2nd International Conference on Emerging Trends on Engineering Science, Technology and Management

(ICETESTM-19)

Trivandrum, Kerala

10th -11th May 2019

Institute For Engineering Research and Publication (IFERP)

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Editorial:

We cordially invite you to attend the ***2nd International Conference on Emerging Trends on Engineering Science, Technology and Management (ICETESTM-19)*** which will be held at ***Keys Hotel, Trivandrum, Kerala*** on ***May 10th-11th, 2019***. The main objective of ***ICETESTM*** is to provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in relevant fields of Engineering Science, Technology and Management. This conference will provide opportunities for the delegates to exchange new ideas and experience face to face, to establish business or research relationship and to find global partners for future collaboration.

These proceedings collect the up-to-date, comprehensive and worldwide state-of-art knowledge on cutting edge development of academia as well as industries. All accepted papers were subjected to strict peer-reviewing by a panel of expert referees. The papers have been selected for these proceedings because of their quality and the relevance to the conference. We hope these proceedings will not only provide the readers a broad overview of the latest research results but also will provide the readers a valuable summary and reference in these fields.

The conference is supported by many universities, research institutes and colleges. Many professors played an important role in the successful holding of the conference, so we would like to take this opportunity to express our sincere gratitude and highest respects to them. They have worked very hard in reviewing papers and making valuable suggestions for the authors to improve their work. We also would like to express our gratitude to the external reviewers, for providing extra help in the review process, and to the authors for contributing their research result to the conference.

Since April 2019, the Organizing Committees have received more than 128 manuscript papers, and the papers cover all the aspects in Electronics, Computer Science, Information Technology, Science Engineering and Technology and Management. Finally, after review, about 57 papers were included to the proceedings of ***ICETESTM-2019***.

We would like to extend our appreciation to all participants in the conference for their great contribution to the success of ***ICETESTM-2019*** We would like to thank the keynote and individual speakers and all participating authors for their hard work and time. We also sincerely appreciate the work by the technical program committee and all reviewers, whose contributions made this conference possible. We would like to extend our thanks to all the referees for their constructive comments on all papers; especially, we would like to thank to organizing committee for their hard work.

Acknowledgement

IFERP is hosting the ***2nd International Conference on Emerging Trends on Engineering Science, Technology and Management*** this year in month of May. The main objective of ICETESTM is to grant the amazing opportunity to learn about groundbreaking developments in modern industry, talk through difficult workplace scenarios with peers who experience the same pain points, and experience enormous growth and development as a professional. There will be no shortage of continuous networking opportunities and informational sessions. The sessions serve as an excellent opportunity to soak up information from widely respected experts. Connecting with fellow professionals and sharing the success stories of your firm is an excellent way to build relations and become known as a thought leader.

I express my hearty gratitude to all my Colleagues, Staffs, Professors, Reviewers and Members of organizing committee for their hearty and dedicated support to make this conference successful. I am also thankful to all our delegates for their pain staking effort to travel such a long distance to attain this conference.

Mr. Ankit Rath
Chief Scientific Officer (CSO)
Institute for Engineering Research and Publication (IFERP)

2nd International Conference on Emerging Trends on Engineering Science, Technology and Management (ICETESTM-19)

Keynote Speaker

Prof. (Dr.) Jatinder Singh Bal
Vice-Chancellor
Sant Baba Bhag Singh University
Jalandhar, Punjab, India

Message

As a Vice Chancellor of Sant Baba Bhag Singh University (SBBSU), Punjab, India, it is great pleasure to announce that Institute For Engineering Research and Publication (IFERP) is going to organize 2nd International Conference on Emerging Trends on Engineering Science, Technology and Management (ICETESTM-19) At Keys Hotel, Trivandrum on 10th - 11th May, 2019

I warmly welcome all the delegates in this scientific meeting staged to address the issues in a wide spectrum of interrelated disciplines. I expect the participation of intellectuals from the various specialities in engineering and management. The present-day life is faced with plethora of problems related to management. Engineering and technologies issues requiring immediate addressal and redressal in a sustainable waythrough interdisciplinary approaches and collaborations worldwide. The conference will surely act as a great stimulus and active platform for students, researchers, academicians, industrial professionals and business delegates belonging to different disciplines from all over the world to present their research works, share ideas and strategies with each other in various areas of management, Engineering and Technology. Thecerebral congregation in question can be an auspicious opportunity to interact with eminent experts of diverse disciplines, to establish research collaborations and to find suitable sites for scientific exchange of ideas and techniques. I believe this conference will help researchers in enhancing their capacities through genuine discussions and healthy interactions.

