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Dr. S.N. Ramaswamy  
Professor, Department of Civil Engineering, Kalasalingam University, (Krishnankoil) India.
Abstract: Study of Climate change effect on water resources is very important for its effective management. Projection of temperature and precipitation can be performed by using General Circulation Model (GCM) outputs. GCM can make the projections of climate parameters with different emission scenarios at coarser scale. However hydrological models require climate parameters at smaller scale Downscaling technique is used for obtaining small scale climate variables from large scale variables of GCM outputs. In this study downscaling has been carried out by using Multiple Linear Regression (MLR) and Artificial Neural Network (ANN) techniques. Performance of MLR and ANN models has been evaluated considering Coefficient of determination value (R2). It has been observed that ANN performs better against MLR Model, showed the results that rainfall distribution pattern is varied, in monsoon season rainfall decreases while it increases in post monsoon period. Due to its good evaluation performance such techniques can be applicable for downscaling purpose.

Keywords: Artificial neural network, General Circulation model, Multiple linear regression, Upper Bhima Basin

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Abstract: This Raspberry Pi Single-Board Computer-Based Diabetic Retinopathy (DR) and Diabetic Macular Edema (DME) Classification System using Deep Convolutional Neural Network through Inception v3 Transfer Learning and MATLAB digital image processing paradigm based on International Clinical DR and DME Disease Severity Scale with Python application, which would capture the image of the retina of diabetic patients to classify the grade, severity, and types of DR; and the grade of DME without using dilating drops. It would also display, save, search and print the partial diagnosis that can be done to the patients. Diabetic patients, endocrinologists and ophthalmologists of one of the medical centers in City of San Pedro, Laguna, Philippines tested the system. Obtained results indicated that the classification of DR and DME, and its characteristics using the system were accurate and reliable, which could be an assistive device for endocrinologists and ophthalmologists.

Keywords: Diabetic retinopathy, diabetic macular edema, deep convolutional neural network, digital image processing, transfer learning

References


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Authors: Sunay Dhawadkar, Sarvesh Harmalkar, Chinmay Nazgarkar, Vivkanand Tendulkar

Paper Title: Surveillance FPV Drone with Obstacle Avoidance System

Abstract: The unmanned air vehicle (UAV) is mostly used in inspection and surveillance operations recent. The UAV is also termed as vertical take-off landing (VTOL), since it is capable of vertical take-off and landing without need of a runway. The big tunnels, infrastructure and large bridges are inserted using UAV by photographic inspection. UAVs are also used for surveillance purposes by the military and by the security guards. Since this is a new technology of the last decade, deep research has to be done. UAVS have the cross structure arrangement to which the rotor blades are attached at the end points of cross beams. These rotors are driven by the DC brush motors and motors are powered by the lithium ion rechargeable battery. The working principle of quad-rotors is the same as the chopper by controlling the rpm of each rotor blade, due to which the gyroscopic torque will act and the vehicle will move in the desired direction. To hold the quad-rotor at a stationary position at some height constant rpm of all rotors has to be maintained. This signal is given by the controller from some distance, which is received by the, and then it processes the signal and drives the motor via the flight controller and drives the rotors. A quad-rotor is equipped with a high quality camera for photography and video shooting during surveillance. Since a quad rotor is manoeuvring in air, the wind may exert a drag force and take it along with it and the quad rotor may hit any obstacle or inspection objects. To avoid this, it is equipped with the ultrasonic sensors which is capable of sensing the obstacle and realize collision avoidance between wall or any object.

Keywords: About four key words or phrases in alphabetical order, separated by commas.

References:

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Authors: Swetharani K, Vara Prasad

Paper Title: Design and Implementation of an Efficient Rose Leaf Disease Detection using K-Nearest Neighbours

Abstract: Plants are prone to different diseases caused by multiple reasons like environmental conditions, light, bacteria, and fungus. These diseases always have some physical characteristics on the leaves, stems, and fruit, such as changes in natural appearance, spot, size, etc. Due to similar patterns, distinguishing and identifying bacteria, fungi, and fungus. These diseases always have some physical characteristics on the leaves, stems, and fruit, such as changes in natural appearance, spot, size, etc. Due to similar patterns, distinguishing and identifying various factors in preventing loss in the outcome of the proposed study justifies the scope of the proposed system in terms of accuracy towards the classification of different kind of rose plant disease.

Keywords: Plant Disease, Rose, Machine Learning, KNN, Classification.

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Authors: Mukhidinova Firyuzu Abdurashidovna, Mukhamedov Xaidarali Melievich

Paper Title: Improving the Legal Framework and Social Policy in the Context of a Pandemic

Abstract: The article examines the essence of social policy in the field of support in the context of a pandemic. The analysis of the situation in the social sphere and its structural components in the Republic of Uzbekistan in the context of the pandemic is given. It is proposed to improve the legislative framework for improving social protection and living standards of the country's population, as well as to modernize the system of state guarantees in the social sphere.

Keywords: law, the right to the protection of social sphere, social policy, situation, employment, strategy, development)

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7. 7. Decree of the President of the Republic of Uzbekistan dated April 23, 2019 "on additional measures to further strengthen guarantees of the rights of the child" dated February 11, 2019

Authors: Jolan Baccay Sy, Marlon Gan Rojo, Eunelfa Regie Calibara, Alain Vincent Comendador, Wubishet Degifie

Paper Title: Multi-Station Automated Hand Washing System (MSAHWS)

Abstract: The paper presents a design and development of a multi-station automated hand-washing system (MSAHWS) that could be integrated into overall solution strategies for combating the threat of SARS-CoV-2 infections and minimizing the health and economic devastation the virus spread can inflict. The researchers seek to create a system that uses a single micro-controller and caters to several users, each of them being served independently of each other. The MSAHWS development follows a four-part methodology: formulation of the sanitary, operational, manufacturing and economic requirements; design, modeling, and simulation of the micro-controller-based control system; MSAHWS hardware prototype development; and system test and data collection. The MSAHWS design and development focuses on a double-station system that uses a single Arduino Uno, an ultrasonic sensor for each station, 4 FET’s, 4 liquid pumps, a water tank, a soap reservoir, a power supply and a frame to house the system. The non-contact system eliminates possible viral transmission from one person to another via the hand washing machine yet ensures the required cleanliness of the hands. The system is first simulated in PROTEUS to test its functionality and responses based on the demanded or required criteria. A prototype is then built to test and verify the system’s actual operation and responses and thence to make the necessary adjustment of parameters to realize an acceptable performance level. Tests show that all the requirements are met. Photos of the built and tested prototype, a diagram of the initial system design concept, a screen capture of the control system software model, a schematic diagram of the control system, a sketch with dimensions of the hand washing machine frame or housing, and the flowchart on which the Arduino script is developed. The operation and user-­interaction of the actual system is also described. The control system program is written such that the resulting hand washing activity complies with the WHO
standard on hand washing duration and makes entirely possible a complete and hygienic hand washing activity with soap and water. The system is envisioned for strategic deployment in public and private areas like public markets, banks, hospitals, schools, offices, residences, and many others. The paper has shown that it is possible to control multiple hand washing stations, each acting independently of each other, using a single microcontroller and a proper control system programming.

Keywords: Arduino Automated System, Covid19, Handwashing, Hygiene, Proteus.

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Authors: Ajendra Kumar, Preet Pal Singh, Dipa Sharma, Pawan Joshi

Paper Title: Utilization of Grid Neural Network Model and RT-PCR test to detect the COVID-19 Patients and to avoid the Spreading of SARS-CoV-2

Abstract: In December 2019, a new virus, also named a novel coronavirus, started as an emerging pathogen for humans and resulted in a pandemic. World Health Organization (WHO) called this novel coronavirus as COVID-19 on 11 February 2020, and the virus responsible for causing COVID-19 is SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2), which is a positive-stranded RNA virus. This paper proposed an artificial neural network model in a grid computing system to identify COVID-19 patients. It can help us to identify the suspected patients and shortlist those patients who need to check by the RT-PCR test kit. The purpose of this research is to increase the time efficiency to test those patients, which has a higher chance of getting affected by COVID-19. Increasing the time efficiency in this type of pandemic situation can make a huge impact on reducing the fatality rate. This is because, according to ICMR, 1,191,946 samples have been tested as of 5 May, and 46,433 individuals have been confirmed positive. It means that only 3.85% of persons get positive results and 96.15% persons with a negative result. It implies that the time to test this 96.15% of cases is wasted. Hence we aim to detect the COVID-19 patients in less time and utilize this large amount of time to test those at higher risk of being affected by this epidemic (COVID-19). This model will also help those countries to overcome the problem of the shortage of this type of test kits such as - RT-PCR.

Keywords: Artificial Neural Network (ANN), Grid Computing, SARS-CoV-2, Reverse Transcription Polymerase Chain Reaction (RT-PCR) test.

References:


Authors: Ajijur Rahman, Shanowaj Choudury

Paper Title: Abstraction, the Big Idea, and it's Significance in Science and Technology Education

Abstract: this paper discusses the role of abstraction in science and technology education. It starts with a humble introduction of abstraction in general, while discussing the first few encounters of a learner with this idea. Significance of abstraction and the required motivation level of learner are also discussed. An expected change in the attitude of a learner at transition to higher studies is proposed. Thereafter the contribution of abstraction in the evolution of Computer Science and Engineering is discussed in some detail. Moreover a deduction of the Computer Science Curriculum is also shown along the same line as its evolution. Finally the paper concludes with emphasizing the importance of understanding links between different layers of abstractions.

Keywords: abstraction, computer science, learner, link

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Authors: P. Ramakrishna, T. Vamshika, M. Swathi

Paper Title: Fpga Implementation of Memory Bists using Single Interface

Abstract: The development of IC integration technologies leads to an extensive use of memories and buffers in different memory intensive applications. Therefore, probability of occurrence of fault in every single read and writes operation is increased in Memory BIST (MBIST). There were many testing approaches that were developed for efficient testing and diagnosis of fault. However, all algorithms are not strengthened enough to detect all possible faults that may be present due to fabrication errors or environmental disturbance. Keeping this in mind and taking the possibility of development of efficient algorithm a hybrid memory testing algorithm is presented. To overcome those drawbacks, pipelining based MBIST designed to detect the all the types of memory faults by utilizing March-C testing algorithm. By introducing the Pipelining approach, majorly path delays are reducing. The proposed architecture designed and verified using Xilinx ISE environment under various testing methods with respect to the different category of memories. The simulation and synthesis results shows that the proposed method shows the enhanced performance with the hardware resource utilization and delay consumption compared to the conventional approaches.

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Keywords: DFT, MBIST, PRPG, RAM, SOC, VLSI

References:

Authors: V. V. Mandhare, D. R Pede, P. S. Vikhe

Paper Title: Network Intrusion Detection using a Deep Learning Approach

Abstract: At present situation network communication is at high risk for external and internal attacks due to large number of applications in various fields. The network traffic can be monitored to determine abnormality for software or hardware security mechanism in the network using Intrusion Detection System (IDS). As attackers always change their techniques of attack and find alternative attack methods, IDS must also evolve in response by adopting more sophisticated methods of detection. The huge growth in the data and the significant advances in computer hardware technologies resulted in the new studies existence in the deep learning field, including ID. Deep Learning (DL) is a subgroup of Machine Learning (ML) which is hinged on data description. The new model based on deep learning is presented in this research work to activate operation of IDS from modern networks. Model depicts combination of deep learning and machine learning, having capacity of wide range accurate analysis of traffic network. The new approach proposes non-symmetric deep auto encoder (NDAE) for learning the features in unsupervised manner. Furthermore, classification model is constructed using stacked NDAEs for classification. The performance is evaluated using a network intrusion detection analysis dataset, particularly the WSN Trace dataset. The contribution work is to implement advanced deep learning algorithm consists IDS use, which are efficient in taking instant measures in order to stop or minimize the malicious actions.

11. Keywords: Intrusion Detection System (IDS), Non- Symmetric Deep Auto-Encoder (NDAE), Deep Learning (DL), WSN Trace, Machine Learning (ML).

References:
Abstract: Streptomyces, isolated from marine and estuarine habitat have been widely recognized as a potential source of antifungal, anti-tumour, anti-bacterial compounds. In the present study, the antimicrobial agent production potential of a Streptomyces cinereoruber sp was evaluated. The selective isolation of the strain was carried out on starch casein agar. The primary screening of the Streptomyces isolate was done by cross potential source of antifungal, anti-bacterial compounds. In the present study, the antimicrobial agent production potential of a Streptomyces cinereoruber sp was evaluated. The selective isolation of the strain was carried out on starch casein agar. The primary screening of the Streptomyces isolate was done by cross potential source of antifungal, anti-bacterial compounds.

Keywords: Streptomyces, Antibacterial, Optimization

References:


**Authors:** P.Pitchaipandi, C.Baskaran  
**Paper Title:** Use of Web 2.0 Social Networking Sites for Collaborative Sharing Research Information by the Social Science Research Scholars at Alagappa University, Karaikudi.

**Abstract:** This study attempts to the Web 2.0 Social Networking Sites for Collaborative Sharing Research Information by the Social Science Research Scholars at Alagappa University, Karaikudi. A sample size 97 Scholars was selected by random sampling method. The data required for the study were collected through a questionnaire. The findings of the study: 30.9% of the respondents using Facebook/ WhatsApp along with most highly used in the popular web browser used for Google chrome 72.2% Google chrome. 48.5% of respondents’ preference of “Very Strongly Agree” Collaborate with Research projects and Teams. Whereas 46.4% “Research Collaboration “Strongly agree” of the respondents respectively. 30.9% purpose of Web 2.0 for Collaborations of Research Communication while 19.6% Opportunities and Learning for Web 2.0 tools support social interaction in the learning process of the respondents respectively.

**Keywords:** Web 2.0 tools, Collaborative learning, Sharing Research Information, Web 2.0 Opportunities, Blog/Wiki articles.

**References:**

**Authors:** Pankaj Agarwal, Sapna Yadav, Juhi Chaudhary  
**Paper Title:** How India and its Neighbors are doing during Covid-19 Pandemics- a Critical Analysis

**Abstract:** The prime objective of this work is to understand how India & its neighbors are doing during the ongoing period of Covid-19 pandemics. We have used the web crawlers to find specific data of India from official website www.mohfw.gov.in. We also referred to a dataset of global cases from Gitub for our work. We have analyzed the covid19 cases from 22/1/2020 till 1/5/2020. We applied a time series prediction model to forecast the possible deaths for next five days. We have taken into account six of our neighbors excluding China to understand how India is doing in comparison to our neighbors. We observed that considering the size of India population India has done fairly well. However the number of increasing cases in India particularly in the month of May needs a serious call from Indian Govt. We have presented the outcomes of our work through different kinds of comparisons & analysis. He have presented the prediction of next ten days for India & its neighbors for the duration 4/5/2020 to 13/5/2020.

**Keywords:** Covid-19, SARIMA model, Prediction Analysis, Time Series, Indian Neighbors

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**Authors:** Carlos I. Poclin Meza, Kevin L. Monteza Corrales, Lenis R. Wong Portillo  
**Paper Title:** Techniques for Malignant Melanoma Diagnosis: A Systematic Literature Review

**Abstract:** Malignant melanoma is the deadliest type of skin cancer. If melanoma detection and diagnosis is performed in its early stages, the probabilities of recovery and survival are higher. Dermoscopy is a manual method which is applied by doctors to diagnose this disease, but it strongly depends on the experience of the specialist who performs this skin assessment. Although, many proposals have been made for automated detection and diagnosis of malignant melanoma based on images processing, there are still improvement opportunities for melanoma diagnosis. This paper aims to identify the current status of the latest researches related to techniques for malignant melanoma diagnosis based on images analysis, considering the three research questions that have been elaborated for the systematic literature review: Q1) Which are the latest methods for
malignant melanoma detection? Q2) Which systems for malignant melanoma diagnosis have been implemented in the last 5 years? And Q3) Which CAD systems for malignant melanoma detection have been developed? Furthermore, a cross-analysis of the outcome was performed. The results propose the implementation of systems using Inception V3 and the classifier Support Vector Machine, which achieved high accuracies in malignant melanoma diagnosis based on images processing.

**Keywords:** CAD systems for melanoma detection, CNN for melanoma detection, Dermoscopic images processing, Melanoma detection, Support vector machine.

**References:**


Abstract: Cataract is a degenerative condition that, according to estimations, will rise globally. Even though there are various proposals about its diagnosis, there are remaining problems to be solved. This paper aims to identify the current situation of the recent investigations on cataract diagnosis using a framework to conduct the literature review with the intention of answering the following research questions: RQ1) Which are the existing methods for cataract diagnosis? RQ2) Which are the features considered for the diagnosis of cataracts? RQ3) Which is the existing classification when diagnosing cataracts? RQ4) And Which obstacles arise when diagnosing cataracts? Additionally, a cross-analysis of the results was made. The results showed that new research is required in: (1) the classification of "congenital cataract" and, (2) portable solutions, which are necessary to make cataract diagnoses easily and at a low cost.

