in Data Mining**

Abstract: In data mining ample techniques use distance based measures for data clustering. Improving clustering performance is the fundamental goal in cluster domain related tasks. Many techniques are available for clustering numerical data as well as categorical data. Clustering is an unsupervised learning technique and objects are grouped or clustered based on similarity among the objects. A new cluster similarity finding measure, which is cosine like cluster similarity measure (CLCSM), is proposed in this paper. The proposed cluster similarity measure is used for data classification. Extensive experiments are conducted by taking UCI machine learning datasets. The experimental results have shown that the proposed cosinelike cluster similarity measure is superior to many of the existing cluster similarity measures for data classification.

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Keywords: Clustering numerical data, clustering performance, cosine like cluster similarity, distance based measures.

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Authors: **Tarun Kumar, Sanjeev kr. Pippal, Aishwarya Mishra Allora Dudi, Vinod Chaudhary**

Paper Title: **A Video Surveillance System for Unmanned Surveillance of Cantonment Boundary**

Abstract: Since last few years, the Incidents that breach internal security and attack on the security forces are increasing day by day. These are security issues are becoming challenging to handle manually due to economical restrictions. This paper proposes an application for video surveillance to handle and monitor the intrusive incidents. The proposed application includes then human detection in no men's land around the boundary of the army cantonment. The human detection approach is proposed in this paper is developed with integration of the object detection using background subtraction, feature extraction using CNN and object classification into human and non human using SVM. The proposed approach achieves 95.6% accuracy in human detection. Application proposed in this paper is useful for unmanned surveillance of cantonment boundary.

Keywords: Object Detection, Classification, CNN, AlexNet, SVM.

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Authors: **S.S.Jadhav, S.S.Kadam**

Paper Title: **Determination of high Strength Concrete with Steel Fibre & Silica Fume**

Abstract: In this experimental studies effect on the Properties of concrete by using Silica fume and steel fibre

is investigated, the combined effect of silica fume and steel fibre to be determined. The purpose of this work is to obtain a more flexural strength of concrete produced by using both silica fume and steel fibre. Steel fibres with aspect ratio of 80 were used in the experiments. [1] Addition different percentage of steel fibre and different percentage silica fume by weight of cement content. The slump cone method is used to determine workability [2]. Compressive and Flexural strength test were made on hardened concrete specimens. Plain concrete pavements have low flexural strength and strain capacity;By using fibre structural characteristics are improved and also allows reduction of the thickness of the pavement layer. These better properties are considerable and controlled by characteristics of fibre and percentage. The major effect of fibre reinforcement is to delay and prevent from cracking of concrete. This is will reduces the thickness of pavement which is responsible for less maintenance and provides durability. Brittleness of concrete reduced by addition of steel fibre and Silica fume increases the density of concrete. Failure by using steel fibre and silica fume is ductile in nature and without steel fibre and silica fume brittle in nature [2].

Keywords: Silica fume, cement, Composite, physical properties, concrete properties.

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Authors: **Pawan Kumar Verma, Shreya Vishal, Prabhat Kumar, Abhishek Sinha, Rajat Mehrotra**

Paper Title: **A Novel Machine to Machine Based Health Monitoring Device using IoT**

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Abstract: These days, health monitoring gadgets are assuming an essential role in health services. Such frameworks are considered as the most significant developments because of its creativity and innovation. A compact gadget is used to record imperative parameters of the human body like its temperature, Heart pulsates, and beat rate, and so forth by utilizing embedded innovation. Typically, it is very hard to make sense of the irregularities occurring in the human body. Much of the time an individual surrenders because of off base or an erroneous forecast of infection. Henceforth to follow the inconsistencies occurring in the human body there should be a framework that can screen the progressions occurring in the human body most unequivocally and precisely. In this paper, a novel machine to machine based health monitoring device using IoT technology in health care services is proposed which regularly monitors the health parameters of the patient through an electronic wearable device giving results that are well precise when compared with the standard medical equipment measurements. These data can be assessed over the Internet for precise treatments.

Keywords: Health Monitoring; Medical devices; Internet of Things (IoT) in health care

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Conference on Computing, Control, Networking, Electronics and Embedded Systems Engineering (ICCNEEE). IEEE.

64.	**Authors:**	**B.Yaswanth Kumar, A.Sai Swaroop, K.Sai Charan, G.Tabitha**	
	Paper Title:	**Smart Wind Generation System**	
	Abstract: This paper proposes a wind generation system by tracking the maximum wind direction by using air sensors. This wind generation system equipped with the Permanent Magnet Synchronous Generator (PMSG) connected to the Grid. Diode Rectifier, Boost converter, Neutral Point Clamped inverter (NPC) are used as a interfacing devices between PMSG and Grid. This method has plentiful features like low and medium power wind generation applications. It is also very less in cost and high efficient due to tracking the maximum wind direction and rotating itself into that direction. **Keywords:** Boost converter, Permanent Magnet Synchronous Generator (PMSG), Diode Rectifier, Neutral Point Clamped inverter (NPC). **References:** 1. Shi Q, Wang G, Fu L, Yuan L, Huang H (2013) State-space averaging model of wind turbine with PMSG and its virtual inertia control. In: IECON 2013–39th annual conference of the IEEE, Industrial Electronics Society, pp. 1880–1886 2. Martins M, Perdana A, Ledesma P, Agneholm E, Carlson O (2007) Validation of fixed speed wind turbine dynamic models with measured data. Renew Energy 32(8):1880–1886 3. Pagola V, Peña R, Segundo J (2015) Low voltage ride-through analysis in real time of a PV-Wind hybrid system. In: 2015 IEEE international autumn meeting on power, electronics and computing (ROPEC), pp 1–6 4. Tobías A, Peña R, Morales J, Gutierrez G (2015) Modeling of a wind turbine with a permanent magnet synchronous generator for real time simulations. In: 2015 IEEE international autumn meeting on power, electronics and computing (ROPEC). 5. Power Electronics Converters for Wind Turbine Systems, F. Blaabjerg, M. Liserre and K. Ma. 6. https://www.circuitdigest.com. 7. https://en.wikipedia.org. 8. Smart Wind Generation System, researchgate.net	**364-368**
65.	**Authors:**	**Bahar Uddin Mahmud, Shib Shankar Bose, Md. Mujibur Rahman Majumder, Mohammad Shamsul Arefin, Afsana Sharmin**	
	Paper Title:	**Ecommerce Product Rating System Based on Senti-Lexicon Analysis**	
	Abstract: E-commerce is one of the popular systems for buying and selling the products. In comment section of products that they have purchased, customer express their opinion based on the quality of product, the attitude of vendor, the delivery of product etc. This information acts as a reference for the new customers, whether they have bought the product or not. To evaluate the users' comments, sentiment analysis is played important roles where this approach not only focuses on the product itself but also the features of product itself. In this work, We have calculated the score /rating of user's sentiment for Amazon products i.e. Mobile phone; by taking the comments from the review section of product which is implied by some words or phrases, are very significant and meaningful to express users' opinion. This approach performs sentiment analysis using lexicon based approach with the help of Natural Language Toolkit (NLTK) and compare the result with the Amazon's own product rating. The experimental results prove the effectiveness of the approach. **Keywords:** Product rating, E-commerce, Sentiment analysis, Lexicon, Polarity-text, NLTK. **References:** 1. Nigam, Nitika, Yadav, Divakar, " Lexicon-Based Approach to Sen- timent Analysis of Tweets Using R Language",2018, Second Interna- tional Conference, ICACDS 2018, Dehradun, India, April 20-21, 2018,Revised Selected Papers, Part I. 10.1007/978-981-13-1810-8 16 2. Bing Liu, Sentiment Analysis and Opinion Mining, Morgan & Claypool Publishers, ch.1,2012 3. Jay Baer, "42 Percent of Consumers Complaining in Social Media Expect 60 Minute Response Time", [Online], Access date: 14/06/2019 4. Mrs. Sayantani Ghosh, Mr. Sudipta Roy, and Prof. Samir K., "A tutorial review on Text Mining Algorithms", International Journal of Advanced Research in Computer and Communication Engineering, Pages: 223-233, Vol. 1, Issue 4, June 2012. 5. HuLi, Yong Shi"WordNet based lexicon model for CNL" 2009 IEEE proceeding at 2009 International Conference on Test and Measurement. 6. Christopher D. Manning, Prabhakar Raghavan, HinrichSch¨utze, "Introduction to Information Retrieval", ISBN-13 978-0-511-41405-3, 2013. 7. Mumtaz, Deebha, and Bindiya Ahuja. "Sentiment analysis of movie review data using Senti-lexicon algorithm." Applied and Theoretical Computing and Communication Technology (iCATccT), 2016 2nd In- ternational Conference on. IEEE, 2016. 8. Zarmeen Nasim, Quratulain Rajput and Sajjad Haider, "Sentiment analysis of student feedback using machine learning and lexicon based approaches", 2017, International Conference on Research and Innovation in Information Systems (ICRIIS). doi:10.1109/icriis.2017.8002475 . 9. Geetika Gautam and Divakar yadav,"Sentiment analysis of twitter data using machine learning approaches and semantic analysis", 2014, Seventh International Conference on Contemporary Computing (IC3). doi:10.1109/ic3.2014.6897213 . 10. Aruna Sathish. "Sentiment Analysis in E-Commerce and Information Security", 2017, International Journal of Innovative Research in Com- puter and Communication Engineering. 11. Nilam V. Kolekar, Prof.Gauri Rao, Sumita Dey, Madhavi Mane, Veena Jadhav And Shruti Patil, "Sentiment analysis and classification using lexicon-based approach and addressing polarity shift problem", 2016, Journal of Theoretical and Applied Information Technology 90.1. 12. S. Bird, I. S. Bird, E. Klein, E. Loper "Natural Language Processing with Python", Sebastopol:O'Reilly Media, Inc., pp. 504, 2009 . 13. Steven Bird ,"NLTK: The natural language toolkit", 2006, 21st International Conference on Computational Linguistics, Proceedings of the Conference.	**369-373**

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Authors: **C. K. Saxena, S. K. Ambast, S. K. Gupta**

Paper Title: **Laser Land Levelling for Higher Water Productivity in Rice-Wheat System**

Abstract: Awareness of water conservation has been increasing and understandings of conservation technologies have made headway in the world agriculture. Enhancement in water productivity has been the key objective of planners and the stakeholders. Many water conservation techniques or technologies help in enhancing the water productivity also prevent salt build-up and land degradation. Laser land levelling is one of the many such techniques, which has popularized to a certain extent. Yet its spread has not been significant. Realizing the potential of laser land levelling, the ICAR-Central Soil Salinity Research Institute (ICAR-CSSRI), Karnal, Haryana, India had imported a laser operated land leveller some three decades back. Few research and field evaluation studies have been made in the context of on-farm water savings as well as to judge the impact of this technology on small and marginal farmers. The present study highlights an on-farm as well as observations made in the farmers' fields, on the basis of scientific observations of information collected at the ICAR-CSSRI farm on the smoothness of the soil surface achieved, uniformity of soil moisture distribution, water requirement for irrigation, as well as saving of time yield differentials of the crops in conventionally levelled and laser levelled fields. A total of 19 farmers' fields were studied in Pundrak, Zarifa and Kalayat villages in Haryana besides two controlled studies at ICAR-CSSRI farm, Karnal. The values of Levelling Index (LI) for before and after conventional levelling have been evaluated as 3.0 cm and 2.1 cm respectively, whereas in the laser levelled fields, these were 1.93 cm and 0.85 cm respectively. The application time for irrigation in laser levelled fields has reduced to 3.5-4.5 hours from about 6 hours required in conventionally levelled fields for 0.4 ha (1 Acre). The average values of water productivity in conventional and laser-levelled fields have been evaluated at 1.5 and 2.4 kg/m3, respectively for wheat and 0.4 and 0.5 kg/m3 respectively for rice. For the fields having LI of 0.75 cm, the application efficiency has been as high as 90% in comparison to 45% for the field having LI of 6.75 cm. The estimated net profit ranged Rs. 1000 – 1200 for the first year, which rose to Rs. 4000 – 5000 in the second year onwards, during the study for the laser levelled fields. Besides the technical appraisal, the paper highlights the limitations such as necessity of repeat application of laser land levelling once in three years. Fortunately more than 500 custom hiring units have already appeared in the North Indian states due to sensitization through trainings and demonstrations of this technology.

Keywords: Coefficient of land uniformity, laser land levelling,levelling index, Rice-Wheat System, and Water Productivity.

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	Authors:	**Alina K Jayarajan, Eldo P Elias**
	Paper Title:	**Access Control Based on Different User Privileges in Social Media**

Abstract: The emergence of social media lead to people around the world is widely using it. There are varieties of applications under this category for diverse purposes. Day by day, the security concerns related to this area is increasing since it is a medium which connect people. At present, the single access policy is present. That is whether a user can access the media content or not. Hence multi access policy can provide more user satisfaction. On the other hand video and image can be encoded into different qualities. Ciphertext Policy Attribute-Based Encryption is used for encrypting keys used in symmetric encryption. Here introducing Linear Secret Sharing Scheme (LSSS) to the scalable social media stream security. The LSSS mechanism is adopted to increase the expressiveness of the monotone access structure. By utilizing an LSS Scheme the access structure becomes more protective. This algorithm is very useful in practice as a ciphertext policy can now be intuitively expressed using a monotone Boolean formula, which has good usability, and the corresponding LSSS for an actual CP-ABE construction can then be generated accordingly using this algorithm.

Keywords: CP-ABE, LSSS, Media layers, Access structure.

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68.	**Authors:**	**Rahul Nandgave, Amar Buchade**
	Paper Title:	**Predicting Reliability of Storage Systems**

Abstract: Large Organizations have to make use of various storage devices like HDD and SDD to provide storage of information of their clients as well as themselves. These Storage devices are present in large numbers and are the basic building blocks that are used to store information and in case of failure occurs then replacing these devices can halt some services which can cause loss to the Organization in terms of money and time as well. To remediate this we can monitor each of the storage devices, as these storage devices come with a SMART (Self Monitoring and Reporting Technology) system that monitors and reports the stats back to the user. Thus with the help of these SMART Parameters we can train a machine learning model to predict if the hard disk will experience failure in the near future or not. In this study we did a survey of various techniques are based on various machine learning models and provide a brief overview of each of the techniques. Among these techniques we find that random forest and deep learning methods provide better results than the other methods discussed in various studies.

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Keywords: Failure Detection, Machine Learning, Storage Devices, SMART Parameter..

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69.

Authors: **Hicham Hassnaoui, Aisha Sahel, Abdelmajid Badri**

Paper Title: **New Parallel Technics for GPU, Fast SURF Algorithm**

Abstract: Computer vision algorithms, especially real-time tasks, require intensive computation and reduced time. That's why many algorithms are developed for interest point detection and description. For instance, SURF (Speeded Up Robust Feature) is extensively adopted in tracking or detecting forms and objects. SURF algorithm remains complex and massive in term of computation. So, it's a challenge for real time usage on CPU. In this paper we propose a fast SURF parallel computation algorithm designed for Graphics-Processing-Unit (GPU). We describe different states of the algorithm in detail, using several optimizations. Our method can improve significantly the original application by reducing the computation time. Thus, it presents a good performance for real-time processing.

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Keywords: Computer vision, GPU, parallel computation, SURF, Tracking.

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pp. 404–417

70.	**Authors:**	**M. Bhavani, Sherine Glory, V. Pavithra, R. Monesh**	
	Paper Title:	**Prognosis of Cancer and Proposition of Therapeutics**	
	Abstract: Cancer is becoming one of the common diseases in day today life, identifying it in a prior stage is still difficult. Identification of environmental and genetic factors is necessary to predict the cancer. We developed a cancer prediction system to predict lung and oral cancer based on the symptoms. The gathered data is pre-processed and the data mining algorithm such as decision tree, logistic regression, Random Forest and Support Vector machines are used to measure the performance. The attribute selection algorithms are used to obtain the mandatory attributes. The main aim of this system is to predict the type of cancer and the suggested therapy using random forest algorithm. **Keywords:** Cancer, Data Mining, logistic regression, Decision Tree, Random Forest, Support Vector. **References:** 1. P.Ramachandran, N.Girija and T.Bhuvaneswari, " Early Detection and Prevention of Cancer using Data Mining Techniques", International Journal of Computer Applications, Volume 97– No.13, July 2014. 2. K.Arutselvan and Dr.R.Periyasamy, "Cancer Prediction Systems using datamining Techniques", International Research Journal of Engineering and Technology(IRJET) Volume: 02 Issue: 08 | Nov2015. 3. Dr. Nidhi Mishra and Deepika Verma, "Analysis and prediction of breast cancer and Diabetics disease datasets using data mining classification Techniques", proceedings of the international conference on intelligent sustainable systems(ICISS) 2017. 4. Irina Ionita and Liviu Ionita, "Prediction of thyroid disease using data mining techniques", BRAIN. Broad research in artificial intelligence and neuroscience, August 2016. 5. Dr. N. Subhash Chandra, DR. G. Narsimha and V.Krishnaiah, "Diagnosis of lung cancer prediction system using data mining classification techniques", International journal of computer science and information technologies(2013). 6. Sweta Kharya, "Using data mining techniques for diagnosis and prognosis of cancer disease", International journal of computer science engineering and information technology(IJCSEIT), April(2012). 7. Santosh Kumar Singh and Neelam Singh, "Early detection of cancer using data mining", International journal of applied mathematical sciences volume 9(2016). 8. Prof. M.S. Prasad Babu and N.V.Ramana Murty, "A Critical study of classification algorithms for lung cancer disease detection and diagnosis", International journal of computational intelligence research(2017). 9. Dr.Prabasheela, S.Muthuselvan and Dr.K.Somasundaram, "Prediction of breast cancer using classification rule mining techniques in blood test datasets", International conference on information communication and embedded system(ICICES) 2016. 10. Shilpi Shandilya and Chaitali Chandankhede, "Survey on recent cancer classification systems for cancer diagnosis", IEEE WiSPNET 2017 Conference. 11. B.Padmapriya and T.Velmurugan, "Classification algorithm based analysis of breast cancer data", International journal of data mining techniques and applications June(2016). 12. Ankita Tyagi, Ritika Mehra and Aditya saxena, "Interactive thyroid disease prediction system using machine learning technique", Fifth IEEE International conference on parallel, Distributed and Grid computing, Dec(2018). 13. S M Halawani "A study of digital mammograms by using clustering algorithms", Journal of scientific and industrial research, Sep(2012). 14. Ibrahim, Mehmet and Hulya, "A new multi-static system for microwave breast cancer imaging: Preliminary design",IEEE 2018. 15. Zakaria Suliman zubi "Improves treatment programs of lung cancer using data mining techniques", Journal of software engineering and applications, February 2014. 16. Rajit Nair and Amit Bhagat, "Feature Selection Method To Improve The Accuracy of Classification Algorithm", International Journal of Innovative Technology and Exploring Engineering (IJITEE) April (2019).	**394-397**
71.	**Authors:**	**S.E.Viswapriya, Durbaka Sai Sandeep Sharma, Gandavarapu Sathya kiran**	
	Paper Title:	**Vehicle Price Prediction using SVM Techniques**	
	Abstract: The prediction of price for a vehicle has been more popular in research area, and it needs predominant effort and information about the experts of this particular field. The number of different attributes is measured and also it has been considerable to predict the result in more reliable and accurate. To find the price of used vehicles a well defined model has been developed with the help of three machine learning techniques such as Artificial Neural Network, Support Vector Machine and Random Forest. These techniques were used not on the individual items but for the whole group of data items. This data group has been taken from some web portal and that same has been used for the prediction. The data must be collected using web scraper that was written in PHP programming language. Distinct machine learning algorithms of varying performances had been compared to get the best result of the given data set. The final prediction model was integrated into Java application. **Keywords:** Artificial neural network, Support vector machine, Random forest. **References:** 1. Kanwal Noor, 2017, Vehicle Price Prediction System using Machine Learning Techniques International Journal of Computer Applications. Volume 167 - Number 9 2. Mariana Listiani et al, (2009). Support vector regression analysis for price prediction in a vehicle leasing application , 3. Richardson, M. S. (2009). Determinants of used vehicle resale value. 4. Wu, et al, (2009). An expert system of price forecasting for used vehicles using adaptive neuro-fuzzy inference. 5. Du et al, (2009). Practice Prize Paper—PIN Optimal Distribution of Auction Vehicles System: Applying Price Forecasting, Elasticity Estimation, and Genetic Algorithms to Used-Vehicle Distribution. 6. Sameerchand Pudaruth, 2014, Predicting the Price of Used Cars using Machine Learning Techniques 7. Pattabiraman Venkatasubbu et al, Used Cars Price Prediction using 8. N Monburinon, 2018,prediction of price for used cars by using regression models	**398-401**