I express my sincere gratitude to all the delegates and our organising partners for making this conference an international knowledge sharing and dissemination event.

May IMAC DUBAI-2019 be blessed with scintillating success!

Prof. (Dr.) Jatinder Singh Bal

Biography

Dr. Jatinder Singh received his M.Tech degree from Punjabi University, Patiala with 84% marks and Ph.D. from the same university in Computer Engineering with specialization in Wireless Network Security. He is having 22 years of industrial, teaching, research and administrative experience.

He is a prolific author in the field of Computer Engineering. He has published more than 200 research papers in International & National journals of repute. Apart from that, he has 22 highly acclaimed text/research to his credit which are recommended as text books in many Indian and foreign universities. He is also a life member of several professional scientific organizations (ISTE, CSI, IETE etc) and has lectured widely at academic institutions. He is the chief editor of international journals of network Security and the reviewer of many international journals including ACM, IEEE, Springer, Elsevier etc. He got many National and International awards including

1. Best Research Scholar Award by UGC in 2007
2. Excellence Service Award by PB. Govt. in 2008,
3. Research & Development Gem of DBIEM Award 2011
4. Vigyan Ratna Award by Honorable Governor of Punjab in 2012
5. Bharat Gaurav Award by AITMC New Delhi 2013
6. Community Service Award 2016 bu CEE new Delhi
7. Honored by British Government in the British Parliament House London, UK in 2017
8. Young and Dynamic Vice chancellor of the Country Award 2017 by Confederation of Indian Universities.
9. Young and Innovative Vice Chancellor, By Punjab Govt. Mr Navjot singh Sidhu at VMS College Batala
10. Appreciation Award, Minister of Defense, Canadian Government. Mr Harjit Singh Sajjan, Canada in 2018

and many more awards by the different organization.

He has guided 12 PhD and 6 under guidance and 18 M.Tech. Candidates. He lectured widely in various countries like Canada, UK, Thailand, UAE, Malaysia and othes. Invited speaker in various foreign universities like University of British Columbia, Vancouver, KPU Canada, Trent University Pete bough Canada, Reading University, Edinburgh University, Scotland, Asian Institute of Technology. He is the members of various committees in various Indian and freign Universities. He interacted with Honorable PM and president in the meetings on the emerging issues in International ranking of higher education.

ICETESTM-19

2nd International Conference on Emerging Trends on Engineering Science, Technology and Management

Trivandrum, Kerala, May 10th – 11th, 2019

Organizing Committee

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ICETESTM-19

2nd International Conference on Emerging Trends on Engineering Science, Technology and Management

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ABSTRACTS

ICETESTM - 19

Organized by

Institute For Engineering Research and Publication (IFERP)

2nd International Conference on Emerging Trends on Engineering Science, Technology and Management - 19
10th-11th, May 2019 at Trivandrum, Kerala.

Design and Fabrication of Self Balancing Mass Commuting Pod using Gyroscope

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Abstract

The arising problem of global traffic on roads is mainly due to the ever increasing amount of vehicles being mass produced every year thus causing congestion and larger time gaps to commute between places. The proposed design is a large pod which is mounted on two legs that helps it travel over the traffic present on the road. The pod is self-balancing with the help of a gyroscope and a gimbal system. The gyroscope here acts as an actuator and not a sensor. When the vehicle tends to tilt from the vertical axis, an induced torque is applied to the gyroscope system and the vehicle will be corrected back to the axis due to the opposing gyroscopic reaction moment. We have designed and fabricated a system which will be able to efficiently transport the same amount of people travelling in a metro system without having to build the structures for it thus reducing costs. It is designed to run purely on solar energy with the help of solar panels on top of it. The traffic below will be unaffected as it requires a single rail path in between both the sides of the roads and also the space above the ground is highly unutilized. The legs which are contractible is realized using a scissor lift mechanism which can be replaced with a much more efficient hydraulic system for future uses. The added advantage of the system is that it can manually be run on custom paths and not just a pre-defined path

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making it useful in scenarios of extreme emergencies such a floods and also for ambulances and fire trucks built using this design.