Keywords: Cataract Diagnosis, Image Processing, Ophthalmology, Machine Learning Techniques, Deep Learning Techniques.

Authors: Anshu Parashar, Anand Kumar Pandey, Ritesh Kumar Rai

Paper Title: Placement of PV Units Considering Uncertainties of Generation and Load in Distribution Systems

Abstract: In conventional power system the transmission and distribution (T&D) losses is a major concern. Renewable energy resources placed at load centers can reduce the T&D losses. For power system planners and researchers it is essential to find the optimal size and position of renewable energy resources to be place in distribution networks. Renewable energy source such as solar energy is abundantly present in the environment.
With the help of solar photovoltaic (SPV) system solar energy can be converted to electrical energy. Placement of SPV in distribution system is an interesting area for researchers and planners, the random placement of SPV in distribution system leads to more power losses and poor voltage profile. In this article mathematical modelling of time varying nature of SPV and variable load has been explained and particle swarm optimization (PSO) method is proposed to find the best size and location of the SPV system. This method is tested on IEEE 33 bus system. For the validation of result existing technique based on analytical expression is selected. It is found that PSO gives better result in compare to analytical method.

**Keywords:** Solar photovoltaic system, Multi-objective index, Time varying solar irradiance, Power system optimization, Particle swarm optimization.

**References:**


**Authors:** P.Sivasankaran B.Radjaram, K.Karthigayan

**Paper Title:** Maximizing Machine Capacity by Improving Efficiency using Linear Programming Model

**Abstract:** In the global manufacturing system, machine performance is considered to be one of the vital role in organization wellbeing. In specific analysing the capacity utilization of machines in each shift is a big challenging job in industrial organization. The primary importance is keeping the machines in uptime condition at the same time loading the jobs in machines decides the capacity usage of machines to do the useful jobs. In this paper focus is made on the capacity planning of machines in production shift. Capacity utilization measures the actual capacity of machine with respect to the potential output within a specific period. In real situations if the demand for the product increases the production capacity also increases but at the same time if the demand falls capacity will also become very low. Hence in this work attempt has been made to develop a mathematical model for machine capacity planning using linear programming model solved by using LINDO software.

**Keywords:** Capacity utilization, uptime, LINDO, Linear Programming

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5. Modellerinin Kullanımı: Bir Üretim işletmesinde Uygulama. Yüksel Lisans Tezi, NÜ Sosyal

19. Referanslar
Abstract: In the present study the existing direct evaporative coolers (DEC) is modified in such a way that DEC consume less amount of water and provide better cooling effect. In desert area, water consumption by air cooler is a serious problem. Therefore, the present study addressed this issue and primary objective of the study is to minimize the consumption of water. For this purpose, the property of the endothermic reaction is utilized. There are few salts that produce endothermic reaction if it is diluted in water. Those salt crystals absorb heat from the surrounding environment (water) and ultimately the temperature of the overall solution gets reduced. This cold solution is then passed through honeycomb cooling pad, as a result more amount of air can be cooled using the same volume of water as compared to the traditional air-cooler. Ammonium Chloride (NH4Cl), Ammonium Nitrite (NH4NO3), NH4Cl, and NH4ClO4 salts satisfy the basic criteria for the endothermic reaction but NH4Cl will be more useful to use in the air-coolers, as Ammonium Nitrite is costlier and also hazardous. A salt water separator arrangement also attached with modified air-cooler which will help to regenerate Ammonium Chloride crystal from solution with the help of solar energy. In this study, firstly discussed about proposed design of an air-cooler system, which is able to nicely handle chemical solution. Then compared the study with experimental outcome which have been carried out with and without using salt. From the result it has been observed that modified design of air cooler has great potential to improve the traditional air cooler in terms of cooling effect and water consumption.

Keywords: direct evaporative cooler; NH4Cl; honeycomb cooling pad; modified air-cooler design.

References:
technique to reduced indoor temperature in non-conditioned buildings of hot-dry climate.

**Keywords:** Fourier admittance method, Heat Gain, Hot-dry climate, Thermal comfort, Simulation.

**References:**


**Authors:** Alfonso Alexander Ruesta Sedano, Jeanette Giuliana Gamarra Herrera, Lenis Rossi Wong Portillo

**Paper Title:** Techniques for Images Processing, Factors and Results of Colposcopy to Diagnose Cervical Cancer

**Abstract:** The colposcopy is a test that is performed if you have relateded symptoms with cancer or if the result of Pap smears test gives an abnormal cells; however, it has a continue problem because there are few doctors who know about colposcopy and it leads to misinterpretation. Therefore, in the last years various proposals have emerged to solve this problem. The present study aims to identify the current state of the latest research related to the detection of cervical cancer during the colposcopy test using the image evaluation. A framework is proposed based on 3 research questions: (1) What techniques are used for image processing to diagnose cervical cancer? (2) What are the factors that help diagnose cervical cancer during colposcopy? And (3) What results corroborate or provide the diagnosis produced by the colposcopy test in the detection of cervical cancer? One of the results proposes that the use of Convolution Neural Network (CNN) improves the sensitivity of the diagnosis of cervical cancer, since it achieved greater precision in colposcopy image processing. Furthermore, the diagnosis can be corroborated with the “results” of the “Biopsy” and “Expert Judgment”.

**Keywords:** Colposcopy, Colposcopy techniques, Colposcopy image, Convolutional Neuronal Network.

**References:**


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International Agency for Research on Cancer, “Cancer Today” 2019. [Online]. Available: https://gco.iarc.fr/today/online-analysis-multi-bars?v=2018&mode=cancer&node_population_countries=population=900&populations=900&key=total&sex=2&cancer=39&type=0&statistic=5&prevalence=0&population_group=0&ages_group=5%5D=0&%5B5%5D=17&nb_items=1&group_cancer=1&include_nmsc=1&include_nmsc_other=1&type_multiple=%257B%2522inc%2522%253Afalse%252C%2522mort%2522%253Atrue%2522%2522bottom%2522%253Afalse%2527%25D&population_group_elobocan_id=1474923680[Last access: october 2019].


Authors: Mohanapria M K, Rajambal K

Paper Title: Switched-Capacitor based Quadruple Boost 9-Level Inverter Topology with Multicarrier PWM Technique

Abstract: This paper presents Switched-Capacitor based Quadruple Boost 9-Level Inverter topology which possesses several advantages over conventional MLI types, SCMLI topologies. The self-voltage balancing capability of switched capacitors which reduces complexity in control is compared with existing SCMLI topology. The simulation study of the SCQB9LI topology is carried out. Switched capacitors are designed for self-voltage balancing nature. The MLS-PWM strategy is employed for generating gate pulses. The performance of the chosen inverter topology is investigated for different modulation indices and its results are presented. A comparative study with conventional SCMLI topologies proves the effectiveness of SCQB9LI topology.

Keywords: Multicarrier Level Shifted Pulse Width Modulation (MLS-PWM) technique, Quadruple Boost, Self-Voltage balance, Switched-Capacitor based Quadruple Boost 9-Level Inverter (SCQB9LI).

References:


Authors: Veena Malik, S. C. Dharmadhikari

Paper Title: Enriching E-Commerce Fraud Detection by using Machine Learning

Abstract: As there has been a proliferation of the internet platform, it has been increasingly getting affordable for a lot of individuals. The rise has been instrumental in achieving several services including the E-commerce platform. This has led to an unprecedented increase in the amount of fraud that is being committed on this platform. The fraud that is being committed on the E-commerce platforms is very different from the frauds committed on other platforms online. Numerous researches have been performed to combat the evils of credit card frauds and money laundering rings. But there is a severe lack of research on the fraud that is committed on the E-commerce platform. Therefore, this research paper defines an innovative approach for the identification of fraud on E-commerce platforms through the implementation of machine learning approaches. The presented technique utilizes Linear Clustering, Entropy Estimation and Frequent itemset mining in addition to the inclusion of Artificial Neural Networks, Hypergraph formation and Fuzzy classification. The implementation of this system will give more security for E-commerce platform-based transactions by identifying fraudulent activities with better efficiency. The methodology has been tested extensively through rigorous experimentation to evaluate the performance metrics which yielded significantly positive results.

Keywords: Linear Clustering, Entropy Estimation, Frequent Itemset, Hyper graph, Artificial Neural Network, Fuzzy Classification.

References:
15. E. Tarmazakov and D. Silnov, “Modern Approaches to Prevent Fraud in Mobile Communications Networks,” IEEE Conference of Russian Young Researchers in Electrical and Electronic Engineering (EIConRus 2018).
Abstract: In a wireless mesh network, the network coding algorithm used to improve network efficiency. In this paper, we have implemented the Q-learning algorithm with CSMA/CA as in distributed co-ordination function along with multi-path transfer protocol (MPTP). The functioning of CSMA/CA is based on physical carrier sensing. Q-learning algorithm, along with network coding, is implemented to achieve better throughput. Our proposed method has used to reduce the packet loss and to minimize the end to end delay of the network communication. Also, it will improve the possibility of receiver buffer blocking.

Keywords: Network Coding, Q-Learning Algorithm, Mptp, Ieee802.11 Dcf.

References:
measures for cervical cancer.

Keywords: Cervical cancer, Cervical cancer diagnosis, Machine learning.

References:

Authors: Rasheed Saleem Ahsed

Paper Title: Al-Hadba Minaret in the Last 100 Years

Abstract: Al-Hadba minaret is located in a central location on the right side of the river Tigris within the city of Mosul North of Iraq. It is one of the important heritage landmarks in Iraq. Mostly characterized by its curvature and height. It was built before more than 800 years. Later, It was destroyed due to military actions in the summer of 2017. Recently plans for reconstruction are going on. Accordingly, many different data has to be collected
and organized to help form a model closer to the original shape. Prior to its destruction, careful surveying was performed to record the shape and movement of the minaret. This research provides a description of the results of this work. For a century, the minaret leaning has been slowly growing closer to the danger point. Modern construction techniques can be used to rebuild a more stable structure and avoid that movement.

**Keywords:** AlHadba minaret, Mosul heritage, leaning, deformation surveying.

**References:**

**Authors:** R.Sravani, P.Deepak Reddy

**Paper Title:** V/C Digital Controlled DC-DC Converter

**Abstract:** In this paper, the switching of dc-dc converter using voltage/current digital control is proposed. It is the combination of existed digital average voltage and digital average current controls. The stability analysis of V/C digital controlled dc-dc converter is derived by using sampled data model. The transient analysis of V/C digital controlled dc-dc converter is also derived by using z-domain small signal model. The proposed V/C digital controlled dc-dc converter has over current protection, fast load transient response, no sub-harmonic oscillations at any value of duty cycle, and wider stability range. The proposed system is analysed with a simple buck converter. The output voltage and inductor current weighting factors influence the stability boundary and transient performances of V/C digital controlled dc-dc converter. The stability analysis and transient analysis is investigated and verified by circuit simulations.

**Keywords:** sampled data modelling, stability analysis, transfer function, transient analysis, z-domain small signal modelling.

29.

167-175
Abstract: Sorting is the process of systematic selection and arrangement. Sorting involves intense labor work. The use of Artificial Intelligence in recognizing the objects by their color makes the process of sorting completely autonomous. Modern Industries require modern solutions for the problems encountered during the process of sorting. With the advent of Artificial Intelligence, the machines that can recognize an object by their color prove to be a primary solution that can completely automate the process of sorting. This paper presents a five-axis arm mounted on a robotic model that makes use of a color sorting technique. It performs pick and place operations in real-time. The color sorting technique detects the color of the object in the frame captured by the camera. The frame size is used to detect the position of the object in the real world. The robot model moves according to the frame size of the object. Raspberry Pi microcontroller drives the servo motor and dc motor to move the five-axis arm and the robotic model to sort and perform pick and place operation based on their color. The color sorting algorithm is based on the Hue-Saturation-Value model. This model finds its application in places where sorting is done based on color and not the object itself. For example, it is used to sort objects like different colored clothes, food items, etc. It also finds its application in very large scale warehouses such as Amazon, Flipkart, etc which focusses on smart automated warehouses that reduce the labor requirements.

Keywords: Microcontroller, Gripper, Servo motors, Webcam, DC motors, Robotic arm, Image processing

References:

Authors: Ponraj A, Aswin Kumar M, Balasubramaniam AS, Giridhar K

Paper Title: Smart Warehouse Governance using AI and Raspberry Pi

Abstract: This article presents a titration project describing the implementation in the rotodynamic equipment of an economical automated temperature module, as a preventive solution for future failures caused by the lack of analysis in the increase or decrease in temperature. The project is currently contextualized in the area of industry, first, providing background to frame the importance of temperature control and measurement and also know what its evolution has been like. Immediately focuses on explaining the theoretical basis for giving context to the reader. For the purpose of detecting the increase or decrease of heat in machinery by implementing a monitoring system. The development of the project is based on the use of an LM35 transistor that connected to an Arduino Uno through various cables, will display the temperature measurement and make interface of the obtained results that will be reflected in a 2x16 LCD screen. The project is applied in a prototype bench in three key parts of the pulley, and in the two bearings to make the simulations, then perform corresponding tests and check that theory. A simple and lower cost system, but above all efficient that meets the expectations of the problem presented.

Keywords: Control, automation, electromechanical failures, Signals, Simulation.

References:

Authors: Alex R Mathew

Paper Title: Threats and Protection on E-Sim

Abstract: Threats involve various risks and threats are associated with the embedded SIM technology, for instance, the Internet of things (IoT) identity. IoT refers to the working capabilities enabling the allocation of unique identifiers (UID) to effectively connect with the related devices thus enhancing communication. An e-SIM application cannot produce reliable and actual data used to obtain the subscriber’s anticipated outcome. The SIM technology does not provide some reliable data that can be employed by the user to formulate some serious productive outcomes. Failure by the technology to process and automatically provide the user with the notification suppose of any infringement or hacking. SIM-jacking is the other notable threats facing the embedded universal integrated connectivity card (e-UICC). Incompetent Log Rhythm AI Engine influences the fraudster hacking experience due to failure protections within the operational surrounding. The e-SIM technology system lacks timely threat, risk, and other various vital operations predictability to react to the experienced unbearable operations challenges induced by the fraudsters. Similarly, the embedded SIM incurs the insider threats whereby the service providers fail to secure the much-needed privacy concerning an individual’s vital information. The situations of personal data leakage are witnessed within the system operations. The e-SIM hijacking enables the fraudsters to secretly obtain the victim’s vital data of the subscriber, hijack, and receive the information intended to the individual to his/her personal phone. The process results to complete mobile account operations by the hacker resulting to further access to the victim’s bank information and transfer of cash. The other threat experienced by e-SIM users is the provision of false information. The SIM subscribers normally fall into traps of the fraudsters by receiving short messages (SMS) citing assistance kind of news from the service providers, thus drawing the victim’s bank amount. Identity fraud and device poisoning are other additional threats encountered in the application of e-SIM. Generally, the entire process of fraud invasion and victimization influence the victim’s business decisions of the affected individuals. Protections focuses on the embedded SIM provides greater security in addition to a re-programmable technological system, unlike the physical SIM card. The subscriber’s personal information is not contained within the e-SIM but with the service providers, thus enhancing its effectiveness. An e-SIM enables the consumers to effectively shift carriers between the T-Mobile and Sprint without physical movement, thus supportive of security systems. Despite the security measures put into place, e-SIM like any other SIM card experiences information theft. Therefore, the service providers should encounter the emerging fraudster effects by proper monitoring of the network system to enable security restrictions. The system should induce strict conditions that enable the evaluation and differentiation between the IoT and the non-IoT devices during their operation.

Keywords: Cellular network, Charging, IoT and non-IoT devices, and Security.

References:
Abstract: Streptomyces, isolated from marine and estuarine habitat have been widely recognized as a potential source of antifungal, anti-tumour, anti-bacterial compounds. In the present study, the antimicrobial agent production potential of a Streptomyces cinereoruber sp was evaluated. The selective isolation of the strain was carried out on starch casein agar. The primary screening of the Streptomyces isolate was done by cross streak method against pathogenic test strains Escherichia.coil MTCC 82, Staphylococcus aureus MTCC 96, Bacillus cereus IP-406 and Salmonella typhi MTCC 734 and Micrococcus leuteus and the antimicrobial property against Micrococcus leuteus was confirmed. The secondary screening was carried out by using the culture supernatant against the test strain by agar well diffusion method. The growth and antimicrobial production ability of the strain against Micrococcus leuteus was studied. The antimicrobial agent production was also observed till pH 11 and NaCl concentration 3% (w/v). The partially purified compound showed a peak similar to streptomycin in HPLC. The culture condition for the production of the compound was optimised.