9. Car sales prediction using machine learning algorithms, 2019, International Journal of Innovative Technology and Exploring Engineering

	Authors:	**J. X. Djumanov, H.N. Zaynidinov, D. E. Eshmurodov, X. S. Egamberdiev**
	Paper Title:	**Mathematical Modeling of the Processes Formations of Stocks in Low Water Period (on the example of the Kitab-Shahrisabz aquifer)**

Abstract: In this study, we consider mathematical modeling of the dynamic state of groundwater aquifers, i.e., the process of groundwater formation in dry years under intensive (forced) groundwater intake withdrawal, i.e. operational selection exceeds the value of groundwater resources and depletion of capacitive reserves occurs) on the example of the Kitabo-Shakhrisabz groundwater deposits, of the Kashkadarya area of the Republic of Uzbekistan, which has a long period of regime observations and comparatively correct information on the groundwater level regime, groundwater intake withdrawal and interconnections within surface runoff. The data of hydrogeological area obtained as a result of analysis and schematization of hydrogeological conditions are generalized, and the hydrogeological parameters of the aquifer are calculated. The hydrogeological factors of groundwater formation are given and evaluated taking into account changes in water intake conditions, their current state is highlighted, and recommendations are given for substantiating the tasks of groundwater automations of monitoring in these territories.

Keywords: Mathematical modeling, boundary conditions, groundwater formation, geofiltration process, groundwater intake, automations of monitoring water resource.

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73.	**Authors:**	**Pratibha Kantanavar**
	Paper Title:	**A Novel Optimal Routing Protocol for Wireless Ad hoc Network with the aid of Double Encryption Mechanism**

Abstract: Ad hoc network paved way to various researches and application due to its wide acceptance over wired network. The advance has also led to various drawbacks or problems that can result in unauthorized usage of data or in data loss. So secured data transfer has become an important requirement in any Ad hoc network. Various issues exist in Ad hoc network while data transmission and hence it has become a major requirement to develop an efficient routing protocol that can transmit the data securely over the network. So, this paper provides a solution, intend to develop an approach for making the data transmission more secured and feasible. This paper incorporates double encryption scheme to secure the data where we use Hybrid DNA based cryptosystem and blow fish algorithm for authentication of users. Also, we design an efficient optimal routing protocol that makes the transmission secured by reducing various attacks that occur in the network. It provides the security for image transmission over internet effectively. This technique also can be extended in multimedia security over the internet. The network parameters will be approximately judged in order to demonstrate the performance of the scheme we develop.

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Keywords: Geo-Location Oriented Routing (GLOR), Secure-GLOR

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74.

Authors: **K. Abirami, S. Lavanya, M. Rashmi, V. Roshan**

Paper Title: **An Intelligent Guiding System for Trekkers using WUSN**

Abstract: To design and develop an automated surveillance system to detect and intimate the presence of animals, monitoring the health parameters of the trekkers and to detect fire in the dense forest. Using sensors and wireless technology that communicate to the base station using wireless communication. In this project the image processing technique is explored for the detection of animals so that any change in pattern then the trekkers and base station are alerted. For the communication process, a wireless underground sensor network is employed which has a lot of interlinked nodes. This is because internet usage is not effective in the dense and reserved forest area. Node to node communication is performed for efficient information sharing with the base station and the communication process for trekkers is carried on with wireless sensor networks thus provides warning information to the trekkers. Animal detection based applications have a very important role in many real-life situations and also detection of forest fire in dense forest is hard and fast-spreading. Therefore there must be automation and faster means of communication.

Keywords: Arduino, Microcontroller, Sensors, Wireless Sensor Network, Wireless Underground Sensor Network.

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Authors: **Z.R. Kadyrova, A.P.Purkhanatdinov, Sh.M. Niyazova**

Paper Title: **Karakalpakstan Bentonite Clays - Perspective Raw Materials for Obtaining Ceramic Heat-Insulating Materials**

Abstract: The article presents the results of a comprehensive study of bentonite clays of the North Jamansay deposit of Karakalpakstan for the production of ceramic heat-insulating materials. The possibility of using this bentonite clay as a result of studying their chemical and mineralogical, fractional compositions and physico-chemical characteristics for ceramic heat-insulating materials for various purposes has been established.

417-420

Keywords: heat-insulating, ceramics, raw materials, bentonite, clay, composition, chemical, X-ray phase, mineralogical, physico-chemical characteristics, swelling.

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Authors: **T.LathaMaheswari, S.Anumitha, R.Ajeetha**

Paper Title: **Classification of Arrhythmia Conditions using Neural Networks**

Abstract: In this paper, we are discussing about a heart disease called Arrhythmia and how it can be identified using the Electrocardiogram. Electrocardiogram (ECG) is a graphical form for electrical activity of cardiac muscle. A healthy human heart beats, 72 times per minute under normal conditions. For every heartbeat the cardiac muscle undergoes specific electrical activity which identifies the pattern in the ECG signal. It consists of PQRST wave which represents heart functions. The patterns of the ECG signal change due to the abnormalities in the heartbeat. The abnormality in the ECG is called Arrhythmia.

Keywords:

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77.

Authors: **Suvain Goyal, Vaibhav Somani, S.Sharanya**

Paper Title: **Reinforcement Learning using Convolutional Neural Network for Game Prediction**

Abstract: The paper presents a Deep learning model for playing computer games with elevated level information utilizing Reinforcement learning learning. The games are activity restricted (like snakes, catcher, air-bandit and so on.). The implementation is progressive in three parts. The first part deals with a simple neural network, the second one with Deep Q network and further to increase the accuracy and speed of the algorithm, the third part consists of a model consisting of convolution neural network for image processing and giving outputs from the fully connected layers so as to estimate the probability of an action being taken based on information extracted from inputs where we apply Q-learning to determine the best possible move. The results are further analysed and compared to provide an overview of the improvements in each methods.

Keywords: Deep Q Network, Convolutional Neural Networks , Q-Learning

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Authors: **M.Anugraha, S.H.Krishnaveni**

Paper Title: **An Outline on Issues in Efficient Trust Supervision in Mobile Ad Hoc Networks**

Abstract: Mobile Ad hoc Network is an assortment of free hubs that can convey one another. These hubs are self-composed hub, which doesn't have any fixed framework like base station, radio wires, and so forth. The hubs with in its range can have an immediate correspondence if not it utilizes a moderate hub for transmitting the information. Each node will act as both host and router. The nodes can join or leave the network anytime and makes the network topology. Network topology is dynamic in nature. Because of the dynamic behavior the

detection of trust value is difficult for intermediary node. Trust should be managed in the network ie., the network has different behaviors like malicious, selfishness, unhealthiness, etc., due to these behaviors the trust of an intermediary node is difficult to calculate. Right now safe routing is performed by the improvement of convention which yields the minimization of trust inclination and boosts the application execution. This study compares different trust management framework and compare the trust level based on the metrics and outlines the issues and future ideas.

Keywords: Mobile Ad hoc Network, Dynamic topology, Intermediate nodes.

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Authors: **Gowtham Mamidisetti, Ankitha A.K., Deepa Sarker, D. Siva Naga Sheshi Reddy, C.H. Prudhvi Raj**

Paper Title: **Secure Outstation Cab Service**

Abstract: The intent of this thesis was to develop an application that would make booking easier for outstation commutes with guaranteed security. Secure Outstation cab service is an automated prototype which depicts the actual working of an organization that deals with the transport domain. It is a web based platform that allows customers to book their cabs from their comfort of their own home or office. The proposed Secure Outstation Cab Service ensures that the customers can book the cab as per their requirements by logging on to the website. The main aim of Secure Outstation Cab Service is that the users are provided with security, unlike the other cab service systems. On the other hand, we have also developed a mobile based application which is mainly meant for support system that is whenever a ticket is raised, the support staff would handle the queries related to booking, commute, food availability, company, etc. by the users. The prototype which we have developed clearly shows how the software acts as a SaaS model in delivering business models with the customers. The paper focuses on the objective of the application, its problem statement, our analysis on the research work done, proposed work and methodology followed by the workflow, conclusions and future work.

Keywords: Security code, location triggering, android, firebase, real time database, ticket generation, Google map API, support system.

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80.

Authors: **R. Derick, S. Revathi**

Paper Title: **Ultra High Sensitive Disc Core PCF Chemical Sensor**

Abstract: In this article, a PCF sensor is designed and computed to detect chemicals in the refractive indices range of 1.52-1.56. In this proposed design, three and four concentric discs fabricated in the core which provides ultrahigh sensitivity and circular porous cladding pattern confines large fraction of power in core region. This novel proposed design demonstrates ultrahigh relative sensitivity 86.35% and 85.02% for four and three disc models. These sensing discs are filled with different sensing fluid. This proposed PCF design overcomes some experimental challenge such as PCF probe needs some displacement after filling the sensing liquid. These uniform circular sensing discs around the solid core supports better evanescent field matter interaction for sensing application.

Keywords:—Lattice, Spiral, Circular Photonic Crystal Fiber (C-PCF), and Optical waveguide.

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Authors: **Mamdouh Alenezi, Mohammed Akour**

Paper Title: **Exploring the Connection between Design Smells and Security Vulnerabilities**

Abstract: Software quality aims at having quality as part of all aspects of the developed software. Design smells are considered enemies of the software source code quality. There are verities of design problems with different terminologies. Researchers and practitioners accept it as true that whenever there is a design smell, there is a security issue or concern. In this work, we want to explore the connection between design smells and security vulnerabilities. This work provides experimental evidence about this connection. We conducted an empirical study to explore the connection between design smells and security issues by evaluating four C# open-source systems. We found interesting results that show classes with design smells have more chances of having security issues.

Keywords: Design Smell, Empirical Study, Software Evolution.

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Authors:

Paper Title:

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83.

Authors: **Baimuhamedov M.F., Zhikeyev A.A., Bulaev A.G., Tastemirova Zh.A., Kurmangalieva A.K., Bugubaeva A.U.**

Paper Title: **Software Analytical Method for Protecting Digital Information**

Abstract: Known to date means of information protection does not have a high degree of noise immunity and reliability. This work is related to the development of a more effective way to protect the source information using a software-analytical method based on the Vigenère cipher. The best known and most widely used methods of symmetric encryption are DES and the Vigenère cipher. The Vigenère cipher is a polyalphabetic encryption method for alphabetic text by using key words. The Vigenère cipher requires a single key asked a set b of letters. These sets are signed with the repetition of the message, and then the generated sequence is added back to the plaintext on modul (the power of the alphabet). To achieve this goal we propose to use multiple iteration in which the corresponding algorithms of encryption and decryption consist of successive cycles of the same type of encryption. The developed mathematical model for block coding, as well as methods and algorithms for their decoding. Presented in a modified Vigenère algorithm with the use of a block cipher based on variation of number of iteration with shift key, allows, in contrast to the known algorithms that more reliably protect the data on the Web server.

Keywords: information security, algorithms, encryption, decryption, block coding, Vigenère cipher.

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Authors: **Nikunj Navinbhai Patel, Ananya Kapoor, Om Hemantkumar Purohit**

Paper Title: **Resistive Force Calculation and Battery Pack Configuration using Simulink Model**

Abstract: This paper provides a step by step guide for calculation of powertrain unit including the configuration of battery pack of a two-wheeler electric vehicle. Based on the design and desired performance of the vehicle, the total resistance force, torque and power is calculated and designed in MATLAB and Simulink, which is essential for selection of electric motor. Knowing the voltage and capacity of an individual cell the configuration of battery pack is calculated and depicted in SOLIDWORKS Computer Aided Design model. A website is developed which is competent to perform the necessary calculations and display the output of the desired performance parameters.

Keywords: Electric vehicle, MATLAB and Simulink, Torque, Computer Aided Design

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Authors: **Sakthivel R, Suburaaj R**

Paper Title: **Fpga Implementation of Precise Convolutional Neural Network for Extreme Learning Machine**

Abstract: Feed-forward neural networks can be trained based on a gradient-descent based backpropagation algorithm. But, these algorithms require more computation time. Extreme Learning Machines (ELM's) are time-efficient, and they are less complicated than the conventional gradient-based algorithm. In previous years, an SRAM based convolutional neural network using a receptive – field Approach was proposed. This neural network was used as an encoder for the ELM algorithm and was implemented on FPGA. But, this neural network used an inaccurate 3-stage pipelined parallel adder. Hence, this neural network generates imprecise stimuli to the hidden layer neurons. This paper presents an implementation of precise convolutional neural network for encoding in the ELM algorithm based on the receptive - field approach at the hardware level. In the third stage of the pipelined parallel adder, instead of approximating the output by using one 2-input 15-bit adder, one 4-input 14-bit adder is used. Also, an additional weighted pixel array block is used. This weighted pixel array improves the accuracy of generating 128 weighted pixels. This neural network was simulated using ModelSim-Altera 10.1d and synthesized using Quartus II 13.0 sp1. This neural network is implemented on Cyclone V FPGA and used for pattern recognition applications. Although this design consumes slightly more hardware resources, this design is more accurate compared to previously existing encoders.

Keywords: Convolutional Neural Network (CNN), Extreme Learning Machine (ELM), Field Programmable Gate Array (FPGA), Neuromorphic Computing, Pattern Recognition, Receptive-Field (RF), Very-Large Scale Integration (VLSI)

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86.

Authors: **M. Parthasarathy, R. Sakthivel**

Paper Title: **Analog based Neuromorphic Systems on Low Power Current Mode Circuits**

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Abstract: Neuromorphic computing is the process used to appliance the neural system models. Formerly, it is referred to as the biological process and later it turned out to be the computing algorithms. Many neuromorphic algorithms represented as the neural figures such as neural spikes, fluctuated graphs, and synapses. The biological nervous system for instance consists of huge number of neurons and they collectively work to encode the stimulus of various senses. In case of neuromorphic computing, automated brain brings in the concept of efficient work carried out through artificial means. The neuromorphic computing thus evolves as a major technological advancement and the need of such technique is the need of the hour in various scientific as well as field applications. In existing techniques, the scaling, power and area are not efficient. This study attempts to address the major issues such as scaling and power. This paper explains the design on a non-spiking network which is used for population coding architecture. The model which is discussed in this paper is based on the analog domain and the current mode circuits are also involved. The input neuron model consists of current direction selector block, current scale block and minimum current block which all comprise to form the neuron model. This paper also brings out the possible outcome of low power constraints. This paper involves 180nm technology with which the power is measured. This paper brings out the simulations of both 180 and 90nm technologies. Apart from current scale block, minimum current block and current direction selector block, there are other blocks such as current splitter block and current mode low pass filter block, where all the circuits work under the sub-threshold condition. The power consumption obtained in the 180 nm technology is 58.838 μW and its energy equivalent is 1.765pJ. Neuromorphic computing is used as an application where the machines are being automated and such machines come with self-thinking capability. Neuromorphic computing design which is evolved from this paper is found to be more power ad energy efficient. The tool used is Cadence Virtuoso.

Keywords: Artificial Neural Network, Echo State Network, Spiking Neural Network, Trainable Analog Block.

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Authors:	**S. N. V. Nishanth, S. Suryadev, Ch. Charan Teja Reddy, S. Kalaivani**
Paper Title:	**Phase Recognition of Lung Cancer via Steerable Riesz Wavelets with Rf Algorithm**

Abstract: Lung cancer is one of the diseases which has a high mortality. If the condition is detected earlier, then it is easier to reduce the mortality rate. This lung cancer has caused more deaths in the world than any other cancer. The main objective is to predict lung cancer using a machine learning algorithm. Several computer-aided systems have been designed to reduce the mortality rate due to lung cancer. Machine learning is a promising tool to predict lung cancer in its early phase or stage, where the features of images are trained using a classification model. Generally, machine learning is used to have a good prediction, but in some models, due to lack of efficient feature extraction value, the training has not been done more effectively; hence the predictions are poor. In order to overcome this limitation, the proposed covariant texture model utilizing the steerable Riesz wavelets feature extraction technique to increase the effectiveness of training via the Random Forest algorithm. In this proposed model, the RF algorithm is employed to predict whether the nodule in the image is benign or malignant ii) to find the level of severity (1 to 5), if it is a malignant nodule. Our experiment result can be used as a tool to support the diagnosis and to analyze at an earlier stage of cancer to cure it.

Keywords: Benign nodule, Malignant nodule, Random Forest, Random Walker, Steerable Riesz wavelets.

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88.