Keywords

Self-balancing, gyroscope, solar energy

Noise Interjector for Piracy Avoidance

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Abstract

Film Piracy has been on a rise, the film which is being newly released, is being captured in theatres and is being uploaded into online websites. This causes a great problem for the people who work tirelessly for a film, the results they expect for their hard work is being indirectly stolen. There have been many ideas proposed to address this issue like watermarking techniques, IR based Anti-Piracy screen. One of the ways to tackle this issue is by injecting noises into microphone via its property of non-linearity at high frequencies. We propose to solve the issue by initially designing a system that consists of a noise generator.

Index Terms

Noises, Microphone, Non Linearity, High Frequencies

Power Quality Enhancement in Microgrid

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Abstract

The expansion of non-direct loads and the expanding infiltration of Distributed Energy Resources (DER) in Medium-Voltage (MV) and Low-Voltage (LV) conveyance networks, make it more hard to keep up the power quality dimensions in residential electrical grids, particularly in the instance of frail matrices. The power quality issue is get new measurement because of the power system rebuilding and moving trends towards distributed generation. To improve the performance of ac power systems, we need to manage reactive power in an effective way. To conquer the issues of power quality, FACTS devices are present. A D-STATCOM is one of the FACTS device makes it productive answers for enhancing the power quality distribution system. So as to diminish the power quality issues, the relevance of D-STATCOM enhanced. A D-STATCOM injects a current into the system to provide for the reactive component of the load current, reduces losses in the feeder and the voltage source inverter. The proposed scheme allows D-STATCOM to tackle power quality issues by providing power factor correction, harmonic elimination load balancing and voltage regulation based on the load requirement. The proposed topology reflects new trends of consumers toward electronic polluting loads and integration of renewable sources which in fact may lead to the scope of a reliable and sustainable supply.

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To study the Advantages and Limitations of AI based App in the Indian context for the Visually Challenged

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Abstract

Artificial Intelligence (AI) is going to be the frontrunner in any of the modern day communication going forward and so this research is done to find out how AI helps in visual imagery recognition for enhancing the accessibility of the visually impaired through apps like AI poly AI for recognizing people, texts, objects and colors. 40 visually impaired from the Atmadeepam Society (Nagpur, India) who are computer literate and smart phone users considered for the study through the mixed methods research where quantitative analysis is done. In addition, Qualitative analysis through Phenomenology method is done. Almost 80 percent of the low vision respondents are in favor of these accessibility apps being completely helpful whereas the rest have faced certain inconvenience due to these apps in functioning. From the findings, it is evident that these visually impaired people are extremely happy in using these accessibility tools to overcome their navigation challenges and also get value added quotient added to their knowledge through the text feature of these AI enabled apps. On the other hand, research finding also shows a set of people who are not convinced fully with the AI based apps functioning. These were typically based on incorrect object identification, difficulty in understanding the accent and lack the facility for regional language converter. The visually impaired will be better equipped to function due to raised confidence, positive attitude and thereby gaining a place in the society as active contributors to the economy that will assist in disability integration. The paper attempts to study the modern AI accessibility apps especially related to object recognition in the Indian context for the visually impaired.

Index Terms

Artificial Intelligence (AI), App(s), Image Recognition, accessibility, Visually Impaired and Indian context

Sensor Based Waste Segregations

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Abstract

In recent year's collection and segregation of waste is the major challenge faced by all metropolitan cities worldwide; this is due to the rapid increase in population, industrialization and urbanization. There is lack of knowledge about segregation of waste at the domestic level. The major problems faced due to improper waste management include health hazards to human kind, environmental issues etc. The main objective of this paper is effective and efficient methods of waste collection and segregation at domestic level based on their nature of composition i.e. metal, plastic and organic, the waste is stored accordingly in their respective segments of the dustbin. Picking up garbage from the public areas such as on street corners, in parks or on campuses consumes more resources because workers have to drive their large vehicles to every garbage collection point to check if bin is full or not. The use of sensor integrated waste segregations saves a lot of fuel and work hours. In this paper, an approach linking the basic electronic sensors to garbage collectors will be resulting in saving the fuel, work hours and money. In this approach, sensors are placed in the rotating conveyor belts and bins located at public areas, to detect the types of waste and to sense the level of the garbage in the bin. When garbage reaches the threshold limit, the status of the bin is updated in the cloud, and this status can be accessed by the concerned authorities and an immediate measure can be taken

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for the cost-effective disposal. So, continuous monitoring of garbage bins will helps to keep environment clean and safe.