Keywords: Streptomyces, Antibacterial, Optimization

References:

Abstract: In this paper, a review on the LoRa antenna design for IoT application is studied. The expansion of the Internet of Things (IoT) has led the industry to develop new communication solutions, as current protocols are inadequate in terms of scope and energy efficiency to satisfy IoT requirements. Before studying antenna design, some background LoRa and IoT were discussed at beginning of the paper. LoRaWAN is an open LPWAN standard developed by LoRa Alliance and has main characteristics such as low energy consumption, long-range communication, builtin protection and GPS-free positioning. Besides, a comparison according to the method, resonance frequency, material, size of the antenna and the output is shown in the form of table. In addition, the strength and the weakness of each of the antenna design were discussed before the end of the paper.

Keywords: LoRa, IoT, antenna design, resonance frequency.

References:
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Authors: Susamma Mathew, Garima Saini, S.S Gill

Paper Title: Design of Compact MIMO Antenna for 5G Mobile Terminal

Abstract: This report gives the research work carried out for design and analysis of MIMO antenna using two identical Microstrip slot radiators having enhanced isolation. The slot radiators offer compact size in order to accommodate other electronic components for reduction of volume of the wireless communication system. The defected ground structure is formed on the ground plane in between the antenna elements and feed lines to improve the isolation between them. The substrate used for constructing the antenna is FR-4 having the thickness of 26mm x 22mm x 0.8mm and it has the relative permittivity of 4.4. The printed microfilm strip etched on the opposite side of the substratum is used to couple the signal to each antenna. The HFSS software is used in this paper for designing the antenna and for checking the performance of the antenna. The -10dB bandwidth is 1.1GHz in the frequency range of 3.1 GHZ to 4.2GHz. The maximum isolation obtained after simulation is -23.1dB at 3.13GHZ. The maximum gain of 2.26dB is obtained. Simulated radiation diagram of the designed antenna indicates that it is a good radiator for 5G applications in the sub 6GHz frequency band.

Keywords: MIMO, Microstrip Slot radiators, Reflection coefficient, Isolation, 5G

References:

Authors: Aditi

Paper Title: Health and Housing for Urban Poor in India Post Covid-19

Abstract: The COVID-19 pandemic has built a troublesome new standard for everybody through shelter-in-place systems and physical and social distancing guidelines. Yet for billions of urban underprivileged, certain guidelines aren’t merely troublesome; they’re radically impracticable. Social and physical distancing is a severely significant acknowledgement to the pandemic COVID-19 however, it additionally implies that occupants must have sufficient space, services and social security nets to sustain such an order. It is candidly not the fact over cities in Asia, Latin America and Africa. Health facilities and services are deficient in terms of the transition from state to local level causing negligence of slum areas at global to micro-level. These dwellers of slums area accustomed to unhygienic and un-sanitized environment much on a regular basis. Majority of slums are vastly located near urban centers i.e. in and around in economically less developed countries, experiencing urbanization at a greater rate compared to more developed countries. Many countries often lack the ability to provide infrastructure like roads, affordable housing, basic services like water, sanitation etc., sufficiently for influxing people in the cities due to urbanization creating a big concern for the country. Health policies need to
consider equity and social justice for urban poor in order to equally uplift them in the society. The paper deals with the issues faced by the urban poor in India and the programs and policies that had been issued over time during the past which could not suffice to positively impact the downfalls of these people. The paper also highlights the health conditions of these urban poor and the areas where it has been lacking behind. The pandemic has caused the nation to come to a halt but the urban poor having no such privilege to comply with the situation are forced to thrive in degrading conditions. The research paper will help figure out trigger areas for downfall of these inhabitants of the nation and formulate strategies to counteract the same in post COVID-19 situation.

**Keywords:** Health conditions, Housing, Slums, Urban and rural India urbanization, Urban poor

**References:**
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11. https://shodhganga.inflibnet.ac.in/bitstream/10603/115771/15/15 chapter%208.pdf

**Authors:** Sachchidanand Shukla, Pratima Soni, Naresh Kumar Chaudhary, Geetika Srivastava

**Paper Title:** Development of Low Frequency Small Signal Amplifier using BJT-JFET in Sziklai Pair Topology

**Abstract:** A new PSpice Model of BJT and JFET is proposed and its hybrid combination is used in Sziklai pair topology to design small signal amplifier. The proposed amplifier with maximum voltage gain 30.41, maximum current gain 43.05 and THD 2.44% is capable of amplifying low magnitude signals in a frequency range distributed from 3.035Hz to 93.808Hz. This feature explores the possibility to use proposed amplifier circuit in EEG, seismographs and under water communication circuits. Three different circuit/device combinations are also exposed during the exploration of proposed amplifier and therefore mentioned with primary details. Qualitative behaviour, e.g. temperature dependency, noise behaviour, effect of the variation of biasing resistances and capacitors, small signal AC analysis etc., of the proposed circuit, is also studied to observe its performance under different environment

**Keywords:** Sziklai pair, Circuit Simulation, Small signal Amplifier.

**References:**
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**Authors:** T. Tritha Jyothish Kiran

**Paper Title:** Deep Transform Learning Vision Accuracy Analysis on GPU using Tensor Flow

**Abstract:** Transfer learning is one of the most amazing concepts in machine learning and A.I. Transfer learning is 224-227
is completely unsupervised model. Transfer learning is a machine learning technique in which a network that has been trained to perform a specific task is being reused or repurposed as a starting point to perform another similar task. For this work I used ImageNet Dataset and MobileNet model to analyse Accuracy performance of my Deep Transform learning model on GPU of Intel® Core™ i3-7100U CPU using TensorFlow 2.0 Hub and Keras. ImageNet is an open source Large-Scale dataset of images consisting of 1000 classes and over 1.5 million images. And my overall idea is to analyse accuracy of Vision performance on the very poor network configuration. This work reached an Accuracy almost near to 100% on GPU of Intel® Core™ i3-7100U CPU which is great result with datasets used in this work are not easy to deal and having a lot of classes. That’s why it’s impacting the performance of the network. To classify and predict from tons of images from more classes on low configured network is really challenging one, it’s a great thing the computer vision accuracy showed an excellent vision nearly 100% on GPU in my work.

Keywords: Accuracy, Vision, TensorFlow, Transform Learning, Deep Learning, GPU, Dense layer, ImageNet Database.

References:
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8. nets/mobilenet.

Authors: Md. K.M.Farooqui, K.V.L Somasekhar, D.V.Seshagirirao, P. Nagavsrinivas, S. Durga prasad

Paper Title: Reducing Defects on Cam Shaft by Six Sigma Methodology

Abstract: The efficiency of an IC engine is mainly depends on opening and closing of inlet and outlet valves. The valves are operated by cam shaft. So cam shaft must be free from defects to maintain proper combustion of a internal combustion engine. Thus we are focusing to reduce the defects and improving quality in the manufacturing process and operations of a cam shaft in manufacturing industry for different automotives. In camshaft manufacturing the considerable defects are material selection, changing their mechanical properties while machining, temperature defects, casting defects, tolerances and surface roughness. So manufactured cam shaft can be overcome above defects for safe operating of valves. Six Sigma is a business technique and a methodological principle utilization of which brings about achievement in benefit through quantum gain in item quality, consumer loyalty and efficiency. The goal was to diminish the quantity of deformities to as low as 3.4 parts per million chances. Methodology used: DMAIC is one of the tool of six sigma used to improve the process and also to find root causes for any problem to reduce the defects occurring in any industry. we are using DMAIC tool to reduce defects and improve quality. DMAIC stands for define, measure, analyze, improve, control.

Keywords: Six sigma, DMAIC, defects per million opportunities, control charts, xbar chart.

References:

Authors: Roopa KV, Sanjeev Kumar K.M

Paper Title: “One Tap Shopping”: Impulsive Fashion And Apparel Buying Behaviour

Abstract: Digitalization has transformed brick and motor fashion-oriented business to one tap convenient business through smart phones via mobile applications. The digital age is more inclined towards fashion and apparel due to ample exposure of current trends in fashion industry through internet, social media, travelling, cultural exchange and others. The study emphasized on discovering the online fashion and apparel buying behavior, satisfaction level, and exploring the most influential factors towards the digital consumers for online fashion and apparel shopping by analyzing 256 respondents through convenient and judgmental sampling. Data
is analyzed through Factor analysis and multiple regression. The study reveals that Price sensitivity factors has significant weightage towards online fashion and apparel shopping like flash sales, loyalty programs and points, spike sales- exciting offers on all categories for limited period, cashback offers, Discounts and offers.

**Keywords:** Spike sales, “YAMI”- young – aspirational- mobile native - impulsive action, social engagement, website artistry.

**References:**

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**Authors:** Rubina Jahangir Khan, Raj Kulkarni, Jagannath Jadhav

**Paper Title:** A Machine Learning Approach for Ecg Analysis for Emotions

**Abstract:** Emotions are feelings which one can feel and are hard to be put in a form by a person. However they reflect the mental state of a person. Emotions like joy and sadness can be somehow detected from the facial expressions or through the body language. But these emotions do have an impact upon our system. An individual’s electrocardiogram is a way through which one can know the impact of different parameters such as stress, joy, sadness, anger on the mechanism of our body. The emotions such as anger, sadness have an adverse effect on the cardio system and is seen in the form of abnormal ECG which can be a good pointer to a counselor when finding out the reasons and diagnosis. The decomposition technique along with the Hilbert transform can be used for feature retrieval. The different emotions are detected through the binary classification technique.

**Keywords:** denoised, mean frequency, fission, fusion, decomposition, classifier

**References:**
2. Volume: 2 Issue: 2 Issue: 2 194 – 197

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**Authors:** G Chandhini, B Chithra, P Kiruthikadevi, Bhagya sasi, V. Kamal Kumar

**Paper Title:** IoT Based Underground Drainage Monitoring System

**Abstract:** Underground drainage monitoring system plays an important role in keeping the cities clean and healthy. Compared to other countries, India consists of highest number of sewage workers. Exposure of sewage workers to poisonous gases like hydrogen sulphide, sulphur dioxide, carbon monoxide, methane, ammonia, nitrogen oxide increases the death of the sewage workers. The main aim of this project is to design a network system which helps in monitoring poisonous gases present in sewage. Whenever the gas level crosses the threshold value, the information with different gas ppm values is displayed in the smart phone through the app. It also indicates whether it is safe for the manual scavengers to work in the environment or not.

**Keywords:** Smart phone, IOT, Alarm, Threshold value, Sensors, Application, LED, Sewage system.

**References:**
Authors: Jenifer Mahilraj

Paper Title: Trajectory Based Location Prediction and Enriched Ontological User Profiles for Efficient Website Recommendation

Abstract: The spread over of huge amount of information in the vast area of internet makes difficult for the users to obtain the search items that are relevant to them. The adoption of web usage mining helps to discover the accurate search results that satisfy their requirements. To fulfill their need, it is necessary to know their preferences of search at various contexts. In general, the user profiles are used to determine the taste of the users. The traditional method of user profiling does not provide a complete detail regarding their search. In addition, the search preference of the individuals varies in accordance with time and location. The user profiles do not update the dynamic location changes of the users. The traditional location based recommendation systems suggest the search results based on their location to compensate the dynamic preferences of the users. The drawbacks of the conventional systems are resolved by the Location and User Profile (LUP) based recommendation system. To attain a higher user satisfaction by providing accurate search results, a trajectory based location prediction and enriched ontological user profiles to recommend the appropriate websites to the users is proposed in this paper. In this article, we suggest a novel method for predicting the location of a user's profile using Semantic Trajectory Pattern (STP), based on both the place and semantic features of user trajectories. Our prediction model’s central concept is based on a novel cluster-based prediction approach that evaluates the location of user search data based on the regular activities of related users in the same cluster, calculated by evaluating the typical behavior of users in semantic trajectories. The combination of location information along with enriched ontological user profiles improves the efficiency of the proposed web recommendation system. The experimental results are evaluated using recall, precision and F-measure metrics.

Keywords: Geographic mining, Ontological user profiles, semantic mining, Trajectory pattern mining, Web usage mining.

References:
Authors: Shreerang J. More, Pranav S. Patil, Jitendra M. More, Prayag S. Patil, Satish S. Marathe

Paper Title: IoT based Patient Health Care for COVID 19 Centre

Abstract: In this paper, COVID 19 centre monitoring and management system has been proposed and integration of different sensor network with Internet of Things (IoT). The sensors implemented can communicate with data collection and processing unit. The data collection done by that unit can directly transferred to cloud using internet connectivity at COVID 19 centre. Therefore work aimed to propose COVID 19 centre management with IoT based approach to handle medical services and patient monitoring and treatment work flow. In the experimented model, Node MCU ESP8266 controller and temperature sensor (DHT11) are integrated. A system has capability to monitor and control COVID 19 centre services and patient monitoring via remote connection. It is evaluated with three temperature sensors connected to measure temperature of patients. Mobile based blynk has been utilized for the cloud based IoT implementation. Sensor sends data over blynk server and then can be seen anywhere using smart phone application. In addition, when patient get fever more than regular value, an alert was sent to authority in a quick time. After results, it is indicated that the developed system has effective potential to work in pandemic situation and has technological feasibility. The benefits of implemented research methods are useful in digital health management in pandemic scenario. Even hospitals, COVID centers, intensive care unit (ICU) can be operated effectively and patient diagnosis application based on online database has wide scope in the area of internet of things and patient health management.

Keywords: Blynk, COVID 19, Health Care, IoT, Node MCU, Sensor Network.

References:
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Authors: Chaarumathi P, Divya S.R, Divyajothi R, Mehareethaa K.V, Kamalkumar V

Paper Title: Voice Controlled Fire Fighting Robot

Abstract: Even though there are a lot of advancements in technology, there have been an increased number of devastating losses in the field of fire-fighting. Fire accidents that occur in industries like atomic power plants, petroleum refineries, chemical factories and other large-scale fire industries end in quite serious consequences which can cause injuries or even death of individuals. Therefore, this paper is enhanced to develop an automated fire extinguishing robotic vehicle that saves the lives of firefighters and other persons in those areas. The proposed robotic vehicle is controlled using specified speech commands. The language input is more familiar which makes interaction with the robotic vehicle much easier. The advantages of voice-controlled robots are hands-free and rapid data input operations. The speech recognition process is done in such a way that it recognizes specified commands from the user and the designed robot navigates based on the instructions via the speech commands. The fire can be extinguished using a water tank that is fitted along with the robotic vehicle. Consequently, the site of fire is live monitored using ESP 32 and the status of the fire zone is updated to the user through message.

Keywords: Arduino, ESP32, Fire extinguishing, Live monitoring.

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Abstract: It is evident that laminated reinforced composite are successfully prolonging the life of composites compared to particle and fiber type of reinforced composites method. The question on how this laminated composites take up the fatigue loading is crucial in order to give sound confident to industry replacing their design from metal to composites based. The lack of confident and uncertainties’ life of composites components become an issue to designer to shift from metal based to composites based especially when the design required to be done in short time. This review gives a clear picture the state of fatigue life modelling and the life prediction of laminated composites structures. The types of model are favorable when it is accurate, simple and required less input parameters. In the end, this review gives clear pictures on mechanism that involve and the fundamental of formula that available at present.

Keywords: Fatigue of Composite, Laminated Composites, Modelling of Fatigue Composite, Life Prediction.

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40. Mohd Kairul Faidzi Muhamad Paudzi, Mohamad Faizal Abdullah,


Authors: Durga Pathrikar, V. N. Jirafe

Paper Title: Implementation of Iterative bilateral filtering for removal of Rician noise in MR images using FPGA

Abstract: Magnetic resonance image noise reduction is important to process further and visual analysis. Bilateral filter is denoises image and also preserves edge. It proposes Iterative bilateral filter which reduces Rician noise in the magnitude magnetic resonance images and retains the fine structures, edges and it also reduces the bias caused by Rician noise. The visual and diagnostic quality of the image is retained. The quantitative analysis is based on analysis of standard quality metrics parameters like peak signal-to-noise ratio and mean structural similarity index matrix reveals that these methods yields better results than the other proposed denoising methods for MRI. Problem associated with the method is that it is computationally complex hence time consuming. It is not recommended for real time applications. To use in real time application a parallel implementation of the same using FPGA is proposed.

Keywords: Iterative Bilateral Filtering, MRI, Rician Noise, FPGA

References:

Authors: Baratov Mirodilzhon, Tukhtashev Shikhmatilla

Paper Title: Trends in Development Private Ownership of land and land Parcels in Uzbekistan: Scientific and Theoretical Analysis

Abstract: the article analyzes the stages of privatization of non-agricultural land and the stages of their development. It also analyzed the theoretical aspects and studied the peculiarities of developed countries Peru, Poland, France and the United States in the area of land privatization. In the article recommendations and conclusions on the development of existing legislation were developed based on foreign and domestic experience in land privatization.

Keywords: land plots, privatization of land plots, land of industrial, commercial and service points, auction sale, sale of private property.