Authors:	**Keshav Kumar Jha, B.S. Pabla**
Paper Title:	**A Real Time Engine Oil Monitoring System for Diagnosis of Lubricant using IoT Network**

Abstract: In the modern days, Internet of Things (IoT) is smart communicating approach and creates an energetic impression in future of automobile industry. The advancement of IoT innovation in each field can be joined with the rising occasions setting off a requirement for a superior human way of life and its applications are vast and innumerable. One such application can be implied for the automobile industry to real time monitor the engine lubricant because in India, automobile mechanics still use conventional techniques of engine lubricant supervision. So in this paper, we present, an IoT technology based a real time Engine Oil Monitoring (EOM) System for diagnosis of engine lubricant. The main objective of this research paper is to reduce the human effort and to provide a smart sensing approach in automobile industry for maintaining real time engine oil conditions. EOM system is designed with the help of Arduino Nano with sensor devices named as Light Dependent Resistor (LDR) sensor for oil quality, LM35-Temperature sensor for temperature and Ultrasonic Sensor for oil level measurement in engine. Real time testing results shown in the connected display unit and experimental results of proposed EOM system using IoT network provides an efficient diagnosis results. EOM system is working properly that is observed in the experimental analysis section for two different scenario such as 10W-50 4T Scooter Engine Oil-Honda Activa 125 (1L) and 10W-30 Synthetic Engine Oil for Petrol Cars (3.5 L).

Keywords: EOM System, Sensors, LED Display, Ultrasonic Sensor, LDR, Engine Oil, IoT Network.

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89. **Authors:** **D. Mabuni**

Paper Title: **A Novel Impurity Measuring Technique for Decision Tree Learning in Machine Learning**

Abstract: Decision tree classification is one of the most powerful data classification techniques in machine learning, data mining, big data analytics and split functionality is a crucial and inherently associated integral part of the decision tree learning. Many split similarity measures are proposed to determine the best split attribute and then partitioning the node data in decision tree learning accordingly. A new impurity measuring based split technique called (IMDT) for decision tree learning is proposed in this paper and it is used in obtaining experimental results. Many UCI machine learning dataset are employed in experimentation. The algorithm C4.5 is the most using data classification algorithm. The results obtained with the proposed approach are outperformed than the many existing decision tree classification algorithms in particular C4.5 decision tree algorithm.

Keywords: Big data analytics, impurity measure, machine learning, split functionality and split attribute.

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Authors: **Khushbu, R.K Bathla**

Paper Title: **Se-Eaodv to Detect and Prevent Black Hole Attack in Manets**

Abstract: The security of the data which is transferred from source to destination is of prime importance in the mobile ad hoc network (MANET) or any kind of network to be very precise. If the data gets lost then the entire purpose of deploying and creating the network fails. Mobile ad hoc networks suffer from various attacks out of which black hole attack is considered the most dangerous one because in this attack the venomous node release all the packets received by it. The authors in EAODV has used the concept of fake route request packets to identify the black hole nodes in the grid. The proposed technique detects the malicious black hole node using the sequence numbers. The performance of the network has been examined based on end to end delay, packet delivery ratio, detection time, throughput and remaining energy. These parameters have shown improvement over the existing scheme.

Keywords: MANETs, Black hole attack, Sequence number, EAODV, RREQ, PDR

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Authors: **N Kannan, SK Lishanth, S Sajid Hussain, Ashutosh Gauda**

Paper Title: **Analysis on fog Network for Small Cell Network using Neuro Fuzzy**

Abstract: In this manuscript we are establishing a new, remote backhaul system for small cell systems based on a powerful joint effort of Main Stations (MSs) that we call Fog-Radio Access Network (F-RAN) backhaul technology. By using fog, our proposed technique gives MSs the possibility to organize and methodology the signs obtained in various ways that can effectively extend the transmission limit of the backhaul network. We first model an F-RAN initiated and three backhauling procedures, explicitly Direct, DF, and Cloud-RAN (C-RAN), to be enforced. At this point we evaluate and think about the achievement of these methodologies. Numerical findings show that our proposed technique provides cell borders with the highest throughput to customers in most different territories and retains a comparable display. F-RAN thus performs better for minimized small cell systems with low backhaul channels than any other strategy.

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Keywords: backhaul techniques, fog computing, neuro fuzzy, small cell networks, F-RAN, Dynamic MSs.

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Authors: **Devireddy Sathish, Gajangi Arun Kumar, Chowdary Vinay Kumar**

Paper Title: **Instantaneous Symmetrical Component Theory (ISCT) Controller for Mitigation of Harmonics in Micro-grid System**

Abstract: Now a days, the usage of non-linear loads are increased rapidly which increased the power quality (PQ) problems in electric power system like voltage sag and swell, harmonics, etc., in the mentioned problems, one of the major significant PQ problem is the harmonics. This paper proposes the power quality improvement by using Shunt Active Power Filter (SAPF) in AC Electric supply System feeding 3-phase balanced non-linear load. For reduction of harmonics in the system, the Instantaneous Symmetrical Component Theory (ISCT) based controller along with the other controllers named PI controller and Hysteresis current controller are which helps in the micro-grid system. In this, hysteresis current control compares the difference of compensating current, load current with filter current of DSTATCOM. In the proposed method, DSTATCOM has shown good performance in the system to eliminate harmonic component. The system performance is simulated in the MATLAB environment and it is evaluated by calculating the source current Total Harmonic Distortion(THD).

Keywords: ISCT; DSTATCOM; PI Controller; Hysteresis Control; Total Harmonic Distortion (THD)

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93.

Authors:	**Roopali Gupta, ToranVerma**
Paper Title:	**Tomato Leaf Disease Detection using Back Propagation Neural Network**

Abstract: Most of the Indian economy rely on agriculture, so identifying any diseases crop in early stages is very crucial as these diseases in plants causes a large drop in the production and economy of the farmers and therefore, degradation of the crop which emphasize on the early detection of the plant disease. These days, detection of plant diseases has become a hot topic in the area of interest of the researchers. Farmers followed a traditional approach for identifying and detecting diseases in plants with naked eyes, which didn’t help much as the disease may have caused much damage to the plant. Tomato crop shares a huge portion of Indian cuisine and can be prone to various Air-Bourne and Soil-Bourne diseases. In this paper, we tried to automate the Tomato Plant Leaf disease detection by studying the various features of diseased and healthy leaves. The technique used is pattern recognition using Back-Propagation Neural network and comparing the results of this neural network on different features set. Several steps included are image acquisition, image pre-processing, features extraction, subset creation and BPNN classification.

Keywords: Feature Extraction; Image Processing; Tomato Disease Detection; GLCM; BPNN.

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94.	**Authors:**	**Shubha Jain, Shail Dubey, Vaibhav Mishra, Durgesh Kumar Mishra**	
	Paper Title:	**Automated Attendance Monitoring System using Face Detection and RFID Cards**	
	Abstract: The attendance serves the most important role in the academic life of any student. Most of the colleges follow the traditional approach of attendance in which the professor speaks out student's name and record attendance. For each lecture, this repetition of attendance calling is actually wastage of time and a time-taken procedure for calculating attendance of each student. Here an automatic process is proposed which is based on image processing with radio-frequency identification to avoid the losses. In this project approach, there is a use of face detection & RFID cards. Firstly, use the pre-processing step for the face detection and RFID receiver for the RFID cards counting and the second step is to detect, recognize and then the face is matched with stored images in the database. In this paper, viola-Jones algorithm is used for face detection, in which first step of integral image is used for feature computation and Adaboost algorithm is used for feature selection in second step. Then for discarding the non-faces, cascade classifiers is used in the third step of algorithm. The working of this project is to detect and recognize the face and RFID cards then mark the attendance for the corresponding face in the database on matching the face and unique number to the stored dataset. Face detection and RFID cards will be used as input and the attendance will be marked as output. This project is being conferred as a clarification for the "Automated attendance monitoring system." Here a system of automatic face detection and recognition is proposed to mark the attendance automatically in database. This will save the time of person who is using traditional pen & paper based approach for attendance and hence is a solution for the automated attendance monitoring system. RFID cards are very helpful here for tracking or monitoring the student/teacher/employees within the campus. This system can be used in schools, colleges for students as well as for teachers also and it can be also used in companies, hospitals and malls for maintain records of accurate attendance of their employees. **Keywords:** Automatic attendance monitoring system, radio frequency identification cards, face detection and face recognition, viola-Jones algorithm, Haar-features, PCA, LBP. **References:** 1. Kalachugari Rohini, Sivaskandha Sanagala, Ravella Venkata Rathnam, Ch.Rajakishore Babu" Face Recognition Based Attendance System For CMR College of Engineering and Technology, Vol.8 Issue-4S2, Issn-2278-3075,March ,2019.
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95.	**Authors:**	**S. Santhosh Kumar, S. Revathi**	
	Paper Title:	**Photonic Crystal Fiber for Sensing Food Additives**	
	Abstract: Photonic Crystal Fiber (PCF) have recently found extensive use in sensor applications. The design of PCFs is crucial for optimal sensing performance. In this work, an index guided Hollow Core Photonic Crystal Fiber (HC-PCF) with hexagonal shaped cladding is proposed for sensing harmful food additives. Using COMSOL software we performed extensive simulations and have shown that our proposed PCF design achieves	**545-551**

a very high sensitivity > 90% for typical food additives like Saccharin, Sorbitol, and Butyl Acetate. We have also compared our proposed design and shown that it significantly outperforms the current PCF designs. The presence of hexagonal airholes in the entire cladding layer of the proposed PCF design enhances sensitivity in comparison to the previous designs. Also, the increase in size of the circular core supports the increased sensitivity.

Keywords: Hollow core photonic crystal fiber, PCF, Relative sensitivity, Food additives.

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96.

Authors: **Ayani Tasaduq, Mohd. Irshad Malik, Amanpreet Tangri**

Paper Title: **Influence of fly ash, lime Sludge and Polypropylene fibre on Compaction and Strength Properties of Subgrade**

Abstract: The development of population, quick urbanization and more development of structures and buildings has brought about the decrease of good quality land. To improve the accessibility of good quality land, strength and compaction properties of land should be improved. The fundamental goal of this examination is to explore the utilization of fly ash, lime sludge and polypropylene fiber in Geotech highway application and to assess their impact on quality and compaction of soil, utilized for subgrade. The soil samples were gathered from the zones of Chandigarh where clayey soil is present in abundance. The laboratory testing led to decide the strength and compactive effort of the clay soil. This investigation includes three principle tests. The primary test is standard proctor test. The subsequent test is California bearing ratio and the third test is the direct shear test. Proctor test gives the compactive effort of the soil and CBR gives the subgrade strength. The outcomes acquired are thought about for the examples and inferences are drawn towards the unstability and effectiveness of admixture support at different percentages, as replacement for high quality subgrade and cost-effective approach.

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Keywords:

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97.	**Authors:**	**Hemant R Kulkarni, Vasudeo B Virulkar**	
	Paper Title:	**Flicker Mitigation in PMSG WECS Employing Grid Side Converter Control**	
	Abstract: Need of green energy can be catered with the support of major share of wind power generation systems in the global energy scenario. Power quality of generated wind power depends on several factors. Wind velocity is one of the major factors producing fluctuations in the generated output voltage. These fluctuations cause visible disturbance to human eyes, known as voltage flicker. The wind farms affect performance of Grid due to variations in wind speed with respect to time. The paper explains measurement of flicker, flicker level severity index along with flicker mitigation technique. Flicker is observed in the power generated with help of Permanent Magnet Synchronous Generator (PMSG), where wind velocity is changing continuously. After employing converter control strategy, reduction in flicker level severity index is observed. The system is simulated using PSCAD/EMTDC, a powerful simulation software. Result shows that Grid side converter control helps to mitigate flicker effect. **Keywords:** Grid side Converters, Permanent Magnet Synchronous Generator (PMSG), Renewable Energy, Voltage Flicker. **References:** 1. Global Wind Energy Council,‖ GWEC GLOBAL WIND REPORT 2018‖,2019.
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98.	**Authors:**	**Prakash Chittora, Sunvil Shukla, Sneha Yadav, Vimlesh Singh Rathore, Rakesh Yadav**	
	Paper Title:	**Extracting Maximum Power from PV Model using Fuzzy Logic Technique**	
	Abstract: Electricity has become an inseparable part of our daily lives, its domain approach is boundless. Due to continuous use of energy resources (both renewable and non- renewable), it is our priority to conserve our resources. What is extracting power through PV cell? Solar energy is inexhaustible and can be extracted to electrical energy which eases the high consumption of non renewable resources. How to maximize the solar energy? Maximum energy can be obtained by some external aid in the form of MPPT. Why do we incorporate different techniques in a MPPT? To control the maintenance of operating point of PV array at its maximum peak Optimization of renewable energy has drastically increased over the past few decades and now capable of conservation at a higher level. Solar energy is prime example of renewable source. Not more than 50% solar irradiance is converted to solar energy without any external aid (MPPT). These techniques are mentioned in the literature work below and the respective algorithms as well. **Keywords:** MPPT, Fuzzy , Photo Voltaic **References:** 1. A. F. Boehringer, “Self-adapting dc converter for solar spacecraft power supply,” IEEE Transaction on Aerospace Electronic	**561-565**

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99.

Authors: **Mohd Aasim Ahmed, H.S. Vidyadhar**

Paper Title: **The Behavior of Flat Slab and Conventional RC Slab for Multi-Storey Buildings with Passive Energy Dissipating Devices Situated in High Seismic Zone.**

Abstract: The disaster safe construction practice for an engineer is a most difficult job. Today we have witnessed these natural disasters at its peak. Even after all highly skilled techniques used for constructions these natural disasters-like floods, earthquake, landslides etc.… are not negotiable. However, we are learning lessons from these disasters and upgrading ourselves so that a resistant structure is constructed.
Among these disasters, the less predictable the less comprehended and highly disastrous is an earthquake. Even after the development of technology this disaster is highly unpredictable.
Conventional attempts to make a building earthquake resistance which do not collapse under strong seismic forces has proved to be satisfactory but these techniques will cause a damage to non-structural components such as glass, window, door etc.… (OR) even some times the failure of structural components which leads to non-functionality of a building, but it should be noted that building like corporate offices, call centers, hospitals etc. … must remain functional even after the earthquake. Hence special techniques are required to design the buildings to overcome above problem. Passive energy dissipating devices is the technique used to dissipate the energy incorporated in the building due to an earthquake.

Keywords: ETABS, Flat Slab, Conventional RC Slab, Passive energy Dissipating Devices.

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Authors: **Nishi Shahnaj Haider, Sibu Thomas, Akhilesh Kumar Shrivas**

Paper Title: **Image Based Grading of Emphysema**

Abstract: Emphysema is permanent abnormal enlargement of alveolar walls due to destruction of the alveolar tissues and thereby affecting the gas exchange process of lungs. Grading is usually done to rank the severity of the disease. This paper is a comprehensive review of the imaging based methods used to monitor the emphysema severity. This article aims at the identification of the best imaging method for emphysema grading. Correlation of imaging outcome with pulmonary function parameters is analyzed. Time frame of reviewed articles included is from 2002 to till date. In this review, the classification methods employed for grading emphysema are examined. The best grading method was chosen based on the superior performance obtained in comparison to all the existing work available so far in grading the severity of emphysema. Three-dimensional CT densitometry is

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found to be highly significant with a correlation coefficient of $r = 0.97$ at significance value, $p < 0.001$ for the classification of moderate to very severe emphysema as compared to pulmonary function test (PFT). Further research needs to be done to identify methods for evaluating the progress of emphysema during its mild stage.

Keywords: Chronic Obstructive Pulmonary Disease, disease severity, emphysema, grading, imaging.

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101.

Authors:

Paper Title: **Suspend**

Abstract:
Keywords:
References:

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Authors: **Gandhapu Yashwanth, Gokavarapu Manikanta Kalyan, Singamsetty Phanindra, M. Jasmine Pemeena Priyadarsini**

Paper Title: **Fake Biometric Detection for Face and Fingerprint**

Abstract: Face and Fingerprint acknowledgment is most popular and generally utilized as a biometric innovation as a result of their high ampleness and peculiarity. Besides the recognizing the user the present biometric systems have to face up with the new troubles like the spoofing attacks, like presenting a photo of the person to the camera. We study the anti-spoofing solutions for distinguishing between original and fake ones in both face and fingerprint in this paper. Generally, the face arrangement and portrayal that exhibits enhancements in coordinating execution over the more typical all-encompassing way to deal with face arrangement and depiction. Face detection, introduced in this paper, comprises the accompanying significant advances like facial features locating using Active Shape Models (ASM), Local Binary Pattern for feature extraction which is known for its texture classification, and Random Forest is used for classification. a fingerprint comprises of edges and valleys design otherwise called furrows. For Fingerprint detection, introduced in this paper includes the accompanying significant advances like Minutiae based local patches, SURF, and PHOG for feature extraction, and Random Forest is used for classification. The proposed methodologies are profoundly seriously contrasted and different as the investigation of the general picture nature of real biometric tests uncovers essential data for both face and fingerprints that might be productively used to segregate them from fake attributes.

Keywords: Active Shape Models(ASM), Local Binary Patterns(LBP), Pyramid Histogram of Oriented Gradients(PHOG), Random Forest(RF), Speeded-Up Robust Features(SURF).

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103.	**Authors:**	**Vinay Khandagale, Iti Agarwal, Aditya Ujalambkar, Sanjay Ghodake**
	Paper Title:	**IoT Based Electrolyte level Monitoring System**

Abstract: In hospitals, Electrolyte is fed to patients in many ways. One of the important functions is in the form of saline to treat dehydration and thus improve their health. In current health care measures, whenever a saline is fed to any patient, the patient needs to be continuously monitored by a nurse or any caretaker. Monitoring the Saline level in a bottle attached to a patients' body is one of the most important tasks for a Nurse/caretaker. In cases involving ignorance or carelessness, the bottle may get empty and blood can start flowing reverse into the bottle from patients' body. This is a risky situation and needs a better solution. We are developing an IoT based bottle level monitoring system that will detect the saline bottle level at all instances and will send an alert to the hospital's control room in case the bottle reaches it's critical level(30% of initial level) and if there is no response and the level goes beyond 20% on initial level, we stop the flow. We are using ESP8266 Wi-Fi module for processing and communication and load sensor for detecting the bottle weight. The proposed system is not electrolyte specific and can monitor any fluid. A Dc Motor controlled- screw actuated clamp mechanism is used for stopping the flow.

Keywords: IoT, level monitoring, ESP8266 Wi-Fi, electrolyte-specific, DC Motor controlled, notification, screw actuated clamp mechanism.

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104.	**Authors:**	**Ola A. Mayhoub, El-Sayed A.R. Nasr, Yehia Ali, Mohamed Kohail**
	Paper Title:	**Behavior of RPC based Alkali Activated Material Compared with Conventional RPC**

Abstract: Reactive Powder Concrete (RPC) is a type of high strength concrete that is characterized by its excellent engineering properties. Inclusion of high silica fume contents and high cement demand are the most essential parameters in the development of RPC. Silica fume is a highly cost and unavailable material in many countries. Cement industry is not a sustainable eco-friendly process. High heat of hydration and many shrinkage cracks are also the most shortcomings obtained from cement utilization. Therefore, it's urgently required to replace the utilization of silica fume and cement with partially or totally environmental friendly materials in the production of RPC. Metakaoline (MK) is a low cost, available and high pozzolanic material that can substitute silica fume in concrete. Alkali Activated Materials (AAM) binders are new technology that can totally replace the cement in concrete. The main objective of this study is to evaluate the performance of RPC based cement developed by MK and the performance of RPC based AAM under different curing conditions. Slag and MK are the used AAM in this research which are eco-friendly, sustainable and quite available materials in Egypt. The engineering properties like compressive strength and sorptivity are studied to investigate the behavior of RPC. It was concluded that thermal curing has shown a good impact in the performance of all RPC mixes. MK has shown satisfied results in the behavior of RPC based AAM under thermal curing. Slag shows better mechanical and durability properties that resemble the behavior of the conventional RPC based cement.