Keywords

Segregation, Arduino, proximity sensor, Conveyor belt

Assessment of Day Lighting Performance of Institutional Building

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Abstract

Using natural light to illuminate the interiors of buildings can significantly reduce both lighting electricity consumption and peak demand for electricity. In addition, there are health and color rendering benefits associated with full-spectrum natural light. However, widespread adoption of day lighting techniques has been hampered by the lack of both daylight resource information and simple, reliable methods of testing day lighting designs. The luminous efficacy of daylight is generally superior to that of commercially available electric lamps, which means that sunlight has the potential for reducing building cooling loads by replacing electric light of higher heat content. Natural light is plentiful during the hot summer periods when many utilities experience their peak demand, suggesting that there is a potential for substantially reducing peak electric demand, with consequent demand-charge savings for the building owners and reduced capacity requirements for the utility. Considering the above parameters a study was conducted to assess the daylight performance of a space and to analyze how day lighting and various parameters related to day lighting which affect the visual comfort of a space. Initially a structure of the aim and objectives was formed and a literature study on the topic day lighting was done. Thereafter a space was selected and a detailed live case study was done by measuring the daylight intensity and the data were analysed with respect to various factors affecting the day lighting phenomena and the problems or flaws of the particular space were identified. Attempts have been made to solve the identified problems of each space using different options with the help of a working model, where the issues are replicated and various solution techniques were applied. From the study it could be concluded that the issue of over lighting and glare can be reduced by reducing the width or height of the window openings along with extending the sunshades. Increasing the sill height of the window above the work plane can help in a even distribution of light throughout the room. Curtains and fins can be also provided in case of sunny days with can be removed when not in use which will help to reduce glare. Increasing the width of the window cannot make change in the intensity of the daylight if the surrounding areas have obstructions. Again increasing the length of the sunshade can help in controlling the glare. In addition to this selecting the surface materials with proper reflectance can help in improving the quality of the space.

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Smart Traffic Assistance System

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Abstract

Road traffic and congestions are experienced from the rise of automobile transportation. Now the amount of vehicle on roads are increasing, accident reports and pollution problems are also a threat for environment. The rise of congestions on traffic signal is severe, however control of traffic is necessary, it develop problems were a driver cannot make a proper decision. There have been many ideas proposed to address this issue like density based traffic signal, micro camera based traffic signal and sign detection, but these lack the assistance that can be provided to a driver and the particular environment that vehicles are facing. Hence we propose an ideal solution that assist driver in a traffic junction, providing the updated information about the traffic signal and necessary warnings.

Keywords

RF transmission and reception, magnetometer

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Probabilistic Seismic hazard assessment for Amaravathi region, Andhra Pradesh

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Abstract

This article explains an analytical attempt that estimates seismic hazard for Amaravathi city. The present study has been carried out contemplating the available faults and epicentral data within a radius of 300km of the Amaravathi region. The homogenous earthquake catalogue has been prepared for Amaravathi region by Steep's method. The seismic hazard parameters "a" and "b" for Amaravathi city were evaluated by Gutenberg-Ritcher method. The "a" and "b" values obtained as 4.69, 0.6468 respectively. The total 353 epicenters and 31 faults were considered in this seismic analysis for the estimate of PSHA for Amaravathi. The ground motion produced by the faults at this site has been estimated by using the region-specific Ground Motion Prediction Equation (GMPE) developed by the raghukanth and lyenger (2007). The probability of occurrence of different magnitude classes was estimated. The hazard curves and mean annual rate of exceedance for Peak Ground Acceleration were calculated by using ground motion estimated in this area. The Uniform Hazard Response Spectrum (UHRS) for the ranging time periods between 0.1 – 4 seconds was prepared. PGA values for Amaravati region was found to be in between 0.001g to 0.3g from seismic hazard map that was prepared in this study.

Keywords

Peak Ground Acceleration, PSHA, Hazard Assessment, seismicity, Amaravathi city

Design, Development and Implementation of an IoT Based Intelligent Ambient Controller For LVDC Enabled Green Buildings

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Abstract

Green buildings and IoTs are two important concepts in now a days. An IoT based smart home concept have much importance in this era where energy conception and wastage rates are increasing drastically. So an intelligent ambient controller that controls indoor lighting inaccordance with external lighting and human presence requires much importance. IoT communication via MQTT protocol is utilized in this smart home concept. MQTT is an ISO standard publish – subscribe based messaging protocol and requires a message broker. SparkFun TSL2561 luminosity sensor for measuring external light intensity and RCWL0516 doppler radar microwave motion sensor module for detecting human presence are used in this work.