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21. According to Article 17 of the Land Code, legal entities must have land plots on the basis of permanent possession, permanent use, term (temporary) use, lease and property rights, and individuals (citizens) must have the right for land plots to inherit, lifelong possession, permanent use, temporary (temporary) use, lease and ownership.
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Authors: Aditya Kaduskar, Omkar Vengurlekar, Varunraj Shinde

Paper Title: RSSI Filtering Methods Applied to Localization using Bluetooth Low Energy

Abstract: Bluetooth Low Energy or BLE is a technology targeting mostly small-scale IoT applications including wearable devices and broadcasting beacons that require devices to send small amounts of data using minimal power. This paper focuses on our implementation, which is a system, designed to filter RSSI (Received Signal Strength Indicator), calculate the co-ordinates of a BLE device that is programmed as a Beacon and display the coordinates. Since RSSI is susceptible to noise and a downgrad in its reliability is unavoidable, several filtration methods have been used. The ‘Kalman – Histogram’ method, which incorporates the usage of a histogram of the RSSI readings along with the Kalman filter, is our own approach to tackle issues regarding noisy RSSI readings. The localization of stationary ‘Assets’, has been evaluated using the Triilateration algorithm: a result in mathematics which is used to locate a single point using its distance from three or more other points. The purpose of this research work is to provide a comparative result analysis of the results obtained using the aforementioned filters, indicating the effect of these filters on our localization system. As our research suggests, the ‘Kalman – Histogram’ filter performs better as compared to other filters and can be used in localization applications for better accuracy.

Keywords: Bluetooth Low Energy (BLE), Raspberry Pi, Localization

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290-299
Students’ Success Predictive Models Based on Selected Input Parameters Set,‖

Abstract: Personalized learning is being popular due to digitizations that enable a large number of technologies to support it. To predict students’ learning abilities, it is necessary to estimate their behavior to know about their weaknesses and strengths. If it is possible for teachers to predict in advance at-risk and dropout students, they can plan more effectively to handle them. We are describing in this paper various intelligent tutoring systems with Educational Data Mining, Predictive Learning Analytics, prediction of at-risk students at an earlier basis, how this prediction task is done. We are describing various prediction models that can be used to predict students’ behavior and how portable these predictive models are and the various risk prediction systems that are being used.

Keywords: Predictive Learning Analytics, Intelligent Tutoring Systems, Student Risk Prediction, Risk Prediction Systems, EDM, Early Warning Systems (EWS).

References:

Authors: Aboli V. Chavhan, Arif Khan

Paper Title: Water Pollution – Sources, Effects and Control

Abstract: Water could be a basic asset inside the lives of people World Health Organization each enjoys its utilization and World Health Organization square measure harmed by its abuse and flightiness (flooding, dry spells, saltiness, causticity, and debased quality). Water could be a limited and weak asset. Thus, utilization of polluted water places lives and jobs in peril because of water have no substitute. There square measure numerous ways during which water implied for human utilization will get debased. These grasp squanders from businesses like mining and development, food process, hot squanders from power creating enterprises, household and agrarian squanders and by shifted microbiological operators. These days, water is being refined by differed ways anyway examination is being led to appear for a great deal of dependable and less expensive ways that may cleanse water at a sensibly worthwhile.

Keywords: water contamination, impact, spillover, control measures, composts
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10. SUGATA SANYAL, AYU TWARI, AND SUDIP SANYAL, “A MULTIFACTOR SECURE AUTHENTICATION SYSTEM FOR WIRELESS PAYMENT”, SPRINGER-VERLAG, 2010

Authors: Ankush S, Vinayprasad M S
Paper Title: Enhance Security for Authentication

Abstract: An enhanced security for authentication is defined because it is vital that authentication is an extremely important crucial robust process for each user to access any of the applications. Magnificent growth and usage of the internet raise agitation about the way to communicate, protect data and sensitive information safely. In today's world hackers use differing types of attacks in order to acquire valuable information. Many of the attacks are primarily used to get into an application to steal the credentials followed by internal information of the users. The first thing of security is defined in three terms. i.e., confidentiality, integrity and availability. Confidentiality can protect information from unauthorized access and exploiting of sensitive data. Integrity measures protect information from unauthorized alteration. Whereas availability so as for a data system to be useful it must be available to authorized users. The most objective of this paper is to supply information about confidentiality in terms of multifactor authentication. Confidentiality plays a serious role in terms of authentication. Authentication is the process of proving or showing to be true. This includes confidentiality and integrity. The improved security for authentication is additionally known for multifactor authentication for the users. This multifactor authentication is implemented for an android application using a visual-picture login technique to access the an application.

Keywords: Multifactor authentication (MFA), One-time-password (OTP), Visual-picture login, Confidentiality, Integrity, Click-points, Coordinates.

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9. DVIYA JAMES, MINTU PHILIP, “A NOVEL ANTI PHISHING FRAMEWORK BASED ON VISUAL CRYPTOGRAPHY”, IEEE 2012
10. SUGATA SANYAL, AYU TWARI, AND SUDIP SANYAL, “A MULTIFACTOR SECURE AUTHENTICATION SYSTEM FOR WIRELESS PAYMENT”, SPRINGER-VERLAG, 2010

Authors: Klodian Gumeni
Paper Title: Analyzing and Solving Stability Problems during the Commissioning of the Steam Turbine

Abstract: The commissioning of the steam turbine in the CCPP of Vlore (Albania) was carried out after a shutdown of about one year. During previous operation of the unit, in particular in a couple of shutdowns, were observed high vibration at bearing MAD 21. Before the restart, the oil deflector of the MAD21 bearing (the bearing located in the front standard, on the inlet side of the steam turbine and adjacent to the clutch) was modified increasing the radial clearance on the part of the oil deflector acting as a thermal shield with the aim of
eliminating / preventing the risk of rubbings. Rubs at the location of the above mention oil deflector were considered as the very likely cause of high vibration at bearing MAD 21. A lot of tests were carried out during the recommissioning phase and the data received were analyzed. This paper details the discovery of the problems, initial attempts to address them and the use of the rotor dynamics tools to find a solution of the problem by the optimization of the bearings.

The bearings were not optimized as per rotordynamics analysis (RDA) findings, because it was a too expensive solution. The solution was found making some modification on control system of the ST, without affecting the mechanical integrity of the machine.

**Keywords:** bearing vibration, critical speed, shut down and start up trends, trip limit.

**References:**

**Authors:** J.Karpagam, P.Bavithra, L.Infranta Merlin, J.Kousalya
**Paper Title:** IoT Based Smart Farming

**Abstract:** Agriculture is the key factor to satisfy the economy of our country and it is one of the basic needs of the human resources. Watering the plants is very important in agriculture. By using recent and current technologies irrigation system can be upgraded with the help of sensors and Microcontrollers. Thus, this irrigation system can be gowned and upgraded into an automated process.

**Keywords:** Irrigation, Water level sensor, GSM Module, Arduino-UNO.

**References:**

54. **Authors:** Kehdinga George Fomunyam
**Paper Title:** Theory or Practice? the Search for Value for Money in Engineering Education

55. **Abstract:** Engineering education was predicated on two sources. One on trade apprenticeship where people that are trained locally under the tutelage of someone are engaged in further studies to broaden their theoretical and practical knowledge. The other source of engineering education was within the four walls of the educational institution which has in its core natural sciences and it emphasizes specialization in a specific aspect of engineering. This study seeks to understand if value for money in engineering education is in theory or practice. Value for money is one of the measures of quality of education. Value for money as a concept that has been defined by various authors and the World Bank defined value for money as the effective, efficient, and economic use of resources, which requires the evaluation of relevant costs and benefits with the assessment of risks and of non-priced items and/or cost of life cycle. The objective of this research is to determine if the search for value for money in engineering education is a theory or practice. Findings from the study revealed that engineering education is one of foundation for the development of the society. By engineering education, the dynamics of life has been influenced and also human culture giving more substance to civilization and politics. It was also found out that value for money is not only a financial marker but it has with it various economic, social, physical dimension. In engineering education costs are expended and this this necessitates the drive for value for money. This study recommends that there is a need for better measures of value for money in engineering education and there is a need to advance knowledge on the theories of engineering to ensure relevance in this changing era.

**Keywords:** engineering, engineering education, value for money, search for value for money, theory, practice.

**References:**
Abstract: Social capital is important as it becomes an imperative as key indices for development and growth of students who opt for engineering education. Engineering educators have important role to play in motivating engineering students with untapped potentials to possess the right capital by creating productive teaching platforms. This paper explored the relationship of social capital on engineering education in addition to students possessing the right capital in their respective course of study. This paper argued that engineering educators should develop students’ social capital within the context of social networks and norms by promoting knowledge-based social capital and its productivity among engineering students. This paper was guided by Social Capital Theory, which emphasises on the views that student learning should be centred on education invested on human capital and social capital. Specifically, we explore engineering students having the right capital in their study and social capital is a quality criterion that enhances students in possessing the right capital to EE in Africa. Thus, to address the social capital gaps in engineering education, it suggested that engineering educational curriculum as well as staff development and capacity building should be designed in developing engineering student to possess the right capital in their field of study. A number of educational-oriented recommendations for social capital in engineering education investment were made.

Keywords: Africa, Curriculum, Development, Engineering Students, social capital

References:
The Fourth Industrial Revolution (4IR) is impacting engineering education (EE) in diverse with several changes from the effects of the previous three industrial revolutions. Remarkable industrialization has been recorded in the fourth industrial revolution. However, certain skill gaps have been identified missing in engineering courses and curriculum as employers seek skills development aligned with the fourth industrial revolution (4IR). This paper was guided by Lifelong Learning Theory which explain that the paradigm shift from the first three industrial revolutions to 4IR has led to EE transformation of acquiring not only technical skills but also soft skills. This has led to critical EE curriculum review to extrapolate its impacts of soft skills on 4IR emerging workforce. This paper takes a broad look at the EE and soft skills in the era of 4IR in Africa, while examining the EE in previous revolutions and, exploring the impacts and implications of soft skills on EE. The possibilities of adequate investments in EE and soft skills programmes becomes an imperative to address skill gaps and prepare engineering graduate students for future work. The importance of soft skills, values, and improvement of soft skills in engineering education in 4IR era are discussed among others. Thus, to address soft skills gaps in EE, industrial cooperation and educational partnership is significant to centre on EE curriculum future-oriented skills development to consolidate with 4IR workforce demands. A number of policy
recommendations for 4IR compatibility with EE polices are made.

**Keywords:** Africa, Curriculum, Engineering education, Soft skills, Lifelong

**References:**
Khedninga George Fonunyam

**Engineering for Survival in Rural Africa in the Era of Covid-19**

**Abstract:** Engineering has been reputed as a discipline that makes things work better. By the ingenuity of engineering, there is the potential to deploy creativity to solve some of the problems of the world and help in shaping the future. Shortly after the novel coronavirus, SARS-COV-2 (2019-NCoV) was initially identified in the Chinese city of Wuhan in a group of patients diagnosed with pneumonia on December 31, 2019, it resulted to fast paced human to human transmission which has generated lots of media stirs and hype concerning issues of public health globally. Corona virus disease 2019 (COVID-19) is a ribonucleic acid virus (RNA) which has the physical appearance of a crown when viewed under the microscope which is as a result of glycoprotein spikes on its envelope. Findings from the study revealed that engineering has great impact on health conditions in rural Africa and the era of COVID-19 brought with it various consequences on the health systems of people. Understanding that there is no known cure for COVID-19 is key and various countries of the world depended on their knowledge and expertise to deal with the disease. This study therefore recommends that there is a need for intensified effort in engineering in rural Africa.

**Keywords:** engineering, survival, COVID-19, corona virus, rural Africa

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**Authors:** Anushree H R, Sowmya B P

**Paper Title:** Ensembled Machine Learning Model for Aviation Incident Risk Prediction

**Abstract:** With the fabulous development of air traffic request expected throughout the following two decades, the security of the air transportation framework is of expanding concern. In this paper, we encourage the "proactive security" worldview to expand framework wellbeing with an emphasis on anticipating the seriousness of strange flight occasions as far as their hazard levels. To achieve this objective, a prescient model should be created to look at a wide assortment of potential cases and measure the hazard related with the conceivable result. By using the episode reports accessible in the Aviation Safety Reporting System (ASRS), we construct a half breed model comprising of help vector machine and K–closest neighbor calculation to evaluate the hazard related with the result of each perilous reason. The proposed system is created in four stages. Initially, we classify all the occasions, in view of the degree of hazard related with the occasion result, into five groupings: high hazard, decently high hazard, medium hazard, respectably medium hazard, and okay. Furthermore, a help vector machine model is utilized to find the connections between the occasion outline in text configuration and occasion result. In this application K–closest neighbors (KNN) and bolster vector machines (SVM) are applied to group the everyday nearby climate types In equal, knn calculation is utilized to highlights and occasion results subsequently improving the forecast. At long last, the forecast on hazard level order is stretched out to occasion level results through a probabilistic choice tree.

**Keywords:** ASRS, KNN, SVM, Decision Tree.

**References:**

**Authors:** Abdul Awwal, Aarish Khan

**Paper Title:** Performance Analysis of a Roundabout and a 3-leg Intersection Under Heterogeneous Traffic

**Abstract:** This paper addresses the analysis of the operational performance of a roundabout and a 3-legged intersection located in quite a busy area of the Aligarh city. The city has an urban population of around 0.9 million people. The roundabout and 3-legged intersection are located in the close proximity of busy commercial areas and schools. Roundabout that has been taken under consideration is un-signalized and 3-legged intersection is priority controlled. The Current study has been undertaken analyze the operational execution of the two intersections and to pave the way for forthcoming investigations related to improvement of the intersections in the Aligarh District region. Traffic data was accumulated on weekdays during peak periods (5:30 pm to 6:30 pm). Video recording was taken in consideration to accomplish this task. The traffic was categorized in 3 classes; light vehicles, heavy vehicles and bicycles. To execute the evaluation of functioning performance of both intersections, SIDRA INTERSECTION software has been used. Results have shown that both the roundabout and 3-legged intersection are operating in an unstable state and roundabout condition is worse than the 3-legged intersection as the heavy vehicle volume influx is quite higher for the roundabout.

**Keywords:** Capacity, Level of Service, SIDRA Intersection, Heterogenous Traffic

**References:**


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Authors: Kenneth Gitonga Ntonja, Geoffrey Muchiri Muketha, Gabriel Ndungu Kamau

Paper Title: Cloud Data Privacy Preserving Model for Health Information Systems Based on Multi Factor Authentication

Abstract: With cloud computing (CC) becoming popular in recent years, variety of institutions, organizations, businesses and individual users are creating interest. They are adopting the technology in order to take advantage of shared web applications, low infrastructure cost, utility and distributed computing, cluster computing as well as reliable IT architecture. In the area of health, Cloud Health Information Systems (CHIS) play a key role not only on the healthcare businesses but patients as well. On the patient side, CHIS aid in sharing of medical data and health information, timely access of critical patient information and coordination of clinical services. Patients, who continue to demand for instantaneous and quality healthcare services are now able to access the services from experts even when they are not necessarily in the same physical location. This is being aided by proliferation of telemedicine through hosted cloud architecture. From the business perspective, CC has helped to cut down operational expenses by way of cost-effective clinical information system infrastructure through the implementation of a distributed platform. The platform has therefore saved businesses millions of dollars that would have gone to infrastructural and human resource investment. Even with these immense opportunities, cloud computing uptake has been serious inhibited by the privacy and security concerns. Due to the sensitivity of personal health information, businesses and individuals are apprehensive when it comes to adopting the technology or releasing the data to the cloud. This study is a results discussion of an enhanced model for attainment of data privacy on the cloud through use of multi factor authentication.

Keywords: Cloud Computing, Health Management Systems, Multi-factor Authentication, One Time Password.

References:


References


Authors:

G Ajay Bhaskar Naidu, Y Avinash Reddy, CH Naveen Chowdary

Paper Title: Design of 5G Mimo Antenna with Enhanced Isolation

Abstract: In this paper, MIMO 2-port, 2-element antenna for 5G applications is presented. This is monopole antenna structure consists of two-rectangular patch of same shapes. Each antenna has a feeding plate connect at the centre of the patch antenna for enhancing the etching of rectangular slots on the ground plane in between the two patches along with thick and sheet of the substrate just below at the centre of the patch. Maximum isolation achieved among the ports is less than -30db, envelope correlation coefficient is below 0.10 in bands of interest. The minimum frequency range covered by the four ports of this antenna is from around 3.0 to 4.0 GHz, thus covering expected future 5G band (3300–3700 MHz).

Keywords: Maximum isolation achieved among the ports is less than -30db.