Keywords: Reactive Powder Concrete, Alkali Activated Materials, GGBS, Metakaoline, Silica Fume, Curing Regimes, Compressive strength, Sorptivity.

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Authors: **Anurag Jain, Sohit Agrawal, Mukesh Pandey, Abhishek Thakur**

Paper Title: **Effect of Partial Replacement of Sand and Cement with Lathe Scrap Fibre and Steel Fibre in Concrete**

Abstract: Aim of this investigation was to study the effect of lathe scrap fibre and steel fibre replacement in concrete at different percentage so that we can achieve an improved and more durable concrete comparative to conventional concrete. Concrete is weak in tension and good in compression and also it is less ductile therefore, to terminate those weaknesses of concrete reinforcement bar is combine with it, but the reinforcement bar can’t fulfil the requirement of mechanical strength of concrete so to fulfil the requirements lathe scrap fibre and steel fibre is added so that the better composite material is achievable. After the investigation on several researcher work, we find 1.2% to 1.5% of lathe scrap fibre or steel fibre replacement according to weight of concrete, this is the optimum replacement in concrete to improve mechanical strength. But according to another research paper in which fine aggregate is partially replaced by lathe scrap fibre at percentage of 15%, 30% and 60% by its weight and it also improves the mechanical strength in compare to conventional concrete. Therefore, the review study characterize the utilisation of lathe scrap fibre and steel fibre in FRC improves the tensile strength and provides better resistance for early crack development in concrete. And also inexpensive, easily available and furthermore best for retrofitting and shotcrete techniques.

Keywords: – Lathe Scrap fibre, Compressive Strength, Split Tensile Strength, Flexural Strength, Concrete workability, FRC(Fibre reinforced concrete).

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106.	**Authors:**	**G. S. K. Gayatri Devi, S. Krishna Veni**	
	Paper Title:	**Design of CCAA for Optimized Difference Patterns**	

Abstract: Difference patterns find applications in target tracking radars for accurate target detection. Such patterns must be generated with minimum sidelobe levels to reduce the effect of interfering signals like clutter, jamming signals. The present work is focused on designing concentric circular arrays(CCA) of practical elements producing low sidelobe difference patterns using thinning. Simulated results are presented for 6 ring and 7 ring concentric circular antenna arrays.

Keywords: Concentric circular antenna arrays (CCAA), Differential Evolution Algorithm, Difference patterns, Peak Sidelobe level.

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107.	**Authors:**	**Md. Ariful Islam, Tanjima Akhter, Amena Begum, Md. Rakib Hasan, Farzana Sultana Rafi**	
	Paper Title:	**Brain Tumor Detection from MRI Images using Image Processing**	

Abstract: Brain Tumor has become one of the common diseases in the world which can be characterized as the unhindered expansion of atypical cells in brain and when compared to tumors in other areas of the body, it gives rise to a challenge for diagnosis. But in the development of this disease along with the well-established image processing system, diagnosis becomes much easier. The thrust of this project is to provide possible methodology for detecting size and region of tumor quickly from MRI image using region splitting, merging and growing based segmentation process within a short span of time. The whole process includes five stages namely Input as MRI images, preprocessing, enhancement of the image, image segmentation, feature extraction and classification of the tumor within boundary. Upon collection of MRI image, contrast enhancement and median filtering have used for enhancing the image and then segmentation process have done to detect the brain tumor. Graphical user interface has used for organizing input-output data and the algorithm has been designed by using MATLAB.

Keywords: MRI, GUI, Segmentation, Brain Tumor, Filtering, Enhancement, MATLAB.

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	Authors:	**Savitha A. P, Ramegowda**
	Paper Title:	**New Fusion Techniques to Extract Image Features and Recognition of Palm Vascular Pattern**

Abstract: A strong and efficient Feature extraction algorithm is highly recommended for individual recognition in human authentication systems. This paper presents the work carried on palm vein image to extract features of the person vein for recognition and classification using improved canny edge detector. This paper describes a novel method to extract valuable features of the people's vein pattern and achieving high recognition rate. The experiments carried using two algorithms 1) PCACE (principal component analysis with canny edge) algorithm and 2) LDACE (linear discriminant analysis with canny edge) algorithm. These two methods are analyzed on palm vein image and found LDACE algorithm is a best extractor compare to PCACE method. An Equal Error Rate (EER) is applied to evaluate two algorithms. Hidden Markova Model (HMM) is utilized for image feature classification and matching using contactless Palm Under Test (PUT) palm vein database. The percentage of recognition is measured by False Acceptance Ratio (FAR) and False Rejection Ratio (FRR). This method shows robust response with respect to human palm vein identification process computation time and improved recognition rate.

Keywords: Contactless, EER, FAR, FRR, PUT, Recognition.

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109.	**Authors:**	**V. Krishna sree, Jeevan Sai, Sri Siri, Ruchitha, Saishma**
	Paper Title:	**Smart Wrist Band for Women Safety**

Abstract: It has become quite difficult for today girls to move freely on streets. This has become a constant matter of worry and safety regarding their safety. There has been a tremendous increase the harassments against women these days. 54%of all the harassments registered are women harassments. We can't change the society but we can increase the security of girls. This proposed system for women consists of a wearable safety device which operates with sos button. This project is built using raspberry pi, GSM module and GSM modem. The sos button is provided in the band. If women get into any trouble, then if she presses sos button then the message is sent to registered mobile number. The message along with the location details is sent to the already registered mobile numbers and other emergency contacts. The location of the user is tracked using GPS. The LCD display will display the status of the project. This tracking system is a combination of raspberry pi, GPS receiver and GSM modem. The GPS receiver receives the location data from the satellite in the form of latitude and longitude. When a person presses the sos button, the raspberry pi processor processes this information and send it to the predefined registered mobile numbers through GSM modem. This research work can be applied in the

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safety sector for women. It reduces the crime rate against women to a major extent.

Keywords: Wrist band Raspberry pi3, GSM, GPS, SOS, LED, and LCD.

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110.

Authors: **Krithika Balasubramanian, Akhil Kothari, Vijayakumar Kuppusamy**

Paper Title: **Autonomous Driving in a Multi-Lane Highway Environment**

Abstract: Our goal through this paper is to figure out if it is possible to create an autonomous driving environment with a self-governing car with the help of a Q learning algorithm, a variant of Reinforcement Learning. To prepare and test-driving calculations, we convey a reproduced traffic framework simulation. We plan to split the environment around the agent vehicle into 16 states. The Q learning algorithms calculations, which are based on the Bellman's Equations, will help quantify the quality of each state, helping the agent make the right decisions in the environment to avoid collisions. The World health organization reports highlight that in 2019 there have been over 5 million reported road accidents with approximately 1.5 million causalities and an increase of 167% in road accidents over the last 15 years. Through this paper, we want to push the envelope concerning creating a more secure driving environment and help avoid unfortunate accidents and loss of lives.

Keywords: Autonomous driving, Q Learning, Multilane, Reinforcement learning.

References:

111.

Authors: **K.Geetha**

Paper Title: **Evolutionary Multivariate Kernal Svm Prediction Method for Classification**

Abstract: Thyroid disorders are common among the world wide population. This disorders posses' significant problems among Indians. Research studies shows that nearly 32% of Indian population suffers from various thyroid disorders. This paper deals with the thyroid data set which in turn classify into three groups as hyper thyroidisim, hypothyroidism and normal. The American Thyroid Association reported twelve percent of their citizens suffer from thyroidism in which 60% population are unaware of their condtions.. Above statistics implies the classification of thyroid disorder is crucial in global perspective too. The thyroid data set are collected from UCI repository and it is multivariate type with 21 attributes. With the 21 attributes only 10 attributes are selected based on their rank. Hybrid Differential Evolution Kernel Based SVM algorithm is used to classify the data set. It takes around 30 epochs to stabilize the errors. The classification accurancy is observed to be 67.97%.

Keywords: Curse of Dimensionality , Classification ,Evolutionary algorithm , Multivariate data type ,Thyroid Data Set

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112.

Authors: **Vikas Singhal, Yash Kumar Shukla, Navin Prakash**

Paper Title: **Image Steganography embedded with Advance Encryption Standard (AES) securing with SHA-256**

Abstract: The proposed paper, works upon the idea of securing the classified information. This is achieved by using steganography which is an approach to hide classified information into some other file while maintaining its visual aids and secondly is cryptography which works upon textual data and transform it in a way that no one can comprehend it. The proposed method secures the weaker section which is the key in Advance Encryption Standard using hashing technique. The proposed work enhances the level of concealment of information from unauthorized access and for covert information exchange by encrypting the data and hiding it into a multimedia file known as image. The Secure Hash Algorithm 256 generates a hash key of 256 bits which is an unbreakable hashing technique after that the key is used in the process of encrypting the text with Advance Encryption Standard 256 which is an unbreakable encryption technique till this time and a cipher text is obtained. The

cipher text is embedded into a target image using Least Significant Bit method which make changes in image that cannot be understand by naked eyes. The change in byte is 0.000002%. It ensures the visual quality of an image remains intact. The distortion or change in the image remains intermittent to human eyes. The major issue concerned for the government and security agencies such as were to exchange highly classified information in a secure and undetectable manner and abide the notion of hacker to comprehend any such information.

Keywords- AES, Cryptography, Image steganography, LSB, SHA-256.

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113.

Authors: **Saravanan K, Hareeharan E, MohamedIrfan A, Kalyan Kumar JS**

Paper Title: **Sensing Plant Disease Through the Utility of Deep Learning**

Abstract: Crop diseases were one of a serious hazard to food preservation, but that the rapid identification continues tough against numerous segments regarding the globe's way to the shortage of mandatory infrastructure. The series of stimulating global Smart phone penetration including up to date advances also latest traits paved the way for deep Learning knowledge practicing public data sets of infected crops and also healthy plant leaves gathered beneath controlled stipulations, A deep CNN to pick out various crop species including its illnesses(disease) is developed. To verify the feasibility of this method that the trained model has to reach a great efficiency on a held-out check set. Then with the help of online sources testing the model toward a collection of pictures gathered from depended. The random selection is only supported by this accuracy implies an awful lot on the pinnacle, general accuracy can be boosted by the more various sets of training records. Overall, The way of training the deep gaining knowledge of forms on increasingly huge plus publicly to be had image data-sets provides a clear pathway closer to telephone-assisted crop ailment report on a big global scale.

Keywords: Disease Detection, deep learning, Tensor flow.

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Authors: **Vasanthi Vadlamudi, Divya Sree Ravi, Rishita Dhulipalla, Rohith Vamsi Danduboyina, K.S. Vijaya Lakshmi**

	Paper Title:	**Product Quantization using Regression**	
	Abstract: Approximate Nearest Neighbor (ANN) has developed an immense demand for many tasks. This ANN methodology was being used for product quantization. These product quantization methods were being used for e-commerce sites. However, this quantization maybe sometimes misleading due to a lack of accuracy in technique. So, we managed to increase the accuracy of quantization by adding Logistic Regression in the process. This helps to increase the accuracy of the method by having a probability value. This helps to make correlated items much more accurate when compared to pure quantization. This method is helpful for e-commerce sites for efficiency in the prediction of purchase by the customer. **Keywords:** Approximate nearest neighbor, product quantization, quantization, regression. **References:** 1. L. Huang, Q. Yang and W. Zheng, "Online Hashing," in IEEE Transactions on Neural Networks and Learning Systems, vol. 29, no. 6, pp. 2309-2322, June 2018. 2. X. Liu, B. Du, C. Deng, M. Liu and B. Lang, "Structure Sensitive Hashing With Adaptive Product Quantization," in IEEE Transactions on Cybernetics, vol. 46, no. 10, pp. 2252-2264, Oct. 2016. 3. H. Jégou, M. Douze and C. Schmid, "Product Quantization for Nearest Neighbor Search," in IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 33, no. 1, pp. 117-128, Jan. 2011. 4. D. Xu, I. W. Tsang and Y. Zhang, "Online Product Quantization," in IEEE Transactions on Knowledge and Data Engineering, vol. 30, no. 11, pp. 2185-2198, 1 Nov. 2018. 5. M. Ghashami, A. Abdullah, "Binary coding in-stream", CoRR, vol. abs/1503.06271, 2015. 6. C. Leng, J. Wu, J. Cheng, X. Bai, H. Lu, "Online sketching hashing", Proc. IEEE Conf. Comput. Vis. Pattern Recognit., pp. 2503-2511, 2015. 7. F. Cakir, S. Sclaroff, "Adaptive hashing for fast similarity search", Proc. IEEE Int. Conf. Comput. Vis., pp. 1044-1052, 2015. 8. Q. Yang, L. Huang, W. Zheng, Y. Ling, "Smart hashing update for fast response", Proc. Int. Joint Conf. Artif. Intell., pp. 1855-1861, 2013. 9. F. Cakir, S. A. Bargal, S. Sclaroff, "Online supervised hashing", Comput. Vis. Image Understanding, vol. 156, pp. 162-173, 2017.	**653-655**
	Authors:	**Nidhi Gautam, Sohit Agrawal, Mukesh Pandey, Nikhil Nandwani**	
	Paper Title:	**Effect of Mixing of Rice Straw to Enhance the Characteristics of Soil**	
115	**Abstract:** The foundation should have sufficient strength to support any land based structure. The soil surrounding the foundation plays a very important role. The strength of soil should be maintained according to the loading conditions. The soil reinforcement process helps to attain the required engineering properties in soil for the construction purpose. The necessity of enhancing soil properties came to the light from the beginning of construction work. Soil reinforcement was used in India in 1970's but proper techniques and skilled labour was not available that's why in India ancient methods for soil reinforcement was using, show the soil reinforcement lots lost its importance. Recently, the demand for infrastructure, raw materials and fuel is improving show the process of soil reinforcement rising its importance up again. According to the better research, materials and equipment, soil reinforcement is the cost effective and popular method for improving the soil properties. Here, in this paper, soil reinforcement analysis completed with the mixing of soil with the powder produced from burning of rice straws fibers (parali) by an specific method. The main motive of this analysis is to find out the utilization of waste rice straw fiber materials in foundation construction without open burning of waste so we can reduce the pollution which create by the open burning of rice straw in the fields. **Keywords:** About four key words or phrases in alphabetical order, separated by commas. **References:** 1. B. C Punmia, Seventh Edition, "Soil mechanics and foundation", Luxmi Publication, New Delhi, (2017). 2. Josefa Roselló and Lourdes Soriano, "Rice straw ash: A potential pozzolanic supplementary material for cementing systems", Journal of Industrial Crops and Products., vol. 103, (2017), pp. 39-50. 3. Li Wei, Shou Xi Chai, Hu Yuan Zhang and Qian Shi, "Mechanical properties of soil reinforced with both lime and four kinds of fiber", Journal of Construction and Building Materials, vol. 172, (2018), pp. 300-308. 4. Mohamed A. EI-Sayed and Taher M. EI-Samni , "Physical and Chemical Properties of Rice Straw Ash and Its Effect on the Cement Paste Produced from Different Cement Types ", Journal of Eng. Sci. (I), vol. 19, (2006), pp. 21-30. 5. Aditya Kumar Anupam,Praveen Kumar and G D Ransinchung R, "Use of Various Agricultural and Industrial Waste Materials in Road Construction", Proceedings of the 2nd Conference of Transportation Research Group of India (2nd CTRG), IIT Roorkee,India, (2013) 264-273. 6. Junjun LIU, Chanjuan JIA and Chunxia HE, "Flexural properties of Rice Straw and Starch Composites", Proceedings of the AASR Conference on Modeling, Identification and Control China, (2012) 89-94.	**656-658**
116.	**Authors:**	**Kowstubha Palle, A Bhanuchandar**	
	Paper Title:	**A Novel Modified Voltage Oriented Control of an Active Front-End Rectifier used for PMSG based Wind Turbine Systems**	
	Abstract: This Paper proposes a Novel and Modified Voltage Oriented Control (M-VOC) strategy of an Active Front-End (AFE) Rectifier that can give unity power factor at input side and regulated DC voltage at output side with reversible/bidirectional power flow. The proposed rectifier with M-VOC can find its place in applications like Wind energy conversion systems, DC load for electronic equipment, and adjustable AC drives. Simulation Analysis is done on this M-VOC strategy for an Active Front-End (AFE) Rectifier on MATLAB/ Simulink platform with the verification on the validity of the proposed system. The proposed Rectifier with M-VOC strategy gives good transient/dynamic response for the variations of load at output side. It also gives a pure	**659-663**

sinusoidal input current with the elimination of harmonics so that this proposed Rectifier can be used in the case of back to back 2/3 level voltage source converters of wind energy systems that supports bidirectional power flow.

Keywords: Converter control, harmonics, dynamic response, Unity Power Factor, AFE Rectifier, Wind Energy Systems.

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Authors: **Abarna.A, Amuthavani.B, Varshini.V, Chidambaram.S**

Paper Title: **Prediction of Emergency Admissions in Health Centres using Data Mining**

Abstract: In recent days, Emergency Department in healing centre is crowded, which causes negative consequences for patients. The internet is a crucial bridge for connecting patients with medical services. The data of the patients in healing centre contain data like physician note, x-ray radiology, discharge rundowns which are unstructured. In the predictive inspection, the free text is an essential part of patient records and it is necessary. To avoid this situation, the patient data should be analyzed, and the prediction should be made. Such a pathway can be created utilizing data mining procedures, which involves inspection and observing data to obtain vital data and knowledge through which decisions can be taken. Here the understanding focuses of intrigued are entered through a webpage that's put absent inside the database. Then administrative data from three different healing centre is applied to algorithms like Logistic Regression, CART decision tree for prediction, and its accuracy score is compared.

Keywords: Healthcare, Data mining, Emergency department, Logistic Regression, CART algorithm.

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Authors: **Amruth E , Sudev L J**

Paper Title: **"Characterization of Biodiesels Produced using Mixed Base Catalyst by Gas Chromatography & FTIR Spetroscopy"**

Abstract: In this study, fish oil & cottonseed oils were used to produce their individual methyl esters using a mixed base catalyst (Sodium hydroxide & di-sodium phosphate). The produced biodiesels were characterized to check the quality of biodiesel and to establish the feasibility of using the mixed base catalyst for production of biodiesels. The biodiesel was characterized by FTIR (Fourier Transform infrared spectrometry) and GC (Gas Chromatography) tests and the other important properties of biodiesel were found out and compared with that of diesel. FTIR test confirms complete conversion of biodiesel from individual oils and the fuel properties were found to be within the range prescribed in ASTM standards. GC analysis has shown presence of more unsaturated fatty acids in cottonseed oil and less in fish oil biodiesel throwing some light on the stability of the fuels. The present characterization studies has established the potential use of mixed base catalyst during transesterification reactions.