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Dynamic 6*6 Modified Booth Multiplier Using Hybrid Adder

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Abstract

Multiplier is a basic building block in many signal processing systems. The speed of multiplier determines the speed of the system. In this paper, a method for Multiplication is proposed by combining Modified Booth algorithm, Hybrid adder design for Wallace tree adder architecture and True Single Phase Clock Logic (TSPCL) logic for partial product generation. Modified Booth Multiplier reduces the number of partial products and has least latency as compared to other multiplier designs. Hybrid adder approach is used where power reduction in addition process is desired. TSPCL approach is used to reduce delay in partial product generation. In this work, a 6×6 modified booth multiplier is implemented employing TSPCL approach for partial product generation and hybrid adder for partial product addition. The implementation results are compared with that of a conventional booth multiplier. Simulations are carried out using 0.18µm CMOS technology with a supply voltage of 1.8V. The proposed technique consumes 11.96% less power than that of the conventional approach.

Key words

Modified Booth multiplier, hybrid adder, True Single Phase Clocked Logic (TSPCL), Wallace tree, Kogge Stone adder

Entrepreneurship Challenges in Behavioral Economics Perspectives – Some Insights

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Abstract

Most narratives on entrepreneurship developed under the mainstream liberal economics are based on the assumption that economic rationality on the part of entrepreneurs, big and small, would promote economic activity which would lead to economic development of countries. The assumption of economic rationality is seriously questioned by insights from the emerging field of behavioral economics. The present paper attempts to interrogate the assumption of economic rationality on the part of the prototypical entrepreneur and throws some light on the theoretical and policy implications of this exercise. Some of the important behavioral economic concepts are used in the discussion. Entrepreneurship challenges in developing countries like India may be analyzed in terms of 'Easterlin Paradox' also. Positional entrepreneurship is a new concept developed in the present paper on the basis of behavioral economics insights. The major thrust of the present paper is that the relevance and effectiveness of mainstream entrepreneurship narratives and training initiatives have to be questioned and skill development and formal sector employment initiatives should be given emphasis. At the end of the paper, policy implications and suggestions for further research are given.

Index Terms

Entrepreneurship Narratives, Behavioral Economics, Positional Entrepreneurship, Economic Development.

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Experimental Analysis on the Residential Building of Earthquake Prone Areas Using Shake Table Test

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Abstract

This paper highlights the experimental analysis on the Shake Table Test. The Shake Table is an equipment by which real earthquake conditions, forces and vibrations on any structure can be experimented, recorded and studied. When an earthquake occurs over an area it leads to the pause of the normal day to day life, havoc damages, loosing of human lives and failure of the structures. In this study the model is mounted is on the shake table and the vibrations are recorded. The Limit State Design criteria is considered from IS 456:2000 and for Seismic analysis the Load Combination is considered from IS 1893(PART-I):2002.

Keywords:

Earthquake, Shake Table, Base Isolation

The Impact of Human Element in Shipping Industry

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Abstract

Today there are less number of active seafarers in our midst,"Besides", they are the great important element in shipping and slowly this industry is beginning to realize the central importance of seafarers. The crisis is coming and the industry is awakening to the fact it must deal with the human element in its business. Therefore in this paper it is intended to establish priorities to human factor, According to Ergonomics the scientific study concerned with understanding of interactions among humans and other elements of a system. Furthermore by the exploratory study it was observed that human error contributing to 75% & remaining 25% technical failures, According to the study it is reveal that taking risk in work, inadequate training, not following rules & regulations, habitability issues (engine noise, sea sick, fatigue, vibration, illuminations, sleep disturbance, temperature), No team work, lack of communication, lack of application of safety, inadequate knowledge, crew negligence, inattention, overconfidence, work schedules[11]. A valuable ergonomics will safe the human element & increases the productivity. This paper is to predict the outcome of human impact on marine accidents.