References:


Robust Watermarking Technique for Sharing Family Photos on Social Media using Aadhar Number and DCT

Abstract: The mind setup of persons has been changed in today’s environment due to the easily available of internet and smart phone on very low-price cost. Smart phone and internet are two main resources which are being used by persons most of the time in his/her daily routine specially in lockdown due to COVID-19. In this lockdown, persons are doing some creative activity, making fun, etc and recording all his/her this personal information in the form of multimedia contents like text, images, audio and video. This created multimedia content is shared by persons frequently on globe through internet in the daily routine life and some other persons are watching this daily routine activity and making huge business with these data by sometimes with original content or sometimes with modified content without concerns/information/permission of the originator. In this process if everything is going in right way then no issues but if something going wrong then require legal issues and for this, we need to protect our data legally through some methodology. So this paper proposed secure watermarking technique for protecting multimedia content like images using Aadhar number and Discrete Cosine Transform (DCT) technique. In this proposed methodology individual can share the information’s with watermarked information which is hidden in shared images and on demand at the time of legal issue originator will show the actuality and its ownership. This paper explained details concepts of the embedding and reverse of embedding (i.e. extracting) process for authentication of the images and its protection from the misuse or fraud. The experimental result of the proposed methodology is shown on different family photos shared on globe and found robust results.

Keywords: Discrete Cosine Transform (DCT), Document Based (DB), Working Domain Based (WDB), Human Perception Based (HPB) and Application Based (AB), Discrete Wavelet Transform (DWT), Intellectual Property Right (IPR), Similarity Ratio (SR)

References:
12. Kittimeth Wattananaphakasem, Ubolrat Wangrakdiskul, Jakawat Deeying

The Effect of Laser Energy and Nitrogen Flow in Solder Joints Properties of Head Gimbal Assembly

Abstract: The objective of this research is to study the effect of laser energy and Nitrogen flow on the solder joints of the Head Gimbal Assembly (HGA). The soldering of the HGA components isn’t the same as general semiconductors. Since the soldering figure perpendicular to each other so that, it was used the laser solder jet bonding system. The solder jet bonding system uses a solder ball consisting of Sn-2.0Ag-0.7Cu (SAC207) is used for connection of the HGA pad made from a Cu trace coated with Au. The growth of intermetallic compounds (IMCs) and shear strength will be analyzed to investigate the effects of laser energy and Nitrogen flow on solder joint reliability. In this research, laser energy levels since 2, 2.5, 3, 3.5, 4, and 4.5 mJ and keep the Nitrogen flow value at 90 mbar. As for the Nitrogen flow effect analysis, the Nitrogen flow level was used at 80, 100, 120, and 140 mbar and keep the laser energy value 3.5 mJ. The results of the study show that the increased levels of laser energy can inhibit the growth of intermetallic compounds as well as the AuSn4 phase that can
present benefit to solder joints with results showing within the shear strength to increase significantly. The increase in Nitrogen flow levels has the same effect as the increase in laser energy levels, which can decreases the growth of intermetallic compounds and AuSn4 phase also including increased shear strength. The difference between laser energy and Nitrogen flow increasing shows the level of laser energy can clearly distinct the effect on each level. But the increase in Nitrogen flow level is statistically insignificant from each level.

**Keywords:** Intermetallic compound, Laser solder jet bonding, SAC solder, solder joints

**References:**

Authors: Pollypriya Buragohain

**Paper Title:** Use of Information and Communication Technology and Product Promotion

**Abstract:** E-agriculture, i.e., Information and communication technology (ICT) in agriculture enriches the agriculture and brings rural development. Due to this upbringing of information and communication technology, agricultural production has increased and also enhancing the market which indicates a complete change of makeovers. Indian farming is revolutionized and all farmers including small landholders are benefited through the use of ICT in agriculture. ICT helps a lot to increase the demand for new perspectives in agricultural field. The present study was basically conducted in Jorhat district of Assam during the time of 2018 and data was collected from 40 farmers through a well structured questionnaire. The main mathematical or statistical tools that have been used in this study are percentages, Likert Scale and measurement of central tendency. The present study tries to analyse the socio-economic characteristics of the farmers who consider or use the information and communication technology in agriculture. This study also focuses on the farmer’s attitude towards using ICT in agriculture and also the frequency of using ICT in agriculture. In this study, it is obtained that there are highest 37.50 percent of farmers are with a land holding of 1-2 ha and highest 40 percent of farmers have 16 to 20 years of farming experience. From the analysis, it is also noticed that majority(4.68%) of farmers strongly agree with the statement that ICT helps in community based planning by providing timely information regarding agricultural field which is followed by the concept of ICTs helpful for reducing the distance in Digital Divide or Technological gap(4.63). With some statements the farmers are strongly disagree or disagree such as ICT helps...
to exchange the opinion, knowledge, experience and also the assets (2.94) and by improving rural livelihoods ICT fill up the social segregation gap (2.15). Again it is observed that to gaining knowledge and information all 40 farmers are using mobile phones as ICT very frequently.

**Keywords:** ICT, Agriculture, Development, Digital Divide, Farmer.

**References:**


**Authors:** P. Oliver Jayaprakash, A K Gunasekaran

**Paper Title:** Theoretical Framework for the Freight Movements Through a Multicommodity Port

**Abstract:** Port based freight movement planning is a complicated task that could be carried out efficiently to handle the cargo, optimally utilize the infrastructure and plan the future infrastructure requirements. The nature of activities at the port is dynamic with uncertainties since the operations are time bound, scholastic and probabilistic. As the huge capital is involved in port infrastructure, the inter-relationship between port activities need to be understood and a system model enveloping the relationship among the variables is much needed for optimal utilization of existing facilities and to predict the future infrastructure requirements. The conventional four step model approach for modeling the person trips would not effectively reflect the commercial scheduling constraints and requirements of freight trips. This research work attempts to model the port operations, to assess the level of service of roads and gate operations as subsystems to understand the interdependencies between the variables and the impact on the port operations as a whole.

**Keywords:** System, Modeling, Multicommodity port, dynamic commodity flow, Turnaround time, Vessel arrival.

**References:**


Authors: Swamy H.C.M, G. Prince Arul Raj

Paper Title: Rheological Behavior of Ordinary Concrete, SCC with and without Glass and Steel Fibers

Abstract: Rheology indicates its flowability and deformation. These two parameters indicate directly workability. It measures the normal and shearing forces in fresh concrete state. In this article the flowability and its measurement are discussed for ordinary and SCC with Glass and steel fibers are demonstrated. The strength parameter for a particular concrete mix is demonstrated with sampling and acceptance criteria. The new draft code on design of concrete mix (IS-10262) verified by compliance with specifications. The different parameters like percentage of Glass and Steel fibers, different percentages of silica fume, and different dosages of superplasticizer are tested and reported. A comparative analysis for, with and without glass fibers on ordinary and SCC predicted.

Keywords: Rheology of ordinary concrete, Flowability of SCC, Workability of SCC with Glass fibers, Rheology of SCC with steel fibers, Sampling and acceptance criteria for SCC, Compliance with specification for SCC.

References:

Authors: Usmanova Murborak Akmalzhanovna, Burkhanhadzhaeva Khurshida Vahdatovna

Paper Title: Social Assistance and Social Services for Citizens during the Quarantine Period from a Pandemic On the Example of Uzbekistan and International Experience

Abstract: The article considers the state policy of social protection of the population in the Republic of Uzbekistan. Methods of legal regulation of social security law. The system of social security law is analyzed. The history of formation and development of social security in the Republic of Uzbekistan is studied. Attention is paid to the rights of social security during the period of quarantine from a pandemic, and international legislation and experience are comparatively analyzed. The article deals with the main characteristics of the legal regulation of remote workers’ labor; the concept and features of remote laborers’ subject of labor law. The authors analyzed the relationship of an employment contract with a remote employee with other labor contracts. Legal acts in the field of regulating the work of remote workers is the context of a pandemic have been studied. Features of concluding an employment contract with a remote employee. Electronic interaction during the
pandemic period, which is under the control of the employer; - interaction between the employer and the employee is carried out using public information and telecommunications networks.

**Keywords:** principle, law, social security, citizens, law, experience, quarantine, need, conditions, law, labor, remotely, law, pandemic, Internet

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**Authors:** W.F.Tang, S.L.Mak, C.HLi

**Paper Title:** Additive Manufacturing Technology in Orthodontic Devices Development

**Abstract:** Traditional wires and brackets has been widely used as orthodontic devices for long time. The metal wires and brackets help to correct the position of teeth as well as fix the cavity. However, metal brace wires have quite a lot limitations. Patients wearing metal brace have many food restrictions and feel not comfortable. Brushing and flossing are required to remove the food debris frequently. Hence, clear plastic aligners have popped up recently. Since the metal brace fabrication process has associated with prolonged process time as a result of a long workflow process starting from brace mold presentation to the prostheses execution. The growing of additive manufacturing technology make it possible to develop complex structures and shapes of dental brace. By combining 3D oral scanning, it is possible to shorten the lead time of orthodontic treatment process. This review, therefore, investigates the use of Digital Light Processing (DLP) Additive Manufacturing Technology for plastic dental brace development as a remedy to the problems associated with the traditional methods. The study reveals that it is feasible to fabricate these plastic braces utilising the DLP technology. DLP technology is affordable and arguably able to produce dental models with high levels of assurance and accuracy.

**Keywords:** dental brace, clear aligners, orthodontic device, additive manufacturing, stereolithography, fused deposition modelling

**References:**


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Authors: Preeti Tripathi, Imran Khan

Paper Title: Computational Simulation - Design & Analysis Functionality of Grid Connected (GC) Photo-Voltaic (PV) System

Abstract: The electrical power produced via photo-voltaic (PV) array relies largely on weather conditions. In this paper, we presented a continuous state functionality of the PV grid-connected (GC) unit at distinct solar irradiances. The presented model is developed on MATLAB environment, which includes the PV array using an improved perturb and observe (MP&O) tracking system interconnected to DC to DC boosting conversion application, the 3-phase 3 level electric power inverter which usually associated to the utility grid using low pass filter, coupled transformer and synchronous control mechanism of PV inverter. The presented model is lab-created within day-by-day climatic conditions to estimate its working mechanism. The simulation
Cost overrun and delay are the most important factors which affect the rate of progress in construction industries. There are numerous Risks are involved in cost and schedule overrun which leads to unprofitable situation or dropping the project. Previous literature studies are mainly focused only on cost overrun and delay but they do not deal with their risks which is important to study. This study is to assess the factors influencing time and cost overruns on construction projects and their risks also. The objectives of the study were achieved through valid questionnaire. The questionnaires are collected over 40 construction companies. From this survey, identify and ranking the various elements which are responsible for the inflation of cost and schedule overrun using analytical software like SPSS. And discuss about the significant values obtained from the collecting data and recommendation and mitigation ideas from the ranking of overrun factors. The significant value should be more than 0.05 and from our analysis most of the factors are above that value. The study clarified that incorrect estimates and low productivity level of labors highly contributes to overrun in construction management. It will leads to unprofitable situation, so proper scheduling and better management will rectify these problems.

Keywords: Elements, Cost overrun, Schedule overrun, Construction projects.

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Authors: Veena Devi Shastrimath V., Ashwini, Andrea Olivero, Deepa Bhat

Paper Title: Railway Access Control System using Face Recognition

Abstract: Nowadays booking tickets and getting inside a railway station is an arduous task. Manual checking becomes a burden and time consuming. Also as everything is getting digitized in this modern world introduce face recognition and Quick Response (QR) code system for entry helps in passenger convenience. Face recognition is a method of identifying or verifying the identity of an individual using their face. Face recognition systems can be used to identify people in photos, video, or in real-time. So this system focuses on passengers’ convenience through allowing them to book tickets online and by introducing face recognition system and QR code system for entry to a railway station. This system helps in identifying people who try to travel without buying tickets and also helps to apprehend the blacklisted person which increases security in the railway station. Online booking is one of the convenient ways to book the ticket. This system also provides the convenience to passengers by issuing the digital ticket in the form of QR code thus avoiding any fuss due to the loss of the physical ticket.

Keywords: Entry Control System, Face Detection, Face Recognition, User Interface.

References:  

Authors: G. Sundari, J. Shanmugapriyan

Paper Title: Design and Implementation of PID, GA and Fuzzy logic Controllers for an Electrical Drive with Various Noise Disturbances

Abstract: It is a great challenge for human being to keep up the constant speed in drive when external Noise disturbances occur due to fluctuations of power supply. In order to avoid these issues, PID controllers are intended using predictable method such as Ziegler Nichols method. But finest level is not obtained in transient and steady state. During the MATLAB Simulation, the error is present transient and steady state behavior in conventional PID controllers. Hence it is necessary to design a PID controller with Novel intelligent technique for speed control of drive like fuzzy and Genetic Algorithm. It considers error as fitness function which is to be minimized using various GA operators such as mutation etc. The Drive will be operated with different external noises like sinusoidal noise, Saw tooth noise and Ramp noise. The comparison between PID, GA and Fuzzy PID will be presented and their performances are studied.

Keywords: Noise disturbances PID controller, Genetic controller, fuzzy controller.

References:  
5. Hybrid control technique for minimizing the torque ripple of brushless direct current motor“ Measurement and Control 2018, Vol 2278  
Abstract: Now a day’s diagnosis and accurate segmentation of brain tumors are critical conditions for successful treatment. The manual segmentation takes time consuming process, more cost and inaccurate. In this paper implementation of cascaded U-net segmentation Architecture are divided into substructures of brain tumor segmentation. The neural network is competent of end to end multi modal brain tumor segmentations. The Brain tumor segments are divided three categories. The tumor core (TC), the enhancing tumor(ET), the whole tumor (WT). The distinct data enhancement steps are better achievement. The proposed method can test result conclude average counter scores of 0.83268, 0.88797 and 0.83698, as well as Hausdorff distances 95% of 2.65056, 4.61809 and 4.13071, for the enhancing tumor(ET), the whole tumor (WT) and tumor core (TC) respectively. In this method validating with BraTS 2019 dataset and identify the test time enhancement improves the Brain tumor segmentation accurate images.

Keywords: Deep learning • Brain tumor segmentation • U-Net

References:

Authors: Diiva Sathyaa Sree.I, Pangedaiah.B

Paper Title: A New Islanding Detection Technique using Ensemble Empirical Mode Decomposition

Abstract: Penetration of distributed generation (DG) is rapidly increasing but their main issue is islanding. Advanced signal processing methods needs a renewed focus in detecting islanding. The proposed scheme is based on Ensemble Empirical Mode Decomposition (EEMD) in which Gaussian white noise is added to original signal which solves the mode mixing problem of Empirical mode decomposition (EMD) and Hilbert transform is applied to obtained Intrinsic mode functions(IMF). The proposed method reliably and accurately detects disturbances at different events.

Keywords: Distributed Generation (DG), Empirical Mode Decomposition (EMD), Ensemble Empirical Mode Decomposition (EEMD), Intrinsic Mode Function (IMF)

References:
in an RFID system, the RFID readers consume huge energy and are considerably expensive in practical applications. To minimize the total number of readers with guaranteed surveillance such that the position of each tag can be uniquely determined is a challenge. This paper considers a simple but practically useful model of anchor-free network of RFID readers where each tag falls within the sensing zone of at least two readers. To maintain the quality of service in the real applications, a practical condition, the communication range at least twice its sensing range, is considered. Under this condition, a characterization of a network is proved. An efficient algorithm for recognizing such a network is then developed without any initial position information of the readers. Using these readers as the references, an algorithm is designed for finding the exact positions of the tags in distributed manner. Unlike the existing techniques, it requires no external references for tag tracking. The proposed technique finds at most two possible positions (in some cases, unique position), out of which one is correct, for each of which.

Keywords: Targets tracking, exact positions of RFID readers, 2-sensor covered network, locating targets with no anchors, locating RFID tags with RFID readers.

References:

Authors: A.Asyraf, S. Syafie, M. Halim Shah Ismail

Paper Title: Type I Diabetes Mellitus Mobile Application with Blood Glucose Simulation

Abstract: There are many mobile applications for diabetes currently in the market which try to help people with diabetes better manage their condition. Common features are the ability to log in user meal intake, amount of carbohydrates, insulin, physical activity and etc. and present the data back to them in a more organize manner such as in charts so that they can learn their blood glucose trend. However, few are trying to simulate their blood glucose level which might help them understand better the effect of these input to their blood glucose. In this paper, a mobile application is presented which can predict the trend of glucose from the meal and insulin intake of diabetes patient. The application used a glucose-insulin dynamics mathematical model to simulate the changes of blood glucose level over time for the user. Data of a clinical patient was used as input to the developed application to study its performance. It was found out that the accuracy of the application made the application to not be 100% reliable as predictor of blood glucose but a good educational tool for diabetes patient as it can simulate the glucose response from carbohydrate and insulin intake. A more accurate and complex mathematical model needs to be used for future development as the current linear and relatively simple model may not be accurate enough for the application.

Keywords: Application, Diabetes, Glucose, Insulin, Mobile, Simulation, T1DM.