Keywords: FTIR, GC, RSM, Mixed base catalyst.

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119.

Authors: **Nirmal Kanti Chakrabarti, Arpita Mitra**

Paper Title: **Civil Liability to Nanotechnology Products: An Appraisal with Special Reference to Strict Liability**

Abstract: The present advantage of progress in terms of materials and their application is very much discernible in nanotechnology products. By using nanotechnology products there can be instances in which people will suffer harm and sometime death too. Some of these harm may be accidental and manufacturers may have no clue of it. However, in some cases it may happen that the producer or manufacturer knowingly release the products for economic benefits and undertook associated risks.In theoretical perspective strict liability focus more on the no fault theory rather than conduct or behavior of the manufacturers or the learned intermediaries. Thus, a manufacturer of nanotechnology product will be liable for distributing defective products directly to consumers or through retailers or distributors. At the same time the plaintiff must prove that the defect in question was the actual and proximate cause of injury and it incurred damages. In this paper an attempt has been made to examine critically the risks and civil liability, especially strict liability under Tort law of

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nanotechnology products.

Keywords: Civil liability, nanotechnology, strict liability, tort.

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Authors:	**S. D. Pawar, R. P. Badde, T. G. Raut, A. S. Chorge, O. V. Dixit**
Paper Title:	**Wind Mill Shaft Optimization Based on layer Orientation Angles using Composite Materials**

Abstract: This paper presents an application of Finite Element Analysis (FEA) for strength improvement of wind mill shaft. Also provides fundamental knowledge of transmission shaft analysis using composite material. The existing shaft is modeled using CATIA and analyzed using ANSYS 16.0. The results for stresses generated are shear stress 68.298MPa, von-mises stress 119.2MPa and deformation is 3.3905mm. First optimization is done based on fibre orientation angles of composite material. Further alternate material selection is done through study and optimization analysis is done for the same. Carbon epoxy-UD selected as material and gives final stresses as 22.974MPa and deformation is 1.255mm. The torsion deflections were obtained experimentally. The results of experimental study and FEA results are found same as infinite life.

Keywords — Wind mill shaft; Optimization; composite material; fiber orientations.

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121.

Authors:	**Pratik D. Kale, Anujkumar S. Tiwari**
Paper Title:	**Big Data for Surveillance in Mobility Sector: Application and Opportunities**

Abstract: Everyday technologies are evolving with rapid pace. Domain relevant innovations are the driving force in achieving new milestones in different technical sector. This paper resolves issues related to surveillance of Road Transport and Mobility Sector. There are a couple of domains which are marking their concrete existence in almost every field, like Big Data and Internet of Things (IoT). Big Data is an integral part of Data Science which deals with massive amount of data. When we talk about collecting data, there is no big source than internet. Internet of Things (IoT) plays a credible role in information generation from different locations using different devices and collecting the raw data to a centralized location, where the pennies will add up to a dollar, i.e. the small amount of data from different location when collected at one place will add up to the pool of data, which scale up from terabytes to 10s of petabytes, and thus we term it as Big Data. Road Transport and surveillance sector has a wide variety of problems, ranging from illegal breaching of vehicles without paying Toll taxes at Toll Plaza, to Violation of Traffic Signal law. All these problems can be eradicated by making use of hot technologies which uses a centralized system to handle these issues effectively and efficiently, Big Data is one such Technology. Big Data Analytics can help in optimizing operating procedure at such places.

Keywords: Transport, Mobility, Big Data, IoT, Surveillance, Computer Vision.

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122.	**Authors:**	**Kalpana P M, Vanitha R, Priyadharshini P, Uma Maheswari M**
	Paper Title:	**MPPT Controller based Nine Level Inverter using Solar Power Generation System**

Abstract: This project proposed a solar power generation system is used for the MPPT (maximum power point tracker) controller in a nine-level inverter. The selection of the capacitor circuit is configured using nine-level inverter and a cascade-connected to the full-bridge power converter. The nine-level inverter contains seven powers. Electronic switches simplify the configuration of the circuit system. A single electronic power switch is switched to the high frequency at any time to generate a nine-level output voltage. The output of the photovoltaic solar panel system will be fed into an MPPT algorithm to obtain a maximum amount of energy from a photovoltaic system, and this technique is used for the generation of residential renewable energy. The output voltage of a photovoltaic solar system is completed by the use of the DC-DC power converter with independent voltage sources for an inverter and reduces the harmonics generated. The nine-level inverter reduced with switches in power generation.

Keywords: DC-DC boost converter, Nine level inverter, Multilevel inverter, PWM, Solar panel, MTTP Controller.

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123.	**Authors:**	**Hema Singaravelan, Ravi S.**
	Paper Title:	**64bit Hybrid Adder for ALU Design Applications**

Abstract: The Arithmetic Logic Unit is an important component of any Central Processing Unit. An improvement of the speed, area, and power consumption of an ALU directly promotes the performance of the system. Thus, optimization of the ALU design is necessary and for this reason several common adders such as the ripple carry adder, etc. and a proposed model of a 64bit hybrid adder were designed, and a comparative analysis of their performance was studied. The proposed hybrid adder was developed using an 8bit Ripple Carry adder that evaluates the LSB followed by a Carry skip adder block consisting of a 4bit Carry Skip Adder, an 8bit Carry Skip, another 8bit Carry Skip, followed by a 4bit Carry Skip Adder, and finally the MSB is calculated by a 32bit Carry Select Adder. The adders were designed in Verilog on ModelSim-Altera 10.1d (Quartus II 13.0sp1) and later the schematic was obtained on Genus Synthesis (RTL Compiler) of Cadence for ASIC design using 45nm technology. Each adder showed some advantages, but the proposed hybrid adder optimized all aspects of the model while increasing the speed of the device.

Keywords: – ALU, Ripple Carry Adder, Carry Look Ahead Adder, Carry Save Adder, Carry Select Adder, Carry Skip Adder, Hybrid Adder, ASIC, Binary Multiplier, Divider, Control Unit, Delay, Area, Power Consumption, Optimization, Cadence Genus Synthesis (RC)

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Authors: **Karishma Mittal, Sohit Agrawal, O.P.S Bhadoria, Mukesh Pandey**

Paper Title: **Sustainability and limitation of Plastic Modified Bituminous Interlocked Paving Block: A Supervision**

Abstract: Without the use of a binder, Interlocking paving blocks locked each other and built a stable pavement structure which suitable for sidewalk, footpath and non-traffic area etc. that reduces the construction time and cost both. A huge amount of natural and industrial materials such as cement, bitumen, aggregate and other additives are employed in pavement construction and maintenance at the same time on the other hand plastic waste generation increases day by day which becomes an eyesore. It has been suggested by the researchers that plastic can sustain 4500 years without its degradation. 6 billion tones of plastic has been produced from 1950 to 2018 out which 12% and 9% have been incinerated and recycled but 79% left as untreated. This paper provides an guidance that waste plastic improves the rheological property of binder as well as the physical-mechanical property of interlocking pavement block if it combine with Bitumen. Through this investigation, an attempt also made to identify and suggest a possible use of plastic in the paving block so that dumping and land filling problem of waste plastic can reduce.

Keywords: Bitumen, Paving Block, Plastic Waste, Compressive strength.

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Authors: **Vitalii Fesokha, Igor Subach, Volodymyr Kubrak, Artem Mykytiuk, Stanislav Korotaiev**

Paper Title: **The Method of Logic Cyber Attack Detection of Abuse Functionality Type on Nginx Http-Server and Apache on the Basis of Fuzzy Logic**

Abstract: The article presents a method of abuse detection functionality of the most common open source http-servers Nginx and Apache, which currently implement a full web stack and serve more than 60% of traffic on the Internet. The proposed method is based on the application of the mathematical apparatus of fuzzy set theory and fuzzy inference to the selected analysis parameters corresponding to the properties of a logical cyber attack that realizes the vulnerability of web server data. To obtain the most accurate results of fuzzy inference the direction of adaptation of membership functions to the conditions of server operation (changes on the server and analysis of client behavior) based on the application of the mathematical apparatus of genetic algorithms is determined.

Keywords: http-server, abuse, fuzzy logic, genetic algorithms.

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Authors: **Ramkrishna V. Yenkar, Manoj Kumar Nigam**

Paper Title: **Realization of Linear and Non-linear circuits with Variable Gain DVCC**

Abstract: The analog circuits are two types; linear and non-linear. The analog circuits are, might be, with or without feedback. In general, linear circuits need negative feedback while negative or positive feedback needed in non-linear circuits. Here, the VG-DVCC is proposed for the realization of linear and non-linear circuits. Basically, this VG-DVCC is a low-gain active network block. Thus, feedback is not needed for the realization of linear circuits whereas non-linear circuits needed feedback. This paper highlights the realization of linear circuits: Instrumentation Amplifiers, Active Filters, and nonlinear circuits: Schmitt Trigger comparator, Square wave generator with variable gain differential voltage current conveyor. The performance is validated by simulation using ADS.

Keywords: Current Conveyor, Instrumentation Amplifier, Linear and nonlinear circuits, Square wave Generator.

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Authors: **Manisha Surve, Shraddha Asalkar, Shobha Rani Arangi, Sagar Surve**

Paper Title: **Strength Improvement with Different Retrofitting Methods for RCC Structure**

Abstract: Reinforced concrete is the main material which is being used in major construction projects. However, the deterioration of reinforced concrete structures is the serious problem worldwide. Apart from regular maintenance, many structures require extensive repair and strengthening.
The researchers have studied three different methods of retrofitting considering the strength and cost aspects.
In this study, Ferro-cement, Carbon Fiber Reinforced Polymer (CFRP) and Plate Bonding method are used for retrofitting deteriorated beams. Flexural strength of the retrofitted beams are tested and compared.

Keywords: Ferro-cement, Carbon Fiber Reinforced Polymers (CFRP), Plate Bonding Method, Compressive Strength, Flexural Strength

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Authors: **Swapnil Sinha, Harsh Kumar Kataruka, Vijayakumar Kuppusamy**

Paper Title: **Image to Text Converter and Translator using Deep Learning and Image Processing**

Abstract: In this paper, we will present a general study on Image and text converter using deep learning and image processing. The main contents will include how the application will work and all the processing, segmentation, feature extraction, recognition and other steps involved. We will also present how this can be used in our daily lives.

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Keywords: Deep learning, Image processing, Optical character recognition, PyTessaract, Tensor flow, Python.

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Authors: **Vaishali Arya, Rashmi Agrawal**

Paper Title: **Effect of Supervised and Unsupervised Algorithm for Cross Domain Sentiment Analysis**

Abstract: Today we are living in the "information age" where data is the capital of the new economy. With the rapidly growing data every day on online portals and social networking websites, today industries are collecting and analyzing more data than before. Though data is readily available but finding valuable insights out of it is a real task. With easy accessibility of the data, new technologies, and a cultural shift towards data-driven decision making drives the need for Sentiment Analysis (SA) and makes it relevant in most of the domains like politics, marketing, healthcare, etc. This rapidly increasing information on different domains has motivated researchers to develop a cross-domain sentiment analysis model. For the development of this model, we have analyzed the performance of supervised and unsupervised models on benchmark datasets for the cross-domain analysis. The models chosen for the supervised is the Support Vector Machine (SVM) and for the unsupervised approach we have used a combination of Vader wherein the testing results showed that the supervised algorithms performed well in comparison to the unsupervised algorithm.

Keywords: Cross-Domain Sentiment Analysis, Supervised Algorithms for Cross-Domain, SVM for SA, Unsupervised Algorithms for Cross-Domain, Vader SA.

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Authors: **Jae Mok Ahn**

Paper Title: **Heart Rate Variability Assessment by the Lyapunov Exponent**

724-728

Abstract: Heart rate variability (HRV) is a measure that evaluates cardiac autonomic activity according to the complexity or irregularity of an HRV dataset. At present, among various entropy estimates, the Lyapunov exponent (LE) is not as well described as approximate entropy (ApEn) and sample entropy (SampEn). Therefore, in this study, we investigated the characteristics of the parameters associated with the LE to evaluate whether the LE parameters can replace the frequency-domain parameters for HRV analysis. For the LE analysis in this study, two-dimensional factors were adjusted: length, which determines the size of the dimension vectors and is known as time delay embedding, varied over a range of 1 to 7, and the interval, which determines the distance between two successive embedding vectors, varied over a range of 1 to 3. A new parameter similar to the LA, the accumulation of the LE, was developed along with the LE to characterize the HRV parameters. The high frequency (HF) components dominated when the mean value of the LA was largest for interval 2, with 2.89 ms2 at the low frequency (LF) and 4.32 ms2 at the HF. The root mean square of the successive difference (RMSSD) in the LE decreased with increasing length in interval 1 from 2.6056 for length 1 to 0.2666 for length 7, resulting in a low HRV. The results suggest that the Lyapunov exponent methodology could be used in characterizing HRV analysis and replace power spectral estimates, specifically, HF components.

Keywords: Heart rate variability, Lyapunov exponent, frequency component, autonomic nervous system, entropy.

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	Authors:	**K. Kalyani**
	Paper Title:	**Analog Beamforming in Millimeter Wave MIMO Systems**

Abstract: In traditional analog beamforming schemes, like the beam selection method, use the strongest path array steering vector of the channel to generate a beam pointing to the user. In multi-user systems, such schemes will result in the large interference among the users, especially when the users are closely located. In this paper, we designed an analog beamforming scheme for downlink mm-wave multi-user systems to enhance the beamforming gain and suppress the inter-user interference at the same time. A multi-objective problem is developed to beat a balance between the inter-user interference and the beamforming gain. To solve the problem, we firstly use the weighted-sum method and then $\boldsymbol{\varepsilon}$-constraint method to transform the multi-objective problem into a single-objective problem. Then, the analog beamforming is made tractable with the constant-magnitude constraints with the use of semidefinite programing technique. Adding to these, the robust beamforming is designed to mitigate the effects of the channel estimation and to provide the robustness against the imperfect channel information. The simulation results shows that the $\boldsymbol{\varepsilon}$ -constraint method outperforms when compared with the weighted-sum method at high SNR’s for the robust multi-user analog beamforming.

Keywords: mm-waves, multi-user, analog beam forming, robust , multi-objective.

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131. **729-736**

132.	**Authors:**	**Mohd. Alam, Mohammad Nazim, Sitesh Kumar Singh**
	Paper Title:	**Deterioration Pattern of Flexible Pavement with the Help of Falling Weight Deflectometer**

Abstract: Maintenance and repair of the highway network system are major expenses in the state budget. For this reason, various concerned organizations are pointing out the need for developing an intelligent and efficient pavement performance model that can prioritize pavement maintenance and rehabilitation works. Such models can forecast the remaining pavement service life and pavement rehabilitation needs, and can help in the formulation of pavement maintenance and strengthening programmes which will reduce the road agency and road user costs. The flexible pavement performance or deterioration models involve the complex interaction between vehicles, environment, structure and surface of the pavement. Performance models relating to the pavement distress conditions like, cracking, ravelling, potholing, and roughness are analysed and developed by various researchers. Understanding the deterioration pattern of the flexible pavement is very important in order to take the decision for strengthening the pavement. The remaining life of the pavement depends on various factors such as Traffic, Environment and climatic conditions hence keeping in mind these factors. the thesis presents the pattern of the deterioration of remaining life of pavement. The thesis emphasis on determining the remaining life of pavement by conducting the FWD test. The FWD test is conducted on the same pavement for three time at regular interval to verify the remaining life of the flexible pavement.

737-744

Keywords: flexible pavements, remaining life, traffic, Equivalent Single Axle Load (ESAL), environment, Falling Weight Deflectometer.

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133.

Authors:	**Seema Wadhawan, Nidhi Gupta**
Paper Title:	**Digitalized Transformation, Social Networking and its Effect on Talent Acquisition**

745-750

Abstract: Advancement in technology has led to adoption of digitalized platforms for recruitment. Hiring in the current age is candidate driven. Competitive success of organizations has made it imperative for the recruiters to draw right talent. A vital appropriate digitalized professional social networking platform facilitates the recruiters to connect personally and professionally. The study attempts to analyze effectiveness of LinkedIn as a digitalized SNS platform by analyzing information content and website usability. Research was conducted through a structured questionnaire in Delhi, NCR with a sample size of 125 recruiters. Factor analysis was applied to identify varied attributes of the LinkedIn for its adoption by talent acquisition teams. Correlation and Regression enabled to study the influence of information and website quality on Intention to use LinkedIn. Findings of the study showed that perceived usefulness and information relevance influence the intention to use LinkedIn by recruiters the most.

Keywords: Information relevance, LinkedIn, Perceived Usefulness, Recruitment, Social Networking Site and Talent Acquisition, TAM (Technology Acceptance Model)

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134.

Authors: **Madhavi Katamaneni, Praveena Nuthakki Madhavilatha Pandala**

Paper Title: **Sickness Detection on the Leaves of the Tomato Plants by using Deep Learning**

Abstract: The purpose of this work is to recognize diseases that occur on plants in tomato fields or in their nurseries. Thus, significant learning was used to perceive the various sicknesses on the leaves of tomato plants. In the assessment, it was pointed that the significant learning figuring should be run ceaselessly on the robot. So the robot will have the alternative to perceive the ailments of the plants while wandering truly or of course self-rulingly on the field or in the nursery. Also, illnesses can in like manner be recognized from close-up photographs taken from plants by sensors worked in produced nurseries. The assessed diseases in this assessment cause physical changes in the leaves of the tomato plant. These movements on the leaves can be seen with RGB cameras. In the past examinations, standard component extraction strategies on plant leaf pictures to perceive disorders have been used. In this assessment, significant learning systems were used to perceive disorders. Significant getting the hang of building decision was the key issue for the execution. So that, two unmistakable significant learning framework models were attempted first AlexNet and thereafter SqueezeNet. For both of these significant learning frameworks getting ready and endorsement were done on the Nvidia Jetson TX1. Tomato leaf pictures from the PlantVillage dataset has been used for the readiness. Ten unmistakable classes including sound pictures are used. Arranged frameworks are moreover taken a stab at the photos from the web.

Keywords: Accuracy cultivating, profound learning, plant infections.

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135.