Keywords:

Safety at sea, marine accident, Human factor, Human error, Automation

Ideal Crop Recommendation Module

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Abstract

In this era of digital revolution, Machine learning has become one of the top most emerging technologies. The machine learning algorithms are being used in various fields and applications such as image recognition, speech recognition, classification, prediction, recommendation systems, etc. Agriculture, the backbone of Indian economy, contributes to the overall economic growth of our country. To improve the current productivity status, Ideal Crop Recommendation Module uses machine learning algorithms to guide the farmers to grow the suitable crop based on soil attributes. This system can also be used to predict the yield of certain crops given the region and season.

Index Terms

Agriculture, Machine Learning, Precision Farming, KNN, Naïve Bayes, Linear Regression

P.F Corrections of Induction Motors Used On Board

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Abstract

Induction motors is popularly used on board ship for various machinery like crane motor, propulsion motor, blower motor, ballast water management, sea water pump motor, lifts, large capacity exhaust fans, Engine auxiliary pumps, Engine blower fan motor, winch motor, Windlass motor, freshwater and also miniature synchronous motor. In sea environment Induction motors are almost widely used Electrical motors due to robust construction, low cost, simple, high reliability factor. Maximum of power is utilized by these types of motors. Since the loads are inductive in nature it consumes more reactive powers. This causes increase in current and the consumption of active power increases. If the power factors lags for certain level then there is chance of black out. Therefore to avoid such problems we must supply extra reactive power to the motor. In shipping industry multiple large motors are induction motors, so it is needed to improve power factor correction by adding capacitive loads. There is a demand to improve the power factor for good power & fuel efficiency. Furthermore this paper proposed for power factor improvement in induction motors by using fine static VAR capacitor.

Index Terms

P.F- power factor, inductive load, reactive power, power quality

Differential Diagnosis of Tuberculosis and Pneumonia using Machine Learning

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Abstract

Machine learning has become one of the top most emerging technologies in this era of digital revolution. The machine learning algorithms are being used in various fields and applications such as image recognition, speech recognition, classification, prediction, medical diagnosis etc. In medical domain, machine learning techniques have been successfully implemented to improve the accuracy of medical diagnosis and also to improve the efficiency and quality of health care. In this paper, we have analyzed the existing health care practice system and have proposed how machine learning techniques can be used for differential diagnosis of Tuberculosis and Pneumonia which are often misdiagnosed due to similar symptoms at early stages.

Keywords

Machine Learning, Tuberculosis, Pneumonia, Differential diagnosis, ID3, Naïve Bayes, Random Forest

Integrating the Sam Sensor with the Mars Rover Simulator

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Abstract

A computer simulation of complex hardware and software amalgamated bot is often a better alternative to traditional scaled-up or scaled-down physical replications of the bots. In accordance, our project encompasses the simulation of the Mars Rover in a local machine. In its implementation, it essentially consists of two parts, the Rover and the Mission Control and Command Center. The Rover and Mission Control communicate with each other through a common communications protocol. The simulation also incorporates logging for status and analysis, making debugging possible. The simulation takes into account sensors such as the REMS, radio, spectrometer, APXS, DAN and a radiation detector. In addition, there is a service layer that fetches relevant data for various rover sensors. The paper throws light on the implementation of the SAM(Sample Analysis on Mars) suite of instruments for the Mars Rover simulation.

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Cognitive Radio Networks -Technology and Challenges: A Review

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Abstract
Cognitive radio (CR) is a smart radio used as a communication technique which is capable of detecting vacant communication channels in selected spectrum and assign these free channels to the users. Spectrum assigned to a particular user may not be used at a particular time or location which leads to spectrum holes or white spaces. This leads to inappropriate exploitation of spectrum. One solution for spectrum management is dynamic spectrum access (DSA). This helps in optimizing the spectrum and helps in minimizing the interference to different users. Main elements of CRN namely spectrum sensing, spectrum sharing and spectrum mobility are discussed in detail along with related issues.

Keywords
CR, CRN, RF, white spaces, dynamic spectrum access (DSA), opportunistic spectrum access (OSA), spectrum sensing, spectrum sharing, spectrum mobility

A Novel Algorithm for Community and Fraud Detection in Complex Networks based on Firefly Algorithm

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Abstract

These days we are surrounded with networks like social networks, biological networks, technological Networks etc. They exist almost everywhere. Many researchers have shown their interest in these complex networks because of their wide range of applications. These complex networks have many properties like scale free networks, transitivity, presence of community structure etc. Community detection is one of the most active fields in complex networks because it has many practical applications. In this paper, we concentrate on both community and fraud detection to minimize the link and node failures in the complex networks. We have worked with fittest node approach to detecting communities using firefly algorithm. Fraud detection is achieved by contingency table terminology with multi-link metrics. The performance of the FA is compared with ANN and GA methods. The datasets have been taken from the UCI machine learning repository.