References:

Authors: Anusha Nellutla, Gnama Sai Ganesh Chittajallu, Shaik Feroz

Paper Title: Leaf Disease Detection using Labview Imaq Vision

Abstract: The intention of our project is to design a system which can identify the good leaves from the diseased ones. Image processing is a powerful tool capable of many applications. Image processing combined with Machine Vision can simulate and execute real time projects. In this project we have used LabVIEW along with IMAQ Vision to acquire real time images and process them. LabVIEW IMAQ Vision is potentially useful for agricultural products since it combines the merits of both LabVIEW and IMAQ Vision, which have graphical programming environment and rich image processing functions. The project aims to provide a brief introduction into the IMAQ vision components like Image Acquisition, Calibration, Defect detection. Major leaf diseases’ symptoms include spots or discolouration of leaves. The presence or absence of macro and micro nutrients, bug
infestation and other diseases can be identified through leaves. In this project we have obtained the images through LabVIEW IMAQ vision pallet. Further on two procedures were followed – one based on colour of the leaves and other is based on spots and patterns present on the leaves. For the discolouration we first split the image into its constituent planes- RGB and CMYK, here we used Green, Cyan and Yellow planes. Then on we decided a threshold based on sample data using Linear Regression based prediction model of Machine Learning to classify the data into three states – safe, risk and high risk. The second method was detecting spots. First, we split the images into its constituent planes to convert the RGB image to Greyscale and increase the contrast using the Colour Plane Extraction tool then use the Look up table tool to further enhance the contrast. Then on locate the bright objects and then using dilation from the Morphology tool box we increase the size of the spots to increase detection rate. Using Advanced Morphology tool box we removed the boundary objects to isolate the spots. Then using the shape detection or circle detection algorithm we can detect the spots. Several samples were obtained and are successfully classified. Finally, current limitations and likely future development trends are discussed. Combining LabVIEW along with different programming algorithms can help in raising the accuracy of the system.

Keywords: Image acquisition, colour plane extraction, Gray morphological operation, Edge detection, Real time Colour matching.

References:
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Authors: Ankit Balvanshi, H.L. Tiwari, Mayank Gupta, Akhilesh Sharma

Paper Title: Statistical Downscaling of Maximum Temperature in Hoshangabad District of India

Abstract: The Global Climate Models CanESM2 and CGCM3 were utilised to downscale the maximum temperature for Hoshangabad district of Madhya Pradesh, India. The area of study comprises to be of 6706 km2. The predictors employed for CanESM2 were ncepmslpgrl, ncep850gl, ncep850g and ncepmslpsas, ncep850gl, ncep8505gl were the predictors fixed for CGCM3. The total duration of the study was from the years 1979 – 2001. The two GCMs, CGCM3 and CanESM2 were checked for their capability in downscaling the maximum temperature climatic parameter. The GCM outputs were evaluated on Nash-Sutcliffe Efficiency (NSE) and coefficient of determination (r2) criteria. The period of calibration was taken to be 1979-1995 and 1996-2001 was chosen as the period of validation. GCM CanESM2 obtained NSE of 0.77, 0.75 and r2 of 0.79, 0.79 during the periods of calibration and validation respectively. It was concluded that CanESM2 model is found comparatively more suitable for downscaling of maximum temperature for Hoshangabad region. The GCM can be further employed to generate the future scenario of maximum temperature in the region.

Keywords: Global Climate Model, CGCM3, CanESM2, NSE, r2.

References:

Authors: Raamesh. ASP, Balasundaram. N., Karthik. V.

Paper Title: An Investigation on the Impact of Industrial Wastes as A Replacement for Sand In Fiber-Reinforced M20 Grade Concrete
Abstract: Waste disposal in environment due to rapid urbanization and industrialization is increasing day by day. Disposal of wastes in the environment is more difficult in the construction industry. Marble powder and quarry dust are the waste materials obtained from the dressing and processing unit of marble production and quarries respectively. These waste materials are dumped in the environment as a landfill, and they can be used as a viable substitute material to the ingredients of concrete to a great extent. This will result in the production of economically green concrete; this happens because of less usage of river sand, leading to reduction in damage to the environment. In this paper, natural sand used in the fiber-reinforced concrete (FRC) of grade 20 was replaced by varying proportions (0%, 25%, and 50%) and combinations of quarry dust (QD) and marble powder (MP) with 0.5% of basalt fiber added to the mix in order to explore the impact of QD and MP on the mechanical properties of concrete. The strength properties were assessed at 3rd, 7th, 14th and 28th day and the obtained results are tabulated. It is observed that a particular proportion of QD and MP enhances the strength of FRC.

Keywords: Marble powder, Quarry Dust, Fiber Reinforced Concrete, Basalt Fiber.

References:

Authors: Himanshi Koli, M.P.S. Chawla

Paper Title: Design Analysis of PV-Wind Energy System with Pumped Hydro Storage using HOMER Pro

Abstract: Renewable energy in the recent era world-wide has proven to be a major shift for clean energy generation. It is a great opportunity or solutions to address increasing clean energy demand especially in a developing country such as India. As wind energy and solar energy are most commonly used renewable resources, gives their advantage in the region. Focusing aim of the analysis is to present the reliability of pumped hydro storage (PHS) system with respect to battery banks on the basis of operation and maintenance (O&M) cost with minimum loss. Thus, this system will have feasibility and practical capability to provide persistent supply operation to remote areas. The Hybrid Optimization Model for Electric Renewable (HOMER) software also known as HOMER Pros is used to conduct simulation of the system.

Keywords: Renewable energy system, PV-wind energy system, PHS, HOMER Pro.

References:
Abstract: In this article, we have introduced a new distribution based on type I half logistic-G family and exponential extension as a base distribution known as Half Logistic Exponential Extension (HLEE) distribution. The statistical properties of this model are also explored, such as the behavior of probability density, hazard rate, and quantile functions are investigated. The Maximum likelihood estimation (MLE) method is used to estimate model parameters. For the potentiality of the proposed model we have compared the goodness of fit with some others models. We have proven the importance and flexibility of the new distribution in modeling with real data applications empirically.

Keywords: Estimation, Exponential extension, Half-logistic exponential extension distribution, MLE.

References:

Authors: Arun Kumar Chaudhary, Vijay Kumar

Paper Title: Half Logistic Exponential Extension Distribution with Properties and Applications


Authors: Kenji Sakoma, Makoto Sakamoto

Paper Title: A Consideration on “Sweetness” by 3D CG with Fruits as an Example

Abstract: Today, there are a lot of images and videos drawn by 3D computer graphics (hereinafter referred to as 3DCG) around us, and 3DCG is permeating our lives [1]. Recently, research and development of 3DCG-related technologies such as 3D printers, AR, and VR have been actively carried out, and further progress in 3DCG can be expected in the future. 3DCG is a technology that creates images and videos by creating objects in a virtual three-dimensional space. CAD, VR, AR, simulators, 3D printers, etc. have been developed as technologies that apply this. One of the reasons why it was applied to such technology is the high expressiveness of 3DCG. It is possible to express various substances such as wood, metal, plastic, and glass, and it is becoming possible to reproduce things that do not have a specific shape, such as flames, smoke, and fluids. One of the researches on such 3DCG technology is digital food, and research is being conducted with the aim of putting it into practical use in the future. Digital food is expected to solve problems related to food freshness management, disposal, new
product development simulation, etc., but even with the expressive power of 3DCG, meat and fish are still difficult. I am not good at expressing fresh foods such as vegetables and fruits, and "freshness" and "organic coloring" such as "fresh flowers". This is one of the issues that cannot be avoided even in the research and development of digital foods and must be solved. In this technology, while understanding the principle of 3DCG, I learned using some software in order to explore what technology is necessary to create a digital food. Also, in learning, we set the goal of "expressing fresh fruits", which is one of the challenges of digital food, and the gloss of the skin peculiar to fruits, the slight unevenness of the surface, especially the freshness of the cut surface of fruits we focused on reproducing the expression of freshness.

Keywords: Computer graphics, Ambient light, Specular reflection light, Diffuse reflected light, Subsurface scattering, Fresnel formula

References:

Authors: Kenji Sakoma, Makoto Sakamoto

Paper Title: For Colorization using Template Matching Basic Research on

Abstract: Colorization, also known as colorization, is a term introduced by Wilson Markle in 1970, and is a method of coloring black-and-white images and videos using a computer. Coloring is important. Imagine coloring a picture as an example. The painting before painting only gives information of existence, such as trees, flowers, and clouds. Some things can be identified by color. This does not give us enough information from the picture. But what about coloring? If you paint the sky red, it will be a sunset, and if you paint the ground green, it will be a meadow. In other words, it is possible to express not only the background but also the background. This makes it possible to read information that cannot be understood only in black and white. With the development of digital devices such as smartphones these days, the chances of seeing black-and-white images are decreasing, but in modern times, black-and-white images are used for X-ray images, MRI images, aerial photographs, fixed-point observations, etc. There are many opportunities to be lost. The development of color photography began in the world in the 1800s, and the development of color photography began in Japan in 1940. In other words, the photographs before that were black and white, and colorization was used to colorize them. Currently, many researchers are studying colorization methods and processes, and the processing time and the burden on users are being reduced. However, software that can perform highly complete colorization is expensive, and some are complicated to operate. Therefore, in this research, as basic research for the development of a fully automatic colorization program for free software, color images (template images) lacking information by template matching using ZNCC and black-and-white images with similar brightness patterns are colored. We made a prototype of a colorization program that restores images.

Keywords: Computer graphics, Colorization, Zero-means Normalized Cross-Correlation, BMP image, HSV color space, Color Propagation

References:

Authors: Hamdy Amin Morsy

Paper Title: Developing a New CCN Technique for Arabic Handwritten Digits Recognition

Abstract: Convolutional Neural Networks (CNN) have many applications in object recognition such as character and digit recognition. Few researches are performed on Arabic handwritten digits recognition. In this research, we will develop a new algorithm to utilize the convolutional neural networks with sigmoid function (σ-CNN) to recognize Arabic handwritten digits recognition. The performance of this method provides minimum cost functions with maximum testing accuracy results in compared to other existing techniques.
Keywords: Machine Learning, Neural Networks, Image Processing, Natural Language Processing

References:

Authors: Mahima Chandane, Ankita Chavan, Renuka Kamath, Dipali Madane, Madhuri Badole

Paper Title: Intelligent Music Player Based on Emotions

Abstract: This project presents a system to automatically detect emotional dichotomy and mixed emotional experience using a Linux based system. Facial expressions, head movements and facial gestures were captured from pictorial input in order to create attributes such as distance, coordinates and movement of tracked points. Web camera is used to extract spectral attributes. Features are calculated using Fisherface algorithm. Emotion detected by cascade classifier and feature level fusion was used to create a combined feature vector. Live actions of user are used to be recorded for emotional emotions. As per calculated result system will play songs and display books list.

Keywords: Smart Emotion, Face Detection, Face Recognition, Emotion Prediction, OpenCV.

References:
### Authors: Shruti Bhavsar, Sanjana Khairnar, Pauravi Nagarkar, Sonali Raina, Amol Dumbhare

### Paper Title: On Time Document Retrieval using Speech Conversation and Diverse Keyword Clustering During Presentations

### Abstract:
In this paper we present the idea of extracting keywords from discussions, with the point of using these words to recuperate, for each small piece of conversation and generating reports to individuals. Regardless, even a smaller piece contains a blend of words, which can be effortlessly interrelated to a couple of subjects; additionally, using a customized talk affirmation (ASR) system presents slips among them. Thus it is hard to sum up effectively the data needs of the conversation individuals. We initially propose a count to kill significant words from the yield of an ASR system which makes usage of topic showing strategies and of a sub particular prize limit which supports varying characteristics in the word set, to organize the potential contrasting characteristics of subjects and diminish ASR disturbance. By then, we set forward a strategy to surmise different topically detached requests from this definitive word set, remembering the ultimate objective is to build the potential outcomes of making at any rate one appropriate proposition while using these inquiries to investigate the English Wikipedia. The readings depict that our pronouncement continue ahead over past procedures that watch simply word recurrence or idea commonality, and states the good response for a report recommended framework to be used as a piece of conversations.

### Keywords:
Document Recommendation, Information retrieval keyword extraction, Meeting analysis, Local database, Extraction, Keyword, Clustering

### References:
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6. Melville and Vikas Sindhwani, IBM T.J. Watson Research Center,Yorktown Heights, NY 105, Recommender System Prem hw@us.ibm.com
9. Michael J. Fazzani and "Daniel Billos, Content-based Recommendation Systems “

### Authors: Abarna M, Jane Lourde Teresha A, Devisri R, Maithreyini M, V. Kumar Chinnaian

### Paper Title: Helping Hand for Unsighted People-Acousticsight

### Abstract:
Technology is best when it brings people together. Today technology plays a vital role in humanity. Also applied science can make the impossible possible. The proposed project aims to show equality in the safe navigation of visually impaired people just like a normal person. The project aims to help the secure guidance of humans with bad eyesight. This system support the sole in attaining the landing place, leading them across the way and alert them about the barrier that are expected in their path through the vibration and generate simulated speech output through headset. Therefore, this technology hold back them from striking the barrier. It add on value to conventional canes with barrier predicting, preventing human from accident and reducing difficulties in navigation. An ultrasonic sensor is execute to determine the distant of obstacles from the person. It is a Raspberry Pi based platform that is used to alert the person of impending obstacles. Also can create the place for all other components and it has funcioning code. Here, a vibration motor is used to warn the person from the collision. Combined with the role of guiding, it also has aid preventing plan in case of emergency. The GPS is included to find the location of person and the location is send to the person’s family through the notification by means of Blynk app. Accordingly, The project convince the visually impaired people can travel alone without getting fear or accidents at the moment.

### Keywords:
Visually impaired, sensing, vibration motor, barrier prediction.

### References:
Abstract: Nowadays Deep learning was advanced so much in our daily life. From 2014, there is massive growth in this technology as there is a vast amount of data present. We are even getting better results from whatever we may do. In my work, I have used Convolution Neural Networks as my project depends on image classification. So what I’m trying to do is I’m using two classes in which one class is male and one class is female. I’m classifying both the classes and trying to predict who is male and who is female. For this, I have been using layers like Sequential, Convolution2D, Max-pooling, Flattening, and finally Dense. So, I connect all of these layers. I have been using two more extra layers which are Convolution2D and max-pooling connected as one layer for better classifications. In my model, I’m using Adam optimizer as I’m having only two classes and in my experiments, I found Adam as a good optimizer and I use binary cross entropy as my loss function as I’m using only two classes if we have more than two classes we can use categorical loss function and the images which I use for predictions will be converted into 64*64 matrix form. In the end, I will be getting predictions as 1 for male and 0 for female.

Keywords: Computer Vision, Gender Classification, Human-computer interaction, Convolution Neural Network (CNN).

90.

References:

Authors: Kurshid Madina, Saksham Mansotra

Paper Title: Gender Predictions using Convolution Neural Networks

91.

Abstract: Plant-based electrospun nanofibers are widely fabricated as wound dressing in recent years primarily due to the presence of bioactive compounds which can facilitate the wound healing effects. In this study, poly(vinyl alcohol) (PVA) fibre mats containing Agaricaria malaccensis leaf extract (ALEX) [5, 10 and 15 % (w/w)] were fabricated by electrospinning method as potential wound dressing material. The nanofibers were uniform, beadless and randomly oriented with average diameters ranged between 195.27 – 281.20 nm. The presence of ALEX in the PVA nanofibers were evaluated by Attenuated total reflectance-Fourier transform infrared spectroscopy (ATR-FTIR) and differential scanning calorimetry (DSC). The mechanical properties, swelling degree and porosity of the nanofibers were also determined. ALEX was rapidly released from the ALEX-loaded PVA nanofibers in the first 12 hours and increased gradually afterwards. The released rate of ALEX was dependent on the ALEX content in the PVA nanofibers. This result is also contributed by the swelling degree and porosity of the nanofibers where the results were found to be between 241.66 – 305.86% and 64.53 – 30.81%, respectively. Meanwhile, the tensile stress and maximum elongation at break for all electrospun nanofiber mats were in the range of 8.56 – 2.68 MPa and 205.94 – 166.31%, respectively. The nanofiber mats inhibited growth of Escherichia coli, Vibrio vulnificus, Bacillus subtilis and Staphylococcus aureus with zone of inhibition of 7.5 – 15.0 mm for gram positive bacteria and 6.1 - 11.7 mm for gram negative bacteria. ALEX-loaded PVA nanofibers also showed potent anti-inflammatory activity against lipoxygenase with percentage of inhibition between 80.887 – 86.977%. Taken together, the results of this study suggest that ALEX-loaded PVA nanofibers have the desired properties of bioactive wound dressing.