Authors: **Shruti Shrivastava, Usha Chauhan, Mohammad Rashid Ansari**

Paper Title: **Low Power based Dynamic TSPC D flip flop for High Performance Applications**

Abstract: D flip-flop is viewed as the most basic memory cell in by far most of computerized circuits, which brings it broad usage, particularly under current conditions where high-thickness pipeline innovation is as often as possible utilized in advanced coordinated circuits and flip-flop modules are key segments. As a constant research center, various sorts of zero flip-flops have been concocted and explored, and the ongoing exploration pattern has gone to rapid low-control execution, which can be come down to low power-defer item. To actualize superior VLSI, picking the most proper D flip-flop has clearly become an incredibly huge part in the structure stream. The quick headway in semiconductor innovation made it practicable to coordinate entire electronic framework on a solitary chip. CMOS innovation is the most doable semiconductor innovation yet it neglects to proceed according to desires past and at 32nm innovation hub because of the short channel impacts. GNRFET is Graphene Nano Ribbon Field Effect Transistor, it is seen that GNRFET is a promising substitute for low force application for its better grasp over the channel. In this paper, an audit on Dynamic Flip Flop and GNRFET is introduced. The power is improved in the proposed circuit for the D flip flop TSPC.

Keywords: D Flip Flop, GNRFET, VLSI, Nano technology

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Authors:	**Ravula Arun kumar, D. Sai Tharun Kumar, K. Kalyan, B. Rohan Ram Reddy**
Paper Title:	**Vehicle Counting and Detection**

Abstract: This paper describes about the system to count the number of vehicles on roads and highways by using adaptive background subtraction and blob tracking technologies. Overall, system requires a video stream captured from static cameras installed on roads and highways .The proposed system consists of four stages: 1) Adaptive background subtraction 2) image segmentation 3) vehicle counting 4) vehicle tracking. The necessity of tracing and counting the vehicles is helpful for traffic surveillance. The primary key features of the system are 1) Ability to count the vehicles 2) efficiency, to show that system would give the results with high perfection.

Keywords: Hole editing, Background Subtraction, Virtual Detector, Kalman Filter.

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Authors: **Rahila Jan, Mohd. Irshad Malik, Amanpreet Tangri**

Paper Title: **Influence of Lime, Rice Husk Ash and Coconut Fibre on Strength Properties of Subgrade**

Abstract: Soil stability is a significant criterion in the field of development, for soil which needs adequate steadiness, different adjustment strategies can be embraced. The entrenched methods of soil adjustment regularly utilize such establishing operators like cement. Substitution of solidifying substance with commercial or agriculture outcome is profoundly attractive. Rice husk ash is an extremely prospective agriculture dissipates as pozzolanic materials that bring about a prevalent property after joined with lime. Also, coconut fibre is well known for its durability and high resistance and gives well establishing results when combined with lime and rice husk ash. This study worked on the experimental investigation of clayey soil with admixtures like lime, rice husk ash and coconut fibre. This study included the calculation of properties of the soil as consistency limits and strength characteristics. Clay type of soil is used in this study. In view of compaction, expansion of lime, RHA and coconut fibre diminishes the dry density and expands the moisture content. From the perspective of strength characteristics and economical terms, expansion of 6% lime, 8 % RHA and 1 % coconut fibre are prescribed as ideal value for subgrade soil adjustment.

Keywords: soil stabilisation, lime, RHA, coconut fibre, clay.

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Authors: **Abdolhossein Mohammadrahimi, Mesbah Sayebani**

Paper Title: **Failure Probability and Reliability of Hatch Cover of Bulk Carrier Subjected To Lateral Pressure Load**

Abstract: One of the situations that may cause severe damage and even sinking of bulk bulkheads is the destruction of the hatch cover and as a consequence of the ship's waterlogging. This destruction may be due to heavy loads on the page, such as shock wave loads. Considering this, it is very important to investigate the possibility of structural failure in this situation. In this paper, using a MATLAB programming language developed for the FORM method, we have tried to summarize the reliability analysis on two models of bulk carrier storage models. To achieve this, first, the algorithm of the method of expression, and then the limit state function of this failure state and its components are described, then the probability of failure of these two models of the storage compartment is calculated.

Keywords: FORM method; reliability; Health index; Limit state function.

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Authors: **Sagar S. Tikar, Rajendra A. Patil**

Paper Title: **Lane Detection and Tracking using Recursive HOG Transform for Advance Driver Assistance**

Abstract: Numerous individuals pass away every year in roadway crashes brought about by driver's absent mindedness. Path discovery frameworks are helpful in maintaining a strategic distance from these mishaps as

wellbeing is the primary motivation behind these frameworks. Such frameworks have the objective to distinguish the path marks and to caution the driver on the off chance that the vehicle tends to leave from the path. A path location framework is a significant component of numerous smart vehicle frameworks. Path recognition is a difficult undertaking in light of the differing street conditions that one can run over while driving. In the previous barely any years, various methodologies for path discovery were proposed and effectively illustrated. Right now, a concise outline of existing strategies, we present a vigorous path discovery dependent on recursive HOG change. In path stamping acknowledgment, dimensional scale information, progressively changing area of plotting and recursive HOG change procedures are utilized to recognize path markings effectively. Trial results show that the proposed calculation is viable in picture pre-processing and can identify the path checking and vehicle precisely with less time.

Keywords: Recursive HOG transform; lane detection; lane departure; region of interest.

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Authors: **K. Karthikeyan, S. Sivaprakasam, N. Nagarajan**

Paper Title: **Hydrogeophysical Assessment for Groundwater Resources In Lower Vellar Watershed, Cuddalore District, Tamilnadu, India**

Abstract: Seventeen Vertical Electrical Soundings were carried away in vellar river Bank of Bhuvanagiri and Chidambaram Taluk, Cuddalore District, Tamil Nadu to classify the development and management through Artificial Recharge zone in alluvium formation and identify the sub-surface lithological series. The most electrode division used is 100m by Schlumberger pattern. Geologically, sedimentary rocks are alluvium and tertiary formations. The resistivity reports were interpreted by using IPI2WIN software. The construe outcome shows 3 and 4 layer strata. It has been prepared pseudo section in comparison with the subsurface strata to validate the results.

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Keywords: Vellar River, Artificial Recharge, Vertical Electrical Resistivity.

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141.	**Authors:**	**Bhalindar Singh, Chandana Sarkar**
	Paper Title:	**Monitoring Urban Growth and Detection of Land Use/ Land Cover Change in Silchar City, Assam and Balurghat City, West Bengal**

Abstract: Rapid growth and development of urban area is a worldwide phenomenon and it has become one of the certain issues facing by most of the urban areas in developing countries like India. The foremost reasons of this type of speedy growth are uncontrolled urbanisation coupled with accelerated population growth, massive influx of illegal immigrants and unorganized expansion of the urban areas. Accordingly, urban growth led to radical changes in land-use/ land-cover, which manifests profound impact on urban environment through the process of fast alteration of natural landscapes. In this context, the present study aims at comparing the pattern of urban growth and concerning land use and land cover change dynamics of two emerging frontier cities in India i.e., Silchar and Balurghat. For the purpose of the study, multi-temporal Landsat data have been used for analysing land use/ land cover changes in both cities for the period of 1988-2019.Hence, land use and land cover maps are prepared by applying maximum likelihood algorithm of supervised classification method with the help of ERDAS Imagine software. The accuracy assessment was also done by applying statistical method of Kappa coefficient. Further, the study reveals that both the cities have experienced with rapid rate of horizontal expansion. This has led to drastic change with sharpe conversion of vegetation and open field to built-up areas and which have caused innumerable environmental problems and hampers the sustainable growth of both two cities. Therefore, there has been dire need for proper planning to sustain balance of future urban growth and overall development of the areas.

Keywords: Urban growth, Land use/ Land cover, Change detection, Silchar and Balurghat.

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142.	**Authors:**	**Naga Siva K, Raj Kumar G, Shankar T, Chandru S, Rajesh A**
	Paper Title:	**Design of Highly Sensitive Photonic Crystal Fiber for Sensing Harmful Chemicals**

Abstract: Highly sensitive Photonic Crystal Fiber (PCF) has been designed and investigated for sensing the most harmful chemicals that exist in the world. The proposed structure of PCF consists of a solid circular core in which the samples of the chemicals are to be filled, surrounded by a hexagonal air-hole ring. The outermost cladding region comprises circular air-holes arranged in a helical (spiral) manner. Moreover, the sensitivity ratio of the liquid samples is investigated with respect to the wavelength. Sensitivity is monitored by checking for different wavelengths that range from 0.4μm to 1.85μm. With this proposed structure, the relative sensitivity of the chemicals such as paraffin liquid (n=1.48), pyridine (n=1.51), and bromobenzene (n=1.56) are found to be 78.49%, 82.99%, and 89.34% respectively. The proposed PCF structure is used to detect chemicals and any

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liquids due to its high sensitivity, large effective mode area, and low confinement loss.

Keywords: Effective mode area, relative sensitivity, confinement loss, photonic crystal fiber, etc.

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143.	**Authors:**	**Sailee Wakhare, Priya Pise, Rutuja Khalate, Shivani Birajdar, Sonali Survase**
	Paper Title:	**Secure Login System using MD5 and AES Attribute Based Encryption Algorithm**

Abstract: The cryptographic hash work and symmetric encryption make it hard to break Passwords. Secure secret word stockpiling is a crucial perspective in framework dependent on secret word verification, which is as yet the most broadly utilized confirmation system, notwithstanding its some security imperfections. So basically, this work is based on providing security to the systems. Right now, propose a secret word verification structure that is intended for secure secret word stockpiling and could be effectively coordinated into existing confirmation frameworks. In our system, first, the got plain secret key from a customer is worked out a cryptographic hash work. At that point; the hashed secret word is changed over into a negative secret word. At last, the negative secret word is encoded into an Encrypted Negative Password (ENP) utilizing a symmetric-key calculation, and multi-emphasis encryption could be utilized to additionally improve security. The cryptographic hash work and symmetric encryption make it hard to split passwords from ENPs.We are going to use message digest i.e MD5 and AES algorithm for this purpose. Besides, there are loads of comparing ENPs for a given plain secret key, which makes precomputation assaults infeasible. The calculation multifaceted nature investigations and examinations show that the ENP could oppose query table assault and give more grounded

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secret word insurance under lexicon assault. It merits referencing that the ENP doesn't present additional components other than this, the ENP could in any case oppose precomputation assaults. We are giving shading coding framework just as key logger idea secret key reason. This shading code framework is hard to break to third person. In key lumberjack the keypad of framework is mix, each time it will change the grouping of catches of 0-9 numbers,subsequent to logging the client one otp will send to client email just as the key squence of the keypad will send on client email. By utilizing this otp and key grouping client will login to framework and it will do the further exchange process. This framework will valuable in future for any financial framework or any verification reason will be utilized.

Keywords: Authentication,framework, symmetric key lookup table attack, negative database, secure password storage.

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144.

Authors: **Kusum, Supriya Panda**

Paper Title: **Detecting Twitter's Impact on COVID-19 Pandemic in India**

Abstract: India has etched a higher place in the economy as a fast growing country with a large population. India is one of the leading Twitter usage countries, with 13.15 million users as ofApril2020[1].A novel coronavirus(COVID-19), which is a pandemic, has been threatening nearly everywhere. This terrible disease started at the end of 2019 from WUHAN in China and is spreading very quickly virtually all over the world. This disease's whistleblower Dr. Li Wenliang also died from coronavirus on Feb 7, 2020.According to the WHO, on 30 January 2020, the outbreak was declared a public health emergency. In response to COVID19 he called for National Unit and Global Solidarity. All the countries in the world are linked with each other due to globalization, the proportion of labor finances migrating economically. In this paper, Twitter reflects the reality of the world. The main issue like signs and symptoms, prevention measures, and medicines which are related to this disease are discussed. Twitter is used for detecting this disease by analyzing data on social media. Nowadays social media sites are very fast and less costly for communication and exchange of information, ideas, and thoughts. This disease is being monitored by Twitter. If there is any delay it will result in a big damage to not only society but also the country. There are two methods:
1. Monitoring system
2. Awareness and alertness

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Keywords: Twitter, COVID-19,SVM,Machine Learning, Dynamic.

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Authors: **Manjesh Kumar D, Nikhil B K, Likith U, Nikhil C, B N Shashikala**

Paper Title: **Wireless Two-Way Restaurant E-menu Food Ordering System with Robot Delivery**

Abstract: This paper presents the design and implementation of E-restaurant with Robot delivery. It considered as the possible solution for the automation of present food ordering process in restaurants and hotels. The proposed system mainly consists of customer, robotic and maintainer section. The customer can place an order through the tab provided on the table which has the food menu in the restaurant website. This placed order is displayed on the system (PC) at maintainer section. Customer section's website and maintainer section PC's is connected through message queue telemetry protocol (MQTT). Maintainer can dynamically update the e-menu available in website according to availability of food in the restaurant and its prices. Kitchen staff prepares the food and places on the robot's tray and corresponding table number is selected. The robot is designed using line follower mechanism where it follows the black path laid and it will detect the table using the infrared sensor by counting the number of black patches it encounters while moving on the black path. Once the food is taken by the customer, robot will go back to the maintainer section automatically and waits for another order to be placed. The proposed system removes the language barrier between customer and waiter while ordering and to fasten the food ordering and serving process. It reduces the labor cost for the restaurants and waiting time for the customers.

Keywords: Waiter Robot, Line Following Robot, Ultra-sonic Sensor, IR Sensor, E-Menu.

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Authors: **S. Saratchandra Singh, Anish Thingujam, M.S.P. Subathra, S. Sanathoi Singh**

Paper Title: **Design Aspects of Core Components of Stabilizer Transformer of given Power Rating**

Abstract: There are wide ranges of transformers for voltage stabilizer. The autotransformers used in the voltage stabilizers are designed and constructed under design specifications of standard assumptions. In this work, core components of autotransformer are designed using power rating as only input parameter, nevertheless, taking into consideration of standard assumptions. The bounded area of the flux of magnetic field forms basis for core area of electromagnetic induction of transformer. The core area of the electromagnetic induction and window area of transformer for housing copper windings, thus, have linkage with power rating and e.m.f equation of the transformer. Accordingly, we establish a relationship, in the form of equation, between core area and window area. The product of core area and window is equated to the numerical value of the product that has been determined from the power rating and standard assumptions of other design parameters. With the help of proportional relationship, standard as well as from aspect of desired look of the transformer, between length and breadth of the core area and similarly for window area, the dimensions of the core components of the transformer are designed. The designed parameters are tested for feasibility and a transformer under the designed parameters is constructed to validate the experimental result with the theoretical values of the parameters of the transformer. This design is used to determine accurate dimensions of core components of transformer of desired power rating and desired look. This design aspect minimizes waste of core material in fabrication of core components and help in proper lamination of components such as E & I of the transformer.

Keywords: Autotransformer, core area, core components, e.m.f equation, power rating, window area.

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147.	**Authors:**	**Suspend**	
	Paper Title:		
			832-837

148	**Authors:**	**Agostinho da Silva, Andreia Dionísio, Isabel Almeida**	
	Paper Title:	**Enabling Cyber-Physical Systems for Industry 4.0 operations: A Service Science Perspective**	

Abstract: Based on the Internet of Things (IoT) and Smart Technologies, manufacturing industries are witnessing the fourth Industrial Revolution, the Industry 4.0 (I4.0), and digital transformation is a keystone in this change. Cyber-Physical Systems (CPS) are strategic in thoroughly digitalizing companies, and I4.0 operations depend on CPS efficiency. Digital plants are held by digital technologies that provide excellent tools for improving product security and supply chain security but requires structured information management to maintain the CPS in its highest level of efficiency. These systems are overly complex and hard to handle when several CPS need to be combined as in a large factory, where several machines must work together to achieve a common goal. This research addresses these issues, and we propose an information management framework of industrial CPS that, towards the industrial efficiency, affords an increase in value for all stakeholders. The framework structures the information through the introduction of two innovative value co-creation concepts: (i) Fingerprint (FP-I4.0), a virtual vehicle that can carry two types of structured information and (ii) Cockpit4.0, an interaction entity between the various service systems, applied from cradle-to-cradle. Validated through the Service Science Theory, we conclude that the proposed empirical framework may boost up CPS efficiency and, from it, I4.0 operations will be more effective.

Keywords: Industry 4.0, Cyber-Physical Systems, Smart Objects, Service Science, Service System.

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149.

Authors: **G. Ramana Reddy, P. Chitra, K. Prakash**

Paper Title: **Impedance Cytometry for Detection of Particle and Counting using Low Phase Noise DDFS – LUT**

Abstract: The biotechnology is widely growing with many technologies, still we see a large gap in real-time implementation of complete blood counting. To increase the resolution and accuracy of the measurements advanced communication DDFS can be used. The elements in Direct Digital Frequency Synthesizers (DDFS) involved are: phase accumulator, a phase to amplitude converter which also called look up table (LUT), a digital to analog converter along with active filter. Direct digital frequency synthesis is a method for generating complex high - frequency waveforms for specific applications. This DDFS generates frequency resolution which makes it ideal components use in radar system, software defined radio, modern wireless communicating system, advanced satellite navigation purpose. Use cases for high frequency we get interrupt with spurious noise, larger ROM size, and high power consumption of DDFS signal. In this paper we are proposing the use of signal generated from DDFS to impedance cytometry in which the number of particles gets detected by getting the output frequency different from the input frequency. Due to use of small frequency range of signal spurious noise, power consumption and ROM size will be less with effective performance.

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Keywords: Direct Digital Frequency Synthesizers (DDFS), Digital to Analog Convertor (DAC), Read Only Memory (ROM), Flow Cytometry, Cell analysis and Signal Conditioning.

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	Authors:	**K. Bhavani, Suneetha Emmela, K. Gowthami, M. Sandhya Rani, B. Deepika**
	Paper Title:	**Accident Detection and Elegant Rescue System using Android-Real Time Location Tracking**

Abstract: The measure of accidents happening in India are developing a tiny bit at a time. Crisis reaction time is inconceivably major, when it fuses occasions, for example, vehicle episodes. Most of the human lives are being lost thinking about road troubles. Quantifiable Analysis shows that in the event that we rot only 1-minute in mishap reaction time that can develop odds of sparing a person's life up to 6percent. Among all the occurrence cases, some can be constrained by taking certain preventive measures and some can be spared by giving a concise data to the misfortune's family. This work region work helps the misfortunes by giving some concise ramifications to their particular relatives furthermore perceives the guideline driver of the mishap. That is, either the disaster is intoxicated or fire setback has occurred, and so on. In like manner the proposed framework gives the constant zone following.

Keywords: Emergency victim, Emergency responder, Sensors, Tracking real-time location.