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Network densification in 5G: A Review

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Abstract
Network densification is an essential mechanism expected to enable next generation 5G networks to meet the 1000-fold increase in capacity. This article explores network densification as the key mechanism for wireless evolution over the next decade. Network densification includes Spectral densification (densification over space) and spatial aggregation (densification over frequency). Key enablers of network densification such as heterogeneous network, D2D, NSC are discussed. Challenges associated with network densification such as energy efficiency, interference, handoff are also discussed.

Keywords
Network densification, D2D, NSC, Heterogeneous networks, Energy efficiency.

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Seismic analysis and design of a Multi-Storeyed building by using various materials

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Abstract

The precept goal of this Project is to analyse and layout a multi-storied constructing [g + 10 (3 dimensional frame)] the use of STAAD Pro for unique cases like regular constructing seismic resist building and metal body building. The design involves load calculations and analysing the entire shape by means of STAAD.Pro. The layout methods used in STAAD.Pro analysis are limit kingdom layout conforming to Indian fashionable code of practice for normal layout, dynamic evaluation for seismic resist constructing and metallic evaluation by using using Indian requirements. STAAD.Pro functions a cutting-edge user interface, visualization tools, effective analysis and layout engines with advanced finite element and dynamic evaluation competencies. From version technology, analysis and layout to visualization and end result verification, STAAD.Pro is the Professional's desire. Initially we began with the analysis of simple 2 dimensional frames and manually checked the accuracy of the software program with our effects. The effects Proved to be very correct. We analysed and designed a g+1 storey building [3-D frame] to begin with for all feasible load mixtures [dead, live, wind and seismic loads].

Keywords

Normal building, Seismic resist building, Steel building, STAAD.Pro

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PriWhisper+: An Enhanced Acoustic Short Range Communication for Andriod Phones

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Abstract

The recent proliferation of IoT device coupled with the demand for an inexpensive way of transmitting data has been the primary factors behind the popularity of the short-range acoustic communication. It enables a seamless transfer of digital information via soundwaves, using device's loudspeaker and microphone only and the whole interaction takes place without the need for network connection. Due to the limited computational power of the IoT device, the short-range acoustic communication system has adopted the friendly jamming technology to save energy. However, the security of the friendly jamming technology in mobile applications has not been thoroughly studied. When propagating sound in public, the soundwaves are subject to eavesdropping by nature. In particular, the friendly jamming technology is vulnerable to the separation attacks which can separate data signals from mixed signals. In this paper, we propose PriWhisper+ - a secure acoustic short-range communication system between IoT devices. We analyze the security of PriWhisper+ via information theory and propose physical security enhancement mechanisms for acoustic communication by combining device mobility with secret sharing scheme. We then design a secure data communication scheme that transmits data in acoustic signals. This scheme can be applied in many security-sensitive situations, such as device pairing, contactless payments, and privacy data sharing. At last, we evaluate the performance of our proposed PriWhisper+ by extensive experiments on Android smartphones. The results of the experiment show that the PriWhisper+ can protect the data confidentiality within thirty centimeters of communication range.

Index Terms

Acoustic short-range communication, blind signal segmentation (BSS), Internet of things, independent component analysis (ICA), security and privacy, friendly jamming, smartphone wireless communication

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Entity Resolution for Big Data using Combination of Supervised Meta-Blocking and pay-as-you-go configuration

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Abstract

Entity resolution refers to the method of identifying the same real world object from multiple data sets. In Data cleaning and data integration application, entity resolution is an important process. When data is large the task of entity resolution becomes complex and time consuming. End-to-end entity resolution proposal involves stages like blocking (efficiently identifies duplicates), detailed comparison (refines blocking output) and clustering (identifies the set of records which refer to the same entity). In this paper, an approach for feedback based optimization of complete entity resolution is proposed in which supervised meta-blocking is used for blocking stage. Feedback might be obtained from crowds on candidate duplicates. This paper proposes a technique for entity resolution which does optimization of each phase of entity resolution with benefits of supervised Meta-blocking to improve performance of entity resolution.