Keywords: Electrospinning, agarwood, polyvinyl alcohol, wound dressing

References:
Authors: Pallavi S Biradar, Anand Jatti

Paper Title: Face and Thumb Based Multimodal Bio-Metric Authentication using Harris Feature Extraction and Stenography

Abstract: In the past recent, identification of a person in an effective manner is a foremost concern for any security authentication in numerous applications such as, banking, e-commerce, communications etc. One of the best identification technology for person identification and authentication compared with the existing password based authentication is the multimodal biometric technology. Multimodal can be defined as, a system which uses two or more biometrics for identification of person. In the paper we propose a multimodal bio-metric system with a unique methodology and features extraction method incorporated in system for a secure authentication. The two modalities used in the system are face and thumb. We use Harris based image feature extraction for both and choose the best unique features from both and fused using concatenation. The extracted unique features are embedded in a cover image using modulo operator based steganography technique. This encrypted data is shared as an image file to the receiver for authentication. At the receiver end the hidden features are decrypted and separated into face and thumb features. These decrypted features are compared with the pre-trained
authorized person feature, based on the multi-svm classifier result the person is decided as authorized or unauthorized. The accuracy of the system is been calculated and was resulted in a good accuracy. The system can be made much more secure by adding an additional secret key for encryption and decryption.

Keywords: Bio-metric, Harris, modulo operator, multi-modal, multi-svm. Stenography.

References:

Authors: Shrugal Varde, M.S.Panse

Paper Title: Stereo Vision-based Path Finder for Visually Impaired

Abstract: This paper introduces a novel electronic mobility aid for visually impaired users that helps them navigate in any given environment and avoid knee level to head height obstacles. The mobility aid uses stereo imaging system to capture the images of the area in front of the user. The processing unit generates a disparity map and a segmentation algorithm extracts information about the relative distance of obstacles from the user. This information is relayed to the user in simplified vibration pattern feedback to inform the user of the path to be taken to avoid collision with the obstacle. Special hardware was designed to make the system portable and cost effective. The mobility aid was validated on 55 visually impaired users. The subjects walked in a controlled test environment with a varying number of obstacles placed in their path. The accuracy of the device to help the user avoid obstacles and the average speed of walking of the user were determined. The results obtained were satisfactory and the device has the potential for use in standalone mode as well as in conjunction with a white cane and thus help visually impaired people counter mobility problems.

Keywords: visually impaired, stereo, mobility, disparity, navigation

References:
2. C. Jackson, “Correspondence with Carroll L. Jackson, Executive Director of the Upshaw Institute for the Blind,” Available ftp.eecs.umich.edu/people/johannb/Carroll_Jackson_Letter.pdf, Aug.1995
### Efficiency of Probabilistic Network Model for Assessment in E-Learning System

**Abstract:** The knowledge acquirement by the learner is a major assignment of an E-Learning framework. Evaluation is required in order to adapt knowledge resources and task to learner ability. Assessment provides learner’s an approach to evaluate the skills gained through the e-learning domain they are accessing. A dissimilar method can be used to assess the information acquirement, such as probabilistic Bayesian Network model. A Bayesian Network is a graphical representation of the probabilistic relationships of a complex system. This network can be used for reasoning with uncertainty. Bayesian Network is the most challenging task in e-learning system as learner evaluation model are an element of uncertainty. In this paper the current proposed scheme is constructed on Bayesian Network to deduce the stage of knowledge possessed by the learner. It also proposes type of assessment to identify the knowledge whatever the learner identifies. Throughout the assessment, it can be performed by two approaches namely Sequential and Random. In Sequential approach, questions can be displayed on the learner machine in sequential order. In Random approach, questions can be displayed on the learner machine in random order. However, both have their inherent limitations. Questions that are considered to be answered easily by the learner may also be presented to the learner who is not desirable. This system determined on the illustration of Bayesian Network model and algorithm for inference about learner’s knowledge. The Bayesian Network model was efficiently implemented for three levels of learner called Higher Learners (HL), Regular Learners (RL) and Irregular Learners (IL) for learner’s assessment and was successfully implemented with 81.1% of probabilities for learner’s assessment.

**Keywords:** Assessment, Knowledge design, Bayesian Network (BN), Evaluation, E-Learning, Intelligent Tutoring System (ITS)

**References:**


**Authors:** Sk. Faruque Ahmed, Mohibul Khan, Nillohit Mukherjee

### Synthesis and Optical Characterization of Carbon Nanofibers

**Abstract:** Radio frequency plasma enhanced chemical vapor deposition technique has been used to synthesized graphitic carbon nanofibers thin films. Ni catalyst in thin film form used for the synthesis of carbon nanofibers. The deposition temperature of the substrate has been varied from 500 - 600 OC. The morphology of the CNF thin films changed with the variation of substrate temperature. The graphitic phase of the synthesized carbon nanofibers has confirmed by X-ray diffraction patterns analyses. Field emission scanning electron microscopic studies showed fibrous structure in the films. The length of the carbon nanofibers few micrometers and the diameter range 300-400 nm. The different vibrational modes of carbon nanofibers analyzed using Fourier transformed infrared spectroscopy measurements. Photoluminescence of the carbon nanofibers have also been studied which showed a strong emission peak at 468 nm.

**Keywords:** Carbon nanofibers; RF-PECVD; XRD; FESEM; FTIR, Photoluminescence.

**References:**

Cyanide in salt bath Applied to ASTM A-517 Steel: Effects on Hardness, Wear and Microstructure

Abstract: The effects of the cyanide treatment (CN) in a salt bath at elevated temperatures on the hardness; adhesive and abrasive wear; of ASTM A-517 steel, were investigated. For abrasive wear, 1" x 3" x 5/16" samples were prepared according to ASTM G-65 standard. For adhesive wear, specimens wit ring-shaped: \( \varphi \text{ ext} = 40 \text{ mm}, \varphi \text{ int} = 20 \text{ mm} \) and \( 10 \text{ mm} \) thick, according to ASTM G-77. The CN treatment was carried out, at high temperatures: \( 800 \text{ – } 850 \text{ – } 900 \text{ – } 950 ^\circ \text{C} \), immersing the samples in a salt bath: 6% NaCN + 80% BaCl2 + 14% NaCl before entering the muffle furnace, with soaking time of 3 hr. Hardness tests were performed on a Rockwell Durometer taking measurements on the HRC scale. The adhesive wear tests were carried out on a parallel lathe coupling the Amshler device, following the ASTM G-77 standard. The abrasive wear tests were performed according to the ASTM G65 standard. Microscopy was done at the optical level. A maximum hardness of 63.5 HRC was found in all samples, representing an increase of 11.3% with respect to the state of supply (T&R). In abrasive wear, its value increased to 66%, compared to supply samples. The most suitable microstructure is presented by cyanide samples at 850°C, with a layer of compounds (hard layer) formed by: massive cementite; tempered martensite and carbide. It is concluded that when applying cyanide to ASTM A-517 steel, the hardness and wear properties are increased to optimal values, if the cyanide treatment (CN) is carried out at 850°C.

Keywords: Cyanide, adhesive wear, abrasive wear, wear steels, surface hardening

References:

Authors: Victor Alcàntara Alza

Paper Title: Cyanide in salt bath Applied to ASTM A-517 Steel: Effects on Hardness, Wear and Microstructure
Authors: Edy Budiman, Andi Tejawati, Ummul Hairah

Paper Title: Bioinformatics Database Query Performance and Optimization

Abstract: Bioinformatics portable test is a critical element of SQA and represents a comprehensive review of specifications, design and coding. The test represents an abnormality in the development of the portal. A series of tests systematically reveals several different types of errors. This study aims to evaluate the performance and optimization of Borneo’s Bioinformatics portal with a series test activities using the Web Performance Optimization methodology. Testing query performance with measuring the response time and page loading timings from the object relationship mapping (ORM) model Laravel PHP framework in offline and online. For optimization, we set a pre-test and post-test scenario to evaluate the efficiency performance test results. The study and experiment found that the query relation model, parsing script (JavaScript and CSS), service scale and dimension images in the interaction process to the database are the dominant resources affecting the results. The results study found that the query relation model, parsing script (JavaScript and CSS), service scale and dimension images in the interaction process to the database are the dominant resources affecting the performance of the Bioinformatics portal. Performance optimization through determining the appropriate query relation model, minify and defer parsing script or combine images using CSS sprites to reduce scala image.

Keywords: Bioinformatics, query, database relationship, ORM.

References:
Abstract: High Quality Data are the precondition for examining and making use of enormous facts and for making sure the estimation of the facts. As of now, far reaching exam and research of price gauges and satisfactory appraisal strategies for massive records are inadequate. To begin with, this paper abridges audits of Data excellent studies. Second, this paper examines the records attributes of the enormous records condition, presents high-quality difficulties appeared by large data, and defines a progressive facts exceptional shape from the point of view of records clients. This system accommodates of big records best measurements, best attributes, and best files. At long last, primarily based on this system, this paper builds a dynamic appraisal technique for records exceptional. This technique has excellent expansibility and versatility and can address the troubles of enormous facts fine appraisal. A few exploits have verified that preserving up the character of statistics is regularly recognized as hazardous, however at the equal time is considered as simple to effective basic leadership in building aid the executives. Enormous data sources are exceptionally wide and statistics structures are thoughts boggling. The facts got may additionally have satisfactory troubles, for example, facts mistakes, lacking data, irregularities, commotion, and so forth. The motivation behind facts cleansing (facts scouring) is to pick out and expel mistakes and irregularities from facts so as to decorate their quality. Information cleansing may be separated into 4 examples dependent on usage techniques and degr...
Paper Title: Public Debt, Current Account Deficit and Economic Growth: A Study on Indian Context

Abstract: External debt and internal debt form main components of the public debt structure in India. India’s debt profile shows increasing external debt and simultaneously increasing the deficit in current account which have impact on economic growth of India. Our study assesses the impact of India’s Gross External Debt (GED), Internal Debt (IND) and Current Account Deficit (CAD) on economic growth (GDP) by using time series data from 1998-99 to 2018-19. We intend to find long-run as well as short run relationship between the variables with the help of Eviews software. Stationarity of data is tested by considering Augmented Dickey-Fuller (ADF) test statistics and used Johansen Co-integration test and Vector Error Correction Model (VECM). The result shows co-integration among the variables with one equation. The result of VECM shows existence of long-run relationship among the variables. But the study fails to find the short-run causality among the variables. The results show external debt (GED), internal debt (IND), and Current Account Deficit (CAD) have negative and statistically insignificant relationship with GDP. It shows increase in public debt and deficit in current account results in decrease in GDP growth.

Keywords: External Debt, Internal Debt, GDP, Current Account, CAD, VECM, India

References:

Authors: Yendluri Lohith JayaSurya , Yendluri Priya Yasaswini , Somepalli Saranya

Paper Title: Image Steganography

Abstract: Steganography is the practice of concealing a file, message, image, or video within another file, message, image, or video. The advantage of steganography is that the intended secret message does not attract attention to itself as an object of scrutiny. Steganography is concerned both with concealing the fact that a secret message is being sent and its contents. The change is so subtle that someone who is not specially looking for it is unlikely to notice the change. We intend to perform image steganography by designing a neural network that prepares the secret jpg image and hides the prepared jpg image in a cover jpg image.

Keywords: steganography , neural network , jpg image

References:


Authors: C Ankita, Supriya A, Bhagya R

Paper Title: Design and Simulation of millimeter wave Mylar based flexible Antenna for 5G wireless Applications

Abstract: The millimeter wave (mm-wave) is expected to play a crucial role in providing broad frequency bandwidth for large data transmission. The restrictions of wave propagation are anticipated to get eliminated in mm-wave propagation through the assistance of antenna technologies. The higher frequency spectrum prevalence of the 5G applications are likely to be dependent on a small advanced antenna technology. This paper presents an antenna design which uses Mylar as substrate for the 5G wireless applications. The structure of the antenna adopted here is of a T-shaped patch designed with ideal symmetrical slot structures. To increase the bandwidth the idea of defective ground structure (DGS) is used. The antenna model discussed here shows a high impedance bandwidth and a fair radiation pattern in the required direction with a maximum gain of 9.35 dB at 28 GHz frequency. The proposed antenna is compared with the basic microstrip patch antenna which is designed at low frequency to prove that the bandwidth is enhanced and so other parameters in the proposed antenna such that it is suitable for mm-wave 5G wireless applications.

Keywords: Directivity, HFSS, microstrip patch antenna, millimeter waves, radiation pattern, return loss.

References:

Authors: Joan Hazel V. Tiongson, Marifel Grace C. Kummer

Paper Title: Rural Health Unit Decision Support System with Mapping

Abstract: In this highly challenging and demanding world, presence of data and technology are overwhelming. But at present, some institutions still engage in manual-type of operations like the Rural Health Unit of the Municipality of Solano, Nueva Vizcaya. Problems, issues and challenges encountered by the unit in the delivery of its medical services and the extent of compliance in ISO/IEC 25010 Software Quality Standards were identified. And with the uncontrollable availability of data, these can be handled and treated using data mining techniques to predict disease occurrences. In this study, the clustering and classification data mining techniques were utilized in order to predict disease occurrences of every barangay of the municipality at a given time. An efficient record management system along with a decision support system was developed to meet the challenges of the unit. It mainly features the disease-occurrence mapping to assist physicians and other health professionals in the unit in their decision-making tasks particularly in diagnosis, treatment and recommendations. In terms of ISO/IEC 25010 Software Quality Standards, the system gained a “very great extent” qualitative rating.

Keywords: Challenges, Clinical Decision Support System (CDSS), Data Mining, Electronic Medical Record (EMR), Health Information Technology (HIT)

References:


Authors: Telesphore Tiendrebeogo, Cheick Yacouba Rachid Coulibaly, Maliki Badolo

Paper Title: Robust Formal Watermarking Model Based on the Hyperbolic Geometry for Image Security

Abstract: The digital revolution has led to an increase in the production and exchange of valuable digitized documents across institutions, companies and the general public alike. Ensuring the authenticity, integrity and ownership of these official or high-value documents is essential if they are to be considered useful. Digital watermarking is a possible solution to this challenge as it has already been used for copyright protection, source tracking, and video authentication to name just a few applications of its use. It also enables integrity protection, which is of value for numerous documents types (e.g., official documents, medical images). In this paper, we propose a new watermarking solution that is applicable to image watermarking and is based on hyperbolic geometry. Our new solution builds upon existing work in geometrical watermarking.

Keywords: Watermarking Hyperbolic Geometry, Poincaré Disk Model, Hypercatadioptric Projection, Cryptography, Image Processing

References:


617-627
India is a making country with an arrangement of structure practices and social and money related structure, which needs to build up its own special strategies for seismic danger appraisal. The latest decade has shown our lack in peril decline programs, during the couple of hurting seismic quakes. In view of this quake alone in India there was massive loss of life and property. After this troublesome adversity thought is by and by being given to the appraisal of the adequacy of solidarity in structures to contradict strong ground developments. After Bhuj seismic quake IS-1893 was revised and appropriated in the year 2002, going before this scene it was refreshed in 1984. The code was first conveyed in 1962 as ‘Recommendations for Earthquake Resistant Design of Structure’. The central reason behind the loss of life and property was inadequacy of learning of direct of structures during ground developments. The frailty of the structures against seismic development must be fundamentally inspected. The most preferred strategy for seismic evaluation is Inelastic static assessment or Pushover examination in view of its straightforwardness. Inelastic static examination frameworks join Capacity Spectrum Method, Displacement Coefficient Method and the Secant Method. In this examination we are looking over seismic execution of G+17 standard RCC structure. The structure has been surveyed using Pushover Analysis.

Keywords: Pushover Analysis, Nonlinear Static investigation, Performance point, Capacity bend, Displacement, Drift of stories, seismic zone, Etabs programming

References:
Keywords: Heart Disease, Machine Learning Models, Python, Spyder.

References:
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Authors: R.Sundaramoorthy, J Justin Maria Hillary, S.R. Raja Balayanan, K. Kalidas, R.V. Rangarajan

Paper Title: Composite Wear Actions of Glass Fiber Reinforced Titinates Filled Epoxy Resin

Abstract: Glass fibre-reinforced polymer composites find numerous applications in today’s aggressive world because of their different benefits such as high wear resistance, strength to weight ratio and low cost. Particle fillers can be further enhanced with the added composite efficiency. Titinates are successfully used as polymer filler to achieve this. A number of these short-glass epoxy composites and the study of their wear behavior are included in current work. They are manufactured and characterized. It also outlines a technique for parametric analysis of the sliding wear behavior, based on Taguchi’s test-design approach.

Keywords: Polymer composites; Titinates; Epoxy; Wear test; Taguchi.