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9. "Vehicle Monitoring and Tracking System using GPS and GSM Technologies", by S. Thanveer, Guntha Vamshi Krishna, Syed Mohisin Akram,B. Hari Kumar, Syeda Fathima Tehseen.
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11. "Wireless System for Vehicle Accident Detection and Reporting using Accelerometer and GPS", by Shailesh Bhavthankar, H. G. Sayyed in ISER (International Journal of Science and Engineering Research).
12. "Real-time Alcohol Detection and Accident prevention System for Four Wheelers", by Kowsalya Devi, Joys Shanthini B, Aparna Murali, Arthi M, in IJETA (International Journal of Engineering Trends and Applications).
13. "Automatic Vehicle Accident Detection and Messaging System Using GPS and GSM Module", by Jayati Routh, Arshiya das, Piyashi Kundu, Madhubarsha Thakur, (International Journal of Engineering Trends and Technology).

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151.	**Authors:**	**Sampa Chau Pattnaik, Mitrabinda Ray**
	Paper Title:	**Software Reliability Prediction and Estimation**

Abstract: The rapid growth of the software products tends to increase the software application complexity. The complexity affects the software quality which is achieved by means of software reliability. It is desirable to perform reliability analysis at the early phase of Software Development Life Cycle. The paper conducts a thorough analysis on Bayesian model and Markov model which are common for both reliability prediction and estimation. We evaluate the state based model and path based model for reliability assessment and results obtained in both are same.

Keywords: Software reliability, Reliability Metrics, Markov Model, Reliability Models, Reliability Prediction, Reliability Estimation

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Authors: **Sudarshan R. Vhatkar, Pradip D. Jadhao**

Paper Title: **Determination of Lateral Force on Steel Plate Shear Wall by using American Code**

Abstract: For seismic design requirements, the major stress dispersing components for steel plate shear walls (SPSWs) that be resistant against lateral forces are un-hardened plates infilled (webs) that bend for shear then shape the sequence with diagonal tension field actions (TFAs). The tensile load of an infill plate must be resisted through the horizontal boundary elements (HBEs) and the vertical boundary elements (VBEs) surrounding every plates by means with its capacity design point of view. If rigid connections were established for both the HBEs and the VBEs as well as among VBEs even its base (when stated with other SPSW cases), the SPSWs often gain along with moment of resistance from another boundary element with that of its lateral horizontal forces deployed. Appreciating every usefulness by their boundary frame with their overall strength in that model, through their interest as can also occur in any form of optimizing the design of the SPSW, so instead of based for their appearance to this process for the over strength with which this can supply for withstand a defined lateral forces. About the lateral design, many aspects control its reaction to light – frame shear wall: rank the encasing elements, fastener style, fastener position, keep on low tightening system, size as well as the classification with the connected structural boards, existence frame connections, aspect ratio in the wall (height of the wall and length of the wall ratio), with wall attached components. While framing products and fastener forms vary throughout Cold – Formed Steel (CFS) as well as wood – frame shear wall mechanisms, a whole responds for those mechanisms also seem to be relatively equal when they are sufficiently comprehensive to resolve the material centric limit states.

The steel plate shear wall (SPSW) arrangement seems to be recognized just like most among any simplest efficient ways for resistance of the lateral forces, specifically through seismic activity, the loads are adapted on the model. This comprises along with one steel plate infilled attached through an enclosed system throughout horizontal beams and vertical columns for the movement of lateral forces to the base of the foundation. Steel plate shear walls (SPSWs) column in mid – rise along with high – rise constructions typically needs an outsized compression capability, because it bear either an axial forces with gravitational forces of lateral forces and imposed by the moment of overturning. In order to ensure the effective usage with steel inward the plate infilled, and even will attain goodness as a whole earthquake output on that wall, that formed tension field need to have relatively consistent, requiring suitable anchoring by effective accompanying members of the frame.

The lateral fore on the steel plate shear wall (SPSW) is determined by using American code.

Keywords: Cold – Formed Steel, Horizontal Boundary Element, Steel Plate Shear Wall, and Vertical Boundary Element.

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	Authors:	**Sowmya KB, Sagar T, N R Pavan Santosh**
	Paper Title:	**Smart Traffic Controller Implementation using FPGA**

Abstract: Every second heart attack patient in India takes 7 hours to reach a hospital, which is almost 14 times more than the ideal time within which a heart patient should be treated that is 30 minutes, government data shows.A two-year data from the ongoing Management of Acute Coronary Event (MACE) Registry of the Indian Council of Medical Research (ICMR) shows at some places it even takes 15 hours. A lot of precious time is still being wasted in traffic. Also some lines in the traffic junction are prone to traffic than the other lines and all the lines are held green for the same time irrespective of the density of traffic. The FPGA (Basys-3) based traffic controller sets the light green of a line if it detects ambulance (using sound sensor) in that particular line. Also if the density (determined using IR sensor) in one of the lines is high that particular line is held green for longer time.

Keywords: Traffic light controller, FPGA, sound sensor, IR sensor

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154.	**Authors:**	**B. Prathiba, Sarika R Khope, N. B. Hulle**
	Paper Title:	**A Proposed Method to Enhance the Quality of Data Communication in WSN using Modular Arithmetic**

Abstract: Wireless sensor networks (WSN) are the current direction to monitor the resources and processes by developing fault tolerant distributed auto configure systems. High reliability is required to use WSN in safety systems, real time monitoring systems, guard systems and industrial control for all levels of the OSI model. To eliminate the noise and to process the information parallel by extending the signal spectrum using FHSS and Residue number system (RNS) based transformation. These approaches increase the reliability of data transmission in a WSN physical layer only. It is essential to have reliable data transmission in the network layer. When network topology is modified, packet loss is caused by overload and emergency or inaccessibility of units.

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Delay time increases because of packet retransmission. These considerations have led us to propose to work on "Performance studies on RNS based spread spectrum techniques for few communication channels"

Keywords: RNS, WSN, RRNS, RSNS, IGRSNS

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Authors: **K. Spandana, Suresh Pabboju, Likhitha Chinthakuntla, Gorupally Sai Chandana**

Paper Title: **Current research on Internet of Things (IoT) in Agriculture**

Abstract: IoT, a sensation in modern-day technology, has a major impact on the rapidly growing technological aspects. It's making people's life easier and also enabling us to do things that were previously seen as miracles. It helps in solving many complex real-time problems. One such major application in the field of agriculture can turn out to be productive and profitable. This paper explains a variety of techniques infusing IoT in agriculture, that helps in productive and predictive results in that field, thereby leading towards precision agriculture. A low-cost power supply and unambiguous farming can be possible with using IoT system. Wireless Sensor Networks (WSN) in which sensor nodes learn and adopt over the sensing time, gives simplicity, low energy usage. This is aimed to be deployed on a large scale by predicting using big data techniques from centralized data analysis.

Keywords: Internet of Things, Wireless Sensor Networks, predictive farming, precision agriculture.

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Authors: **S. Elkhaldi, M. Moubadir, N. A Touhami, M. Aghoutane, T. Elhamadi**

Paper Title: **Carrier to Intermodulation (C/I ratio) Calculations of a GaN 10W Class AB Power Amplifier**

Abstract: This article presents the analysis and design of a circuit to generate 3rd- order intermodulation (IM3) products for a GaN 10W Class AB power amplifiers (PA), The intermodulation products can't be eliminated by filters. So, it's a critical problem to resolve in RF systems. The circuit has been studied using a two-tone signal at a center frequency of 3.7 GHz. The two tones test is applied to make a large signal analysis of the RF power amplifier. For this paper, the two frequencies are at (3.7 ± 0.005) GHz. The (C/I) ratio, is chosen to investigate the power amplifier non-linearity, and due to various causes, upper_C/I and lower_C/I, can be distinct.

Keywords: - Microwave Amplifier; two tones; harmonic balance simulation; Intermodulation distortion; the carrier to intermodulation distortion power ratio (C/I).

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Authors: **Rupali A. Patil, V. V. Dixit**

Paper Title: **Detection and Classification of Mammogram using Fusion Model of Multi-View Feature**

Abstract: The greatest reason for ladies' demise on the planet today is Breast malignant growth. For bosom malignancy location and order advance building of picture arrangement and AI techniques has to a great extent been utilized. The involvement of mammogram classification saves the doctor's and physician's time. Aside from the different research on bosom picture characterization, not very many survey papers are accessible which gives a point by point depiction of bosom disease picture grouping methods, highlight extraction and choice techniques, order estimating parameterizations, and picture arrangement discoveries. In this paper we have focused on the survey of Convolutional Neural Network (CNN) methods for breast image classification in multiview features. In this review paper we have different techniques for classification along with their results and limitations for future research.

Keywords: Breast cancer mammogram, multi-view feature fusion, classification, CNN.

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Authors: **F. Leena vinmalar, A. Kumar Kombaiya**

Paper Title: **An Improved Dragonfly Optimization Algorithm based Feature Selection in High Dimensional Gene Expression Analysis for Lung Cancer Recognition**

Abstract: A microarray gene expression data is an efficient dataset for analyzing expression of thousands of genes and related disease. The more accurate analysis can be obtained by comparing Gene expression of disease tissues with normal tissues which helps to recognize the type of cancer. The processing of microarray datasets such as feature selection, sampling and classification is highly challenged due to its high dimensionality. Many recent researchers used various feature selection techniques for dimensionality reduction. Dragonfly optimization Algorithm (DA) was a feature selection technique used to reduce the dimensionality of lung cancer gene expression dataset. The dragonflies in DA are flying randomly based on the model developed by using the Levy Flight Mechanism (LFM). Because of huge searching steps, LFM has some drawbacks like interruption of arbitrary flights and overflowing of the search area. In fact, DA lacks an internal resemblance that record past potential solutions that can lead to its premature convergence into local optima. So, in this paper an Improved Dragonfly optimization Algorithm (IDA) is introduced which effectively reduces the dimensionality of the lung cancer gene expression dataset. In IDA, Brownian motion method is used to solve the issues of LFM and pbest and gbest idea of Particle Swarm Optimization (PSO) is used to direct the search method for finding potential candidate solutions to further refine the search space for avoiding premature convergence. The wrapper feature selection approach is followed by IDA to select optimal subset of features. The Random Sub space (RS), Artificial Neural Network (ANN) and Sequential Minimal Optimization (SMO) classifiers are utilized for feature selection of IDA and recognize Lung cancer subtypes. The accuracy of the classifier for selected features of Dragon flies in training instances is used as fitness value of Dragon flies in each iteration. Finally, the experimental results prove the effectiveness of the IDA in terms of accuracy, precision, recall and F-measure.

Keywords: Lung cancer recognition; gene expression data; Dragonfly optimization Algorithm; Improved Dragonfly optimization Algorithm; Brownian motion method.

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Authors: **Sampson Twumasi-Ankrah, Wilhemina Adoma Pels, Dennis Kankam Danquah, Doris Arthur**

Paper Title: **Modeling the Effect of Climate Change and Economic Growth on food Security Indicators in Ghana**

Abstract: Hunger is on the rise in almost all sub-regions of Africa, where the prevalence of undernourishment has reached levels of 22.8 percent in sub-Saharan Africa. Therefore, the purpose of this study is to examine the effect of economic growth and climatic factors on food security in Ghana using different functional forms of regression analysis. Annual secondary data on food security indicators, gross domestic product, CO2, rainfall and temperature spanning from 1999 to 2017 were obtained from the Food and Agricultural Organization (FAO) and World Bank websites. The principal component analysis and regression method were used to reduce the dimensionality of the variable and model the effect of economic growth and climatic factors on food security in Ghana respectively. The dimensions of food availability, stability and utilization were reduced from 5, 6 and 9 variables to 2 variables respectively. However, the dimension of food accessibility was reduced from 3 variables to 1 variable. Food Security Index (FSI) was constructed for each of the food security indicators, and competing models were fitted to the data. It was observed that, GDP has a positive effect on food accessibility, availability, stability and utilization. However, temperature negatively affects food accessibility and stability but a positive effect on food utilization. Rainfall has a negative effect on food stability and CO2 has a negative effect on food availability, stability and utilization.

Keywords: Food Security, Principal Component Analysis, Food Security Index, and Regression

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	Authors:	**D. Khasim Vali, Nagappa U Bhajantri**
	Paper Title:	**Optimal SVM with Features for MIR from Multi-Language**

Abstract: Nowadays, the more attentiveness of humming scheme is MIR and query. Several existing works [1,3] are concentrated on the usage of Audio MIR and beat information which is computed by mechanical computer trial procedures. The design of music information retrieval is fundamentally working in search scheme. For a resourceful music search scheme, a few attributes measured to remove from the musical signal from dissimilar languages. For retrieval, model will consider optimal kernel Support Vector Machine (SVM) classifier, to produce a maximum signal retrieval rate in a short time. Here, entire analysis initially extracted some features from musical signal. Further, enhancing the retrieval level of proposed model Sequential Minimal Optimization (SMO) model utilized for SVM kernel function. In other words, the outcome demonstrates the work develop the consequences of the retrieval scheme. As of the consequences, the signal retrieval time has condensed by the highest precision of 97.3% through the optimal kernel SVM, which is edge over the contemporary effort.

Keywords: Musical signal, retrieval process, feature extraction, support vector machine, and optimization.

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161.	**Authors:**	**Jenyfal Sampson, S. P. Velmurugan, D. Abhiram Reddy, G. Kumar Sai Reddy, G. Harika**

	Paper Title:	**A Low Budget Touch less Door Bell with Integrated Intruder Alerting Safety System**

Abstract: A Door bell is a signaling device of your home which is used to indicate the Owner (host) that someone is at your door-step. The problem that is faced today is the touch contact of the Door-bell switch, wherein everyone will have to touch it, not having any other option than knocking or slamming the door. This is a critical issue condition nowadays, when by chance a Corona affected person unintentionally touches the switch, later followed by a healthy person, wherein which it now acts as a source of transmission. A touch less door bell (Buzzer) using sensors will solve this issue, wherein available solutions have Ultrasonic sensors for the same. Similarly this door bell can also produce a strong intensity of signal which can also be used as an alert system, if an intruder is trying to enter, while the host is not in the house. To implement both these together a PIR sensor would additionally be required to enable the Ultrasonic sensor and Sound sensor. The alert system can be controlled by the Host with the help of a Switch placed inside the house. The host is being alerted with a message in both scenarios with the help of a GSM module. All of these controlled by a single microcontroller, and the reuse of PIR and Buzzer, makes it cost effective.

Keywords: Arduino UNO Microcontroller, GSM, Ultrasonic sensor, PIR sensor, Sound Sensor.

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162.	**Authors:**	**S. Ramesh Kumar, Srikanth Vemuru, Srinath.A**
	Paper Title:	**Crop Surveillance using Unmanned Aerial Vehicle for Precision Agriculture**

Abstract: Precision agriculture (PA) is a combination of latest technologies planned to increase the productivity and profitability by retaining the quality of the fertile land and surrounding environment. Crop monitoring in precision agriculture will be achieved by implementing innovative techniques; however the utilization of Wireless Sensor Network (WSNs) results in low power and low cost utilization arrangements thus turning into a predominant alternative. It is likewise outstanding that harvests are additionally influenced adversely by interlopers (human or animals) and by insufficient control of the production process. Crop surveillance through drone is one of the technical approaches to capture and distinguish the crop patterns, which helps in early detection of the crop damage, leads the farmers to take care for crop yield. Drone is also termed as Unmanned Aerial Vehicle (UAV). These vehicles are equipped with required electronic sensors, cameras and a flight control system to simulate the UAV, with small in size and flexible to handle and operate, These Aerial Vehicles can operate within indoor as well as at outdoor. The goal of the research is to contribute to the implementation and deployment of remote sensing technology with UAV. This paper enumerate on the applications of UAVs for crop scouting and analyzing the transmitted images using NDVI to predict the crop growth and yield.

Keywords: Wireless Sensor Network, Drones, Video Surveillance, NDVI.

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Authors: **K. Ravi Kumar, P. Rajesh Kumar, G. Manmadha Rao, B. Chinna Rao**

Paper Title: **Implementation of GOA to Non-Uniform PRI of SFPT for improving Resolution in Radar**

Abstract: Pulse compression techniques are mostly used for increasing range resolution in radar systems. Stepped Frequency Pulse Train (SFPT) signal is well suitable in pulse compression techniques. The Pulse Repetition Interval (PRI) of the SFPT is varied to avoid the blind speed and in Counter Measures. Here, evolutionary algorithms are used to optimize non-uniform PRI sequence of SFPT signal for getting better resolution. The PSLR(Peak Sidelobe Ratio) and ISLR (Integrated Sidelobe Ratio) are the performance measures of the signal. The non-uniform PRI sequence is optimized by Differential Evolutionary Algorithm (DE) but it has several drawbacks including unstable convergence in the last period and easy to drop into regional optimum. To overcome this, Grasshopper Optimizer Algorithm (GOA) is used in this paper for increasing the PSLR of Non uniform PRI SFPT signal.

Keywords: PSLR, ISLR, PRI, DE Algorithm, GOA

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164.

Authors: **Bader Alwasel**

Paper Title: **Robustness Analysis of Structural Controllability for Directed Networks Against Single Edge Attacks**

Abstract: Infrastructure systems are an essential component, evolving with greater interconnectivity and interdependence at varying degrees. The control robustness of a network against malicious attack and random failure also becomes a further considerable problem in network controllability and its robustness. An adversary

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who is adequately knowledgeable about the control system can take control of aspects of the network as it can compromise the control network's subset of critical nodes and/or disconnect parts of the control network resulting in low observability. Therefore, safeguarding critical infrastructure systems from different disruptions is primarily significant. This paper focuses the POWER DOMINATING SET (PDS) problem, originally introduced by Haynes to study the structure of electric power network control systems and their efficient control, as an alternate framework for the examination of the structural controllability of networks. However, PDS is generally known to be NP-complete with low approximability with recent work focusing on studying properties of restricted graph classes. Based on the PDS problem, this paper also is dedicated to studying the different edge attack strategies, as well as the robustness of network controllability of Erd s-Re´nyi networks with directed control links under single edge attacks. MATLAB will be utilized in order to produce a simulative evaluation for more realistic critical infrastructure networks such as real power networks.

Keywords: Complex Network; Structural Controllability; Attack Models; Cyber Physical Systems

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165.	**Authors:**	**Pallavi, Seerapu Anil Nagendra, S V Uma**
	Paper Title:	**Eluding Side Channel Attacks by using Masking 128Bit AES Design**

Abstract: Advanced encryption standard is detailing for data crypto graphing. The algorithm used universally for cryptography and secure data transmission, the algorithm puissant to intruders, who often attack via side

channels. One of the observed attacks was estimate the power implanted in AES core and processed probable scrutinizing to guess the key on multiple iterations. So in order to elude side channel attacks and reduce power consumed in AES standard, design proposed with masking and pipeline scheme. This design helps in shrinking power consumption as compare to AES algorithm and upgrade to withstand from attacks. Another major improvement in the design is LUT's used for masking and original algorithm almost equal, area phenomenon also solved out. The proposed algorithm implemented in VERTEX-7 FPGA board and simulated using Xilinx Vivado 2015.2 and Modelsim.

Keywords: AES crypto graphing, side channel attacks, intruder, pipelining, trade-off, S box, Galois fields, cipher, masking.

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Authors: **B. Sivaram, K. M. Balaji, M. Aasaf Ahamed, I. Ganapathy Raman, T. Ramakrishnan**

Paper Title: **Better Performance of a Smart Irrigation System using the Best Combination of Sensors and Digital Communication Devices**

Abstract: Once upon a time, India is rich in vegetation and agriculture. Now, the current scenario is totally different. Every Indian has been trained to work in different fields. In our day to day life, water has increased its demands in overall world which results in water scarcity. This kind of factors affects the regular plantation fields and home gardening. In this connection, we have proposed a methodology to overcome this problem. In the proposed research, a kit with probes and sensors is developed to measure the moisture and humidity level of plants in order to ensure the required water quantity. A solenoid valve is controlled through automation by pre-setting the values of moisture. If the moisture level goes down below certain value, then the solenoid valve is set to open and the water flows. On keeping the sensors on the top of the soil would not sense the parameters effectively which leads to unreliable results. So, in our suggested 0technique, the sensors are placed just below the soil surface, which is nearby closer to the roots of the plant, for getting the significant outcomes. The humidity sensor measures the humidity present in the air and indicates the probability of rain. This feature helps the farmers and the other gardeners in their routine work. This leads to make our country as green and rich in agriculture. There are two more sensors used viz., the flow sensor for measuring the flow rate as well as the volume of water used and the ultrasonic sensor for measuring the water level in the tank for control purpose. The sensors' data can be communicated to the remotely located user through digital communication devices such as NodeMCU (Arduino) and Internet of Things - Blynk platform.

Keywords: Agriculture, Sensor, Humidity, Moisture, Flow, Ultrasonic, Arduino, IoT-Blynk.

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Authors: **E.Bala Ganga, C.Harini, K.Kalai Selvi, S.Raja Gopal**

Paper Title: **Imperceptible and Secure Blind Image Watermarking using Spread Spectrum Scheme with Adaptive Embedding Strength**

Abstract: Watermarking is the way toward concealing advanced mystery data in a picture. The best in class watermark implanting plans with the assistance of spread range and quantization, experiences Host Signal Interference (HSI) and scaling assaults, separately. They fixed the inserting parameter, which is hard to consider both power and subtlety for all pictures. This paper takes care of the issues by proposing a visually impaired watermarking strategy, Spread Spectrum Scheme with Adaptive Embedding Strength (SSAES). Their adaptiveness originates from the proposed Adaptive Embedding Strategy (AEP), which expands the installing quality or quantization limit by ensuring the Peak Signal-to-Noise Ratio (PSNR) of the host picture.SSAES includes free of HSI by calculating in the earlier information about HSI. We present a thought called mistake limit to hypothetically dissect the exhibition of our proposed techniques in detail. Further, to improve the security of the watermarked picture, the DCT coefficients are exposed to stage based encryption. This will improve the security of a watermarked picture. The test results reliably exhibit that SSAES outflank the best in class strategies regarding intangibility, power, computational expense, and flexibility. Along these lines the proposed course of action of picture watermarking routs the drawbacks of host signal impedance security ambushes and scaling attack.

Keywords: Versatile watermarking, differential quantization, picture watermarking, Spread Spectrum, picture encryption, Permutation, Attacks.

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Authors: **Sruthi S, Rasika Dhavse, Jignesh N. Sarvaiya**

Paper Title: **Quality Assessment of Fruits and Vegetables using Bio-impedance based Expert System**

Abstract: World Health Organization (WHO) recommends a daily intake of at least 400 grams of fruits and vegetables, to prevent diet related chronic diseases and micronutrient deficiencies. It is essential to ensure the quality of foods consumed by the population on a daily basis. Quality of fruits and vegetables is governed by nutritional level, appearance, flavor and climate. Quality assessment methods should be environment friendly and should also benefit both consumers and farmers by enhancing taste and increasing yield, respectively. Conventionally employed quality assessment methods like bio-chemical analysis, imaging etc. are destructive, inefficient and time consuming. Bio-tissues are made up of cells with selectively permeable cell membranes and this makes them equivalent to resistive-capacitive network. Such a network impedes an alternating current (AC) excitation signal applied to it. This bio-impedance (BI) is measured through LCR meters, impedance analysers and off-the shelf chip based boards. In this work we have developed an accurate, smart and non destructive bio-impedance based quality evaluation technique. BI is measured as magnitude and phase for 7 days for each variety of fruit and vegetable followed by exhaustive frequency (5 kHz-200 kHz), ripening and rot analysis. BI magnitude increases as number of days advance i.e. with ripening and the phase undergoes considerable decrease with rotting. The system is made smart by incorporating an expert system. 178 samples of bio-impedance data are used to train the expert system and supervised classification is done through Random Forest classifier. Any fruit or vegetable can be classified as 'Good' or 'Bad' immediately and accurately with a maximum accuracy of 98.57%.

Keywords: Bio-impedance, Expert System, Impedance Analysers, LCR Meter, Quality Assessment , Random Forest.

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169.

Authors: **Harihara Krishnan R, Aby John, A. Amali Asha, Venisha Leena Mary R**

Paper Title: **Security Enhancement in Cryptography for Mobile Device Outsourced in Cloud Computing**

Abstract: Mobile devices often store data in cloud computing storage based on the increasing availability of the users. But security is the major issue in cloud computing. Sensitive information is stored and provided across internet to make sure that the data is protected with security. In this paper, the concept of data privacy is given more importance with regard to the major problem of reducing outsourced data usage. Mobile computing has memory storage and power resources as limitations. But cryptography is a concept which provides some sort of security enhancement that ensures the authentication and the availability of data integrity with confidentiality. Certain algorithms are used for ensuring an increase in security such as AES, DES, and Blowfish. Experimental results are computed and analyzed to level up the performance using cryptographic algorithms. Results are shown in order to assure resistance among the above techniques. Choosing an apt algorithm will quench the requirements of the future.

Keywords: AES (Advanced Encryption Standard), DES (Data Encryption Standard), Blowfish, Cryptography, Confidentiality, Integrity of data.

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170.

Authors: **Mannat Jandial, Sanjeev Gupta**

Paper Title: **Soil Stabilization by using fly ash and Ferric Chloride**

Abstract: The soil is stabilized with fly ash and ferric chloride mixtures in this research paper. The Serviceability of the pavement is very tractable to the soil sub-grade properties. For that reason, a weaker sub-grade can be improved by using the most effective stabilization method. Based on the literature review, stabilization with fly ash activated sub grade has been found to be an effective option for improvement of soil properties. Stabilization of the soil is mostly done in soft soils such as organic soil, clayey peat, silt. Some of the wastes used are fly ash, marble dust, foundry sand, rice ash and so on. These materials not only provide an

alternative to the use of conventional materials but also help control environmental pollution. In many places, the waste is dumped into the open air, which can be very problematic for the people in the area and the workers working in these areas. Using these waste materials not only reduces pollution but also reduces human credibility on natural resources, leading to a more sustainable process of construction. It was found from the literature that the optimum dose of fly ash and ferric chloride revealed essential enhancement in strength and durability characteristics and declination in the swelling and plasticity properties of the soil. Based on that result, it is suggested that a mixture of fly ash and ferric chloride should be take into consideration a workable option for the stabilization of broad subgrades.

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Authors: **Saurav Kumar Verma, C. Vairavel**

Paper Title: **Arduino Powered GPS Motor Vehicle**

Abstract: This whole study helps us in implementing and making an obstacle avoidance car. This robot is a mobile platform robot that navigates through each and every designated waypoints while trying to avoid any obstruction which comes in the way of the vehicle. We can move the vehicle from one point to another with the help of designated waypoints. This car is based on commonly used RC cars and are made with some modifications and advancements. We can do potential future enhancements by adding a SD card for logging GPS track. We can also add a camera for taking photos and videos. The arduino board acts as a controller which help us to control the speed and change the speed. It also controls the steering of the car to achieve automatic obstacle avoidance. The vehicle's speed is controlled with the help of pulse wave modulation (PWM) provided to us by the Motor shield. GPS helps us in providing global coordinates of the current location that where the vehicle is present in real time and it also tell us that where that vehicle is heading towards. With the combination of hardware and software we can easily navigate the vehicle and guide it towards right direction.

982-986

Keywords : Arduino Car, obstacle avoidance car, Ultrasonic sensors

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Authors: **Ravi Pandit, Saumya Chaturvedi**

Paper Title: **Mobile Learning: Detrimental or Beneficial?**

Abstract: Mobile Learning also known as mLearning, is a new generation of learning where content which users wants to learn is accessible and available on mobile devices like smart phone and tablets. With the evolution of "world in the pocket" learning becomes much easier and one can start learning on the go. This paper illustrates how mLearning could be a better new way to learn and to interact with the learning content provided and how mLearning is proving to be a better alternative to traditional learning. Learning through traditional methods is not helping students to learn and gain new knowledge wherever and whenever they want and also it's not that effective. It is also researched that not all mLearning applications are helpful for the students or learners to learn whatever they want, only apps with interactive and user-friendly user interface were found helpful. That's why mobile learning applications are made with user-friendly user interface. Some practical strategies and methods of implementation of mLearning approach despite of its limitations and challenges were recommended in this paper as well.

986-989

Keywords: Mobile Learning, affect, interaction, research, traditional learning.

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173.

Authors: **Mohammad Nazim, Mohd. Alam, Sitesh Kumar Singh**

Paper Title: **Parking Space Efficiency Monitoring Near Metro Stations in Noida**

Abstract: This Study was based on data collection and calculation of the parking statistics such as occupancy, accumulation, parking volume, duration of parking, parking load. The study was performed in Noida of Gautam Budh Nagar which includes three parking's. The two were for NA staff parking (two and four wheelers), and third for auto rickshaw stands. The parking data was collected by license plate method for five days and statically analyzed for off street parking. After the analysis it was found that the overall average parking efficiency of comes out to be 68.75 %, 65.22% and 69.22% for parking- 1, parking- 2 and parking- 3 (auto stand parking) respectively. It was found that efficiencies for all the parking were more than 65%. This concluded that these parking can be considered as satisfactory parking.

Keywords : Occupancy, Accumulation, Parking Volume, Parking Load, Efficiency

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174.

Authors: **Omar Ahmed, Sangeeta Gupta, Mohammed Hasibuddin**

Paper Title: **Truth Discovery in Big Data Social Media Sensing Applications**

Abstract: detection of truthful information amid data provided by online social media platforms (e.g., Twitter, Facebook, Instagram) is a critical task in the trend of big data. Truth Discovery is nothing but the extraction of true information or facts from unwanted and raw data, which has become a difficult task nowadays in today's day and age due to the rampant spread of rumors and false information. Before posting anything on the social media platform, people do not consider fact-checking and the source authenticity and frantically spread them by re-posting them which has made the detection of truthful claims more difficult than ever. So, this problem needs to be addressed soon since the impact of false information and misunderstanding can be very powerful and misleading. This mission, truth discovery, is targeted at establishing the authenticity of the sources and therefore the truthfulness of the statements that they create without knowing whether it is true or not. We propose a Big Data Truth Discovery Scheme (BDTD) to overcome the major problems. We have three major problems, the main one being "False information spread" where a large number of sources lead to false or fake statements, making it difficult to distinguish true statements, now this problem is solved by our scheme by studying the various behaviors of sources. On Twitter for example rumormongering is common. The second problem is "lack of claims" where most outlets contribute only a tiny small number of claims, giving very few pieces of evidence and making it not sufficient to analyze the trustworthiness of such sources, this problem is addressed by our scheme where it uses an algorithm that evaluates the claim's truthfulness and historic contributions of the source regarding the claim. Thirdly the scalability challenge, due to the clustered design of their existing truth discovery algorithms, many existing approaches don't apply to Big-scale social media sensing cases so this challenge is managed by our scheme by making use of frameworks HTCondor and Work Queue. This scheme computes both the reliability of the sources and, ultimately, the legitimacy of statements using a novel approach. A distributed structure is also developed for the implementation of the proposed scheme by making use of the Work Queue (platform) in the HTCondor method (maybe distributed). Findings of the test on a real-world dataset indicate that the BDTD system greatly outperforms the existing methods of Discovery of Truth both in terms of performance and efficiency.

999-1004

Keywords: Big Data, Rumors, Scalable, Social Media, Truth Discovery, Twitter.

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175.

Authors:	**Anusha Kailas Kogta.**
Paper Title:	**Cross Platform Application for Canteen Food Ordering System**

Abstract: Presently practically all Canteen across different colleges follow an extremely essential paper based or token-based framework to take orders from their staff/students. To make the framework increasingly productive and blunder free Canteen Automation System with cross stage application is proposed. The proposed application can be utilized by staff/students to put orders from anyplace independent of the stage on their gadgets. It empowers the clients to enlist on the web, see and select food things from the accessible menu and request food by simply choosing the food that the client needs to have utilizing the application in simple manner. The backend database will be refreshed subsequent to choosing the ideal food item from the menu card and it will be shown straightforwardly on the dashboard screen. The user will have a username and a secret key, by utilizing which he/she can sign in to the framework. Installments for the requests put should be possible online through the application. When the food is prepared the users will get a warning about the equivalent. The novel application decreases time utilization, administrative work, and human blunders as it is completely automatize. The online food requesting application sets up a food menu on the web and clients can undoubtedly put in the request according to their desire. Likewise with a food menu, clients can without much of a stretch track the requests. This application additionally gives a criticism framework where client can rate the food things. Additionally, the proposed application can suggest food, in view of the appraisals given by the client, the staff will be educated for the enhancements alongside the quality. The installment can be made on the web or pay-on-conveyance framework. For more made sure about requesting separate records are kept up for every client by giving them an ID and a secret key.

Keywords: Cross-platform application; Flutter; Android app, AES.

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176.

Authors:	**G Kishan, B.V.S. Rao**
Paper Title:	**Mathematical Modeling and Analysis of Hoop Stress in Hydroforming Deepdrawing of n-sided Polygonal Cup**

Abstract: The main objective of this paper presents the analytical evaluation and mathematical modelling of hoop stresses of aluminium 7075 alloys in hydro forming deep drawing of n-sided polygonal cup. It is very important to find the magnitude of these stresses generated within the flange region during the deep drawing

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process for various n-sided polygonal cups. In the flange region two types of stresses will be generated. When is radial tensile stress, it is taking place radially outward direction from the side of the cup to outer side of the blank material. and other is hoop stress it is compressive. It is perpendicular to the radial lines drawn from the job axis to the side of the blank. It is also parallel or tangential to the blank circumference. These two stresses will be generated within the blank material by the application of punch force.. As compared to the conventional deepdrawing process, hydroforming is very convenient. uniform deformation of the blank taking place throughout out the process.

Keywords: Hoopstresses,Hydroformdeepdrawing,n-sided polygonal cup

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177.

Authors: **S.Thulasee Krishna, K. Nagendra Rao, P.Poornima**

Paper Title: **Enhanced Traffic Management System using Artificial Intelligent Congestion Control**

Abstract: The smart city proposed by government is providing better infrastructure with possible automated device. Every smart city proposes to provide smart transport through automated traffic management .The peak hours face the congestion road and many traffic irregularities. The congested road aids in poor Travel experience, environmental pollution and health hazards by vehicular fuel. The solution to aforesaid issues leads to traffic Automation in urban communities. To implement the traffic automation need access to real time traffic congestion information, best possible route and alternate strategy with online traffic information applicable to specific traffic stream. An more suitable site visitors manipulate and MF has been mentioned to finish short information transmission and their corresponding motion performed via artificial intelligence. The VANET scenario, congestion manage algorithm executed through mobile agent controller uniformly organizes the traffic glide by way of heading off the congestion at the smart visitors zone ,The law-enforcement bodies ,the fire opponents and the clinical and/or paramedical teams consciousness on elevated quantity of crime in addition to lifestyles losses through site visitors irregularities. The benefits of adopting the internet of things(iot)provide a new prospect for intelligent site visitors improvement.

Keywords: Intelligent traffic systems, artificial intelligent system, VANET.

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Authors: **Saptarsika Das, Anirban Bhattacharya, Santanu Mondal, Partha Pratim Sarkar**

Paper Title: **Development of Method of Moment Based Programme to Analyze Cross Dipole Frequency Selective Surface and its Verification with Measured Results**

Abstract: Theoretical analysis of frequency selective surface comprising of cross dipole elements has been presented in this paper. Algorithm for theoretical analysis based on method of moment has been implemented by MATLAB programming. Theoretical, simulated and experimental results are compared. Simulated result is obtained by ANSOFT designer version 2.2 software. Experimental result is obtained by standard microwave test bench. Good parity in the results is observed. The presented FSS Structure has relevance in the field of mobile and satellite communication.

Keywords: Cross Dipole, Frequency Selective Surface, Method Of Moment.

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Authors: **Prasanthi Gottumukkala, G. Srinivasa Rao**

Paper Title: **Real and Accurate Clouds Based Fraud Detection Implementation System by using Deep and Machine Learning Techniques**

Abstract: From the last decades deep and machine learning techniques achieves prominent outcomes in various areas like data analytics, big data processing and cloud classifications. Which makes the real time intelligent models, in this investigation proposes a cloud based fraud detection system by using Fully Convolution Neural Networks (FCNN). Along this deep learning, Gradient Boosting Machine Learning (GBML) technology is incorporated, it permits the real time frauds classification and regression on clouds. Our proposed methodology FCNN and GBML compete with existing models in terms of accuracy, recall, true positive rate and precision.

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Keywords: Cloud frauds, GBML, FCNN, credit card frauds.

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Authors: **K Murali Gopal, Pragnyaban Mishra, R. P. Singh**

Paper Title: **Enhancement of Classification using FPFF-ANN for Big data Analysis in Distributed Environment**

Abstract: The development of massive amount of information from any source of group at any time, wherever and from any device which is termed as Big Data. The age group of big data becomes a dangerous challenge to grip, take out and access these data is short length of time. The detection of everyday itemsets is an significant issue of data mining which helps in engendering the qualitative information for the business insight and helps for the verdict makers. For the extracting the necessary itemsets from the big data a variety of big data logical techniques has been evolved such as relationship rule mining, genetic algorithm, mechanism learning, FP-growth algorithm etc. In this paper we suggest FP-ANN algorithm to promote the FP enlargement calculation with neural networks to maintain the feed forward approach. The recommend algorithm uses the Twitter social dataset for the collection of frequent itemsets and the proportional analysis of this approach is done using the different performance measuring parameters such as Precision, Recall, F-measure, Time complexity, Computation cost and time. The simulation of proposed work is done using the JDK, JavaBeans, and Wamp server software. The experimental results of projected algorithm gives better results in deference of time difficulty, computation cost and time also. It also gives enhanced results for the Precision, recall and F-measure.

Keywords: Big Data Analytic, Genetic Algorithm, FP-Growth, Association Rule, Neural Network, Precision, Recall, F-measure.

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