References:
12. J Justin Maria Hillary, R Ramamoorthy, J Dixon Jim Joseph


Authors: Romy Jun A. Sunico, Elwin S. Argana, Mark Anthony T. Golo, Maribel A. Aniñon

Paper Title: Vulca Loc: A Mobile Application for Finding Vulcanizing Shops embedding GPS

Abstract: This paper discusses the ideas and process of developing a mobile locator application for Vulcanizing Shops in Siargao Island with Global Positioning System (GPS) and Google Map Application Programming Interface (API). This mobile application is an innovation tool to show the location, availability and services of the vehicle services shops available in the island to ease the hassle of the tourists with vehicle errors. It also provides shortest possible route method that includes relevant information about the services of the shops. The study adopts the Rapid Application Development model and used ISO 9126 to evaluate the application in terms of usability (4.37), functionality (4.13) and Maintainability (4.20). Therefore, the application is certain to provide a significant support to the local and foreign tourists; therefore, providing an accurate and hassle time-free locating a vulcanizing shops

Keywords: API, GPS, RAD Model, Siargao, Vehicle Services Shop

7. David G. Go Live! Mobile for the Nation’s Largest Telephone Locator Platform. 2017

Authors: Anjali Dadhich, Blessy Thankachan

Paper Title: Design of NLP technique fore-customer review

Abstract: With the passage of time and the growth of ecommerce new web market needs to be build their users can share their ideas and opinions differently domains. There are thousands of websites that sell these various products. The quick growth in the number of reviews and their availability and the arrival of rich reviews for rich products for sale online, the right choice for many products has been difficult for users. Consumers will soon be able to verify the authenticity and quality of the products. What better way is there to ask people who have already bought the product? That’s where customer reviews come from. What’s worse is the popular products with thousands of updates — we don’t have the time or the patience to read all of them thousands. Therefore, our app simplifies this task by analysing and summarizing all the reviews that will help the user determine what other consumers have experienced in purchasing this product. This function focuses on mining updates from websites like Amazon, allowing the user to write freely to view. Automatically removes updates from websites. It also uses algorithms such as the Naïve Bayes classifier, Logistic Regression and SentiWordNet algorithm to classify reviews as good and bad reviews. Finally, we used quality metric parameters to measure the performance of each algo.

Keywords: Sentiment Analysis, Naïve Bayes classifier, Logistic Regression, Senti Word Net, Opinion Mining.

Utilization of Pet Wastes Aggregate in Building Construction - A Review

Abstract: The rapid increase of plastics waste produced worldwide today poses a danger to human health because of the pollution caused by the unsafe disposal and non-biodegradability of this waste combined with toxic gas emissions during incineration. Globally, PET (polyethylene terephthalate) is commonly used for bottling water and other plastic containers. Recycling the waste would be an additional benefit. This study focuses some researchers on the forms, methods of recycling and various literature applications of PET wastes. Recycled PET can of course be used when combined with the sand aggregate to manufacture of various construction materials, such as tiles, bricks, paving stones etc. This research focuses on its application as it attracts substantial building materials such as the manufacture of various PET waste tiles and their unique mechanical, physical and chemical properties; There are some important studies discussed in relation to PET waste, recycling methods, and results from the study. Even various applications are described here. Its usefulness is further defined as roofing Composite concrete, floor tiling and other applications.

Keywords: polyethylene terephthalate; waste; recycling; aggregate; tile; etc.

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66. Prashant Kumar, Ranjit Kumar Yadav, Ravi Kumar, Shivangi Maury, Subodh Chand, Sudhir Yadav, Prof. (Dr.) V.K. Saini “RECYCLING OF WASTE PLASTIC USING EXTRUSION PROCESS” in IJARIE- ISSN(O):2395-4396.
Multi-Objective Grey Wolf Optimization for Optimal Allocation of Distributed Generators in Distribution Networks

Abstract: The power loss in the radial distribution network is appreciable as compared to transmission network. To reduce the power loss in distribution network which is radial in nature, the solution methodology adopted in this paper is optimal placement of distributed generators (DG). The optimization incorporated is Multi-objective Grey Wolf Optimization (MOGWO). The optimization is accomplished for three different cases. In each case two objective functions are simultaneously optimized to obtain non-dominated solutions using Multi-objective Grey Wolf Optimization. Case (1): To minimize the real power loss and maximize the savings obtained due to DG installation. Case (2): To minimize real power loss and maximum voltage deviation in the network. Case (3): To minimize real power loss and rating of DG installed. MOGWO method maintains an archive which contains pareto-optimal solutions. The archive mimics the behaviour of grey wolves. MOGWO method is verified on radial distribution networks. The effectiveness of the optimization method is proven by comparing the results with other optimization methods available in the literature.

Keywords: Distributed Generators, Multi-objective Grey Wolf Optimization, Real Power Loss, Savings, Voltage deviation

References:

Heptagonal Shaped UWB Antenna with DGS for Wireless LTE with Enhanced Bandwidth

Abstract: The paper discusses about the implementation of Heptagonal shaped compact ultra-wideband planar Microstrip patch antenna with and without defected ground plane structure (DGS) with analysis of various parameters like return loss, VSWR bandwidth etc. A substrate made up of dielectric constant FR4 epoxy is utilized and the 2D and 3D radiation pattern are also discussed. DGS has helped to fine tune and increase the bandwidth & its effects have been studied. A volume of 283x32x1.7 (1523.2 mm³) is occupied by the size of antenna with dielectric constant of εr = 4.4, tanδ= 0.02. In order to provide fine tuning in the return loss graph, a 50Ω line with width of W=3mm direct line feeding method has been used for the micro-strip line and slots have been introduced in the ground plane structure, for achieving the good bandwidth coupling between the slots plays an important role. The antenna parameters including VSWR, Gain and return losses v/s frequency effects for the antenna with variation of slots and dimensions has been studied in this paper along with the analysis of important parameters such as return loss (dB), bandwidth, VSWR (Voltage Standing Wave Ratio) of patch antenna which has been performed using Ansoft HFSS v15 tool. The proposed design of the heptagonal shaped...
antenna operates as an ultra-wide band antenna ranging from 3.20 GHz to 10 GHz and beyond covering most of applications from LTE, Wimax (3.5/5.55GHz), Radio altimeter, RFID and ISM WLAN 5.2/5.8GHz etc.

**Keywords:** Microstrip Patch, heptagonal, defected ground structure, VSWR, 2D and 3D patterns, HFSS, Wireless

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**Authors:** Heet Savla, Vruddhi Mehta, Ramchandra Mangrulkar

**Paper Title:** Prediction and Diagnosis of COVID-19 using Machine Learning Algorithms

**Abstract:** The world is reworking in a digital era. However, the field of medicine was quite repulsive to technology. Recently, the advent of newer technologies like machine learning has catalyzed its adoption into healthcare. The blending of technology and medicine is facilitating a wealth of innovation that continues to improve lives. With the realm of possibility, machine learning is discovering various trends in a dataset and it is globally practiced in various medical conditions to predict the results, diagnose, analyze, treat, and recover. Machine Learning is aiding a lot to fight the battle against Covid-19. For instance, a face scanner that uses ML is used to detect whether a person has a fever or not. Similarly, the data from wearable technology like Apple Watch and Fitbit can be used to detect the changes in resting heart rate patterns which help in detecting coronavirus. According to a study by the Hindustan Times, the number of cases is rapidly increasing. Careful risk assessment should identify hotspots and clusters, and continued efforts should be made to further strengthen capacities to respond, especially at sub-national levels. The core public health measures for the Covid-19 response remain, rapidly detect, test, isolate, treat, and trace all contacts. The work presented in this paper represents the system that predicts the number of coronavirus cases in the upcoming days as well as the possibility of the infection in a particular person based on the symptoms. The work focuses on Linear Regression and SVM models for predicting the curve of active cases. SVM is least affected by noisy data, and it is not prone to overfitting. To diagnose a person our application has a certain question that needs to be answered. Based on this, the KNN model provides the maximum likelihood result of a person being infected or not. Tracking and monitoring in the course of such pandemic help us to be prepared.

**Keywords:** Healthcare, K-Nearest Neighbor, Linear Regression, Machine Learning Support Vector Machine.

**References:**


Authors: Junghwan Moon

Paper Title: Research Method of Clustering of COVID-19 with Text-mining

Abstract: A suspected patient with symptoms similar to coronavirus infection-19 was identified for the first time on January 8, 2020 in Korea. After that, the world was dominated by COVID-19. People all around the world must face a new society that will be changed by COVID-19. To prepare for such future, this study collected related words around the keyword COVID-19 and has predicted what risk factors and opportunity factors occur. As a result of SNA analysis by collecting news data from January to May, 2020, when COVID-19 was rapidly spreading, the key words "Prevention of epidemics", "Inspection", "Quarantine", "Infection", "Government", Keywords such as "Patient", "Addition", "Diffusion", "Judgment" and "Prohibition" have had important influences. Furthermore, COVID-19 has been affecting the daily lives of individual citizens, and their interest in the government response process increased. Therefore, the response to the new infectious disease must be quarantine based on science and technology and data, and it is imperative to establish a legal basis for using social facilities as treatment facilities.

Keywords: Coronavirus, COVID-19, Big data, Social Network Analysis, Cluster Analysis, Future Prediction, South Korea.

References:
Paper Title: Risk Analysis of BYOD in Afghanistan’s Organization

Abstract: Improving ICT management strategies is an ongoing need for almost all organizations. At the same time, the challenges that BYOD brings to the organization need to be carefully considered. BYOD terminology can refer to related concepts, technologies, and strategies that enable employees to use organizational resources. The use of different databases, applications, and personal devices such as smartphones, laptops, tablets, and any other mobile device such as memory chips and external hard drives can provide examples of these resources. The implementation of BYOD has brought a clear advantage to the organization. However, the use of BYOD in organizations can pose some risks and threats. The main purpose of this study was to analyze BYOD risks in Afghan organizations through cross-sectional quantitative research methods. An online survey of 24 questions was conducted on various aspects of BYOD risk from various organizations in Afghanistan. Through the use of raw data, survey results related to BYOD implementation in Afghanistan have been collected. Thus, the researchers found out that IT staffs have a low level of awareness of the risks and challenges of BYOD security and the latest technologies used by Afghan organizations. Finally, recommendations have been made.

Keywords: Risk Analysis, Bring Your Own Device (BYOD), Cyber Security, Information Security.

References:
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Authors: Rohan Yashraj Gupta, Satya Sai Mudigonda, Pallav Kumar Baruah, Phani Krishna Kandala

Paper Title: Implementation of Correlation and Regression Models for Health Insurance Fraud in Covid-19 Environment using Actuarial and Data Science Techniques

Abstract: Fraud acts as a major deterrent to a company’s growth if uncontrolled. It challenges the fundamental value of “Trust” in the Insurance business. COVID-19 brought additional challenges of increased potential fraud to health insurance business. This work describes implementation of existing and enhanced fraud detection methods in the pre-COVID-19 and COVID-19 environments. For this purpose, we have developed an innovative enhanced fraud detection framework using actuarial and data science techniques. Triggers specific to COVID-19 are identified in addition to the existing triggers. We have also explored the relationship between insurance fraud and COVID-19. To determine this we calculated Pearson correlation coefficients of 0.86, which implies that the model is a good fit.

Keywords: Fraud detection framework, Pearson correlation, Logarithmic regression, COVID-19, actuarial techniques, data science techniques, fraud detection, fraud prevention, fraud triggers.

References:
Comparative Performance Evaluation of Mobile Ad-hoc Network Routing Protocols using NS2 Simulator

**Abstract:** A Mobile Ad-hoc Network (MANET) is an independent assortment of mobile users that communicate over moderately bandwidth constrained wireless links. MANET’s topology is dynamic that can change rapidly because the nodes move freely and can organize themselves randomly; has the advantage of being quickly deployable. Although numerous routing protocols have been proposed for mobile ad hoc networks, there is no universal scheme that works well in scenarios with different network sizes, traffic loads and node mobility patterns, so mobile ad hoc routing protocol election presents a great challenge. In this paper, an attempt has been made to compare the performance of three routing protocols in Mobile Ad-hoc Networks – Ad-Hoc On-demand Distance Vector (AODV), Dynamic Source Routing (DSR) and Destination Sequenced Distance Vector (DSVD). We have evaluated the performance of these routing protocols with varying the number of mobile nodes and packet sizes on the basis of four important metrics such as packet delivery ratio, average end to end delay, normalized routing overhead and throughput. Network Simulator version 2.35 (NS-2.35) is used as the simulation tool for evaluating these performance metrics. The outcome of this research shows that AODV protocol outperforms DSDV and DSR protocols.

**Keywords:** MANET, AODV, DSR, DSDV, NS2, Performance Metrics, Analysis

**References:**

Authors: Rutuja Gugale, Pratiksha Sonar, Anagha Mandeekar, Sonali Ubale, Vaishali Latke

Paper Title: Brain Tumor Detection using Deep Learning

Abstract: Nowadays the leading techniques for diagnosing and revealing the different diseases are image processing. And there is an increase in the cases of cancer these days. The un restricted development of cells cause’s lumps which leads to brain tumor also called glioblastoma. There are mainly two types of tumor benign which has covering over the tumor and malignant is the one which spreads throughout the places. Earlier the development of unrestricted cells used to be diagnosed by doctors physically through monitoring the image by which the results were not used to be precise sometimes. But time along boarding of medical fields lead to different medical facilities by which the results could be precise. The broadly approach method of imaging that scrutinizes the internal structure of the human race is Magnetic resonance Imaging. This approach of imaging techniques is also used for detecting brain tumors. The detection of glioblastoma processes has machine vision methods such as Image pre-processing, Segmentation in Image, Feature extraction and classification. Several image segmentation and image classification techniques are available for detecting tumor of the brain. Convolution neural networks (CNN) based classifiers are proposed to prevail the limitations. This CNN is such a classifier which is used to differentiate between the competent data and the trail data, from which the results could be obtained.

Keywords: Brain tumor Detection, Watershed Algorithm, Capsule Network, Convolutional Neural Network, MRI Images, Tumor Boundary.

References:

Authors: Mayu S.Bankar, Vidya P. Kodgirwar

Paper Title: Electrical Pole Climbing Robot for Fault Detection using Wi-Fi

Abstract: This project is to create electrical pole climbing robot which can be used to reduce risk of electrician to connect the distribution lines for supplying purposes. Pole climbing robot, nowadays, is very common and interesting idea, which mainly works by connecting the distribution lines according to the directions given to it. In this modern era robots are being developed for various purposes to accomplish many tasks which seem to be complex and life endangering for humans. Benefits of using robots have been immense in terms of risk-free, speed and efficiency of doing required tasks compared to that of humans. The main objective of this work is to save human lives. Considering on that issue, a pole climbing robot has been designed. However, further modifications of this work might be able to perform the wiring and repairing tasks instead of an electrician. The developed robot works on the principle of linear motor, which is partially autonomous. With the installation of this project, risk of human injuries and death can be minimized while working in the distribution lines which is the main consideration of this project.

Keywords: Wi-Fi, Microcontroller, Robot Arms, DC motors, Power supply, Gripper.

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Abstract: Augmented Reality provides an interactive experience by imposing virtual objects over real world environment and used in different field in learning, entertainment, or edutainment by developing higher order cognitive and practical learning skills. With the infusion of digital technology, nowadays all the educational institutions adapted the online mode learning environment like smart classroom for content delivery, Webcast Lecture by using AR. AR attracts research attention for its ability to allow students to be immersed in realistic experiences. AR will allow learners too deep about real time and cognitive skill development experiences. Recent scenario in education and academic sectors needs emerging technologies for learning system. In that scenario AR technology will be used to create new type of self-learning and automated application in academic. This technology is used to enhance the teaching and learning for students in effective way and efficient too. Even this technology will attract the students to learn fast and improve the cognitive skill also. This is a new standard, merging features from ubiquitous computing, tangible computing, and social computing. The benefits of this proposed component include inspiring deep and thoughtful education, in real world problems and challenges can be refining the creative problem solving abilities while also as long as exposure/ new perception. This proposed research paper goals to improve present educational system using Augmented Reality.

Keywords: Augmented Reality, Learning, Education, Social Computing.

References:
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Assessing the sustainability of General Insurance Business through Real Time Monitoring of KPIs using Recurrent Neural Network

Abstract: A company’s sustainability is driven significantly by its operational efficiency. Operational efficiency plays a significant role in the growth and the profitability of a company. Thus, operational efficiency of a company forms the basis for the metrics known as the Key Performance Indicators (KPIs). These KPIs bridge the concept of performance an operation and a means to measure the same quantitatively. In this work, we used Recurrent Neural Network (RNN) with the Long Short Term Memory (LSTM) cells for projecting the public disclosure data of select General Insurance (GI) companies operating in India to the future. We use this data to calculate the KPIs pertaining to the operations of general insurance companies and calculate how the operations of the GI company affect its performance at various levels. Since this analysis is done for the projected data, we get a framework to assess the sustainability of the GI companies by monitoring these KPIs in real-time. The complex RNN and LSTM algorithms were implemented with the help of the Google Colaboratory platform by using the GPUs of the Google Hardware with the help of the Cloud Computing framework.

Keywords: Actuarial Analysis, General Insurance, Public Disclosure, RNN, LSTM, Google Colaboratory

References:
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