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A Review on Influence of Admixtures on Mechanical Properties of Fibre Reinforced Concrete

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Abstract
This paper mainly outlines the case study on the experimental investigation carried out to determine the mechanical properties of the coir fibre reinforced high strength concrete of grade M50 incorporating fly ash and densified silica fume (DSF). Three totally different compositions of fiber fibre concrete (CFRC) were created. 1st CFRC with out additives ,second CFRC created by 100% replacement of cement mass with ash ,in third compositon 10%of cement mass was replaced with densified silica fume. In every mentioned admixiture , fiber was more in its natural length by zero.4% of the winker volume . the investigation reveled that adding fiber fibers to high strength concrete caused a sligth reduction in density and compreesive strength of concrete by regarding 5% and 1.2 % severally.

Index Terms
High Strength Concrete, Coir Fibre, Densified Silica Fume, Fly Ash

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The impact of moonlighting practices on organizational commitment with reference to private college teachers

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Abstract

The Scenario and environment in which organizations operate has undergone drastic change, owing to the advancement in technology and due to globalization. This change has affected the economy in many ways. Due to various economic conditions and unstable employment opportunities, the concept of Moonlighting has increased. Employees often take up a second job or business along with their main job for a variety of reasons. This is called Moonlighting. Employees when committed towards their organization are said to be more productive which indeed brings in result for the firm. With the introduction of Moonlighting the organizational commitment has further reduced. The education Industry is booming across the world and it generates large scale revenues and employment. Teachers all across the nation experience financial difficulty in their profession and are tend to practice moonlighting than any other employees. This paper tries to analyze the "Impact of Moonlighting" on the performance of teachers and whether it affects the Organizational Commitment of Teachers.

Index Terms

Moonlighting, Organizational Commitment, Education Industry, Performance of Teachers

Clustering Analysis of Gene Expression Profile: An Overview

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Abstract

Using DNA microarray technology, biologists get a large number of gene expression time series data. Clustering is a significant approach in extracting biological information from these data. This paper discusses HMM-based hierarchical clustering (HMM-HC) and Genetic clustering algorithm (GA) to analyse gene expression time series data. Some key research challenges associated with clustering analysis are also included.

Index Terms

Clustering analysis, Gene Expression, Hidden Markov Model, Hierarchical clustering, Genetic algorithm

Experimental Study on Properties of High Strength Concrete

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Abstract

Hybrid Fibre ferroconcrete a composite may be termed as hybrid, if 2 or additional kinds of fibres ar rationally combined during a common matrix to provide composite that drives benefits from each of the individual fibres and Exhibits a synergetic response. Addition of short discontinuous fibres plays a crucial role within the improvement of mechanical properties of Concrete. It will increase elastic modulus; Decreases crispness controls cracks initiation and its resultant Growth and propagation. Deboning and pull out of the fibre require more energy absorption, resulting in a substantial increase in the toughness and fracture resistance of the materials to the cyclic And dynamic loads.

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Study and Analysis of Protection Scheme of Digital Substation using IEC61850-9-2 Process Bus Technology

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Abstract

Substations are a fundamental part in electrical energy transmission and distribution. The role of a substation is to transfer and transform electrical energy by stepping up or down the voltage. To do this, high voltage switching equipment and power transformers are used, in addition to instrument transformers that supply the status of the primary system to the secondary equipment. Substation Automation Systems are then used to control, protect and monitor the substations. The IEC 61850 standard developed digital substation with most advanced techniques. The IEC 61850 standard define in its sub-clauses IEC 600448 and IEC 61850-9-2 about digital interface, digital communication and Sampled Values transmission over an Ethernet link called Process Bus. Process Bus technology mainly developed in order to reduce the usage of copper wiring at substation control by introducing IEC 61850-9-2 digital interface.

Index Terms

Process Bus, Merging Unit, IEC61850, IEDs, SCADA

Soft Computing Techniques and their Comparison

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Abstract

Soft computing, in contrast to conventional computing, deals with the projected model and provides solutions to complex real life problems. Unlike hard computing, soft computing is tolerant of impressive, uncertainty, partial truth and projections. In fact, the role model of soft computing is the human mind. Soft computing is based on techniques like fuzzy logic, genetic algorithm, artificial neural network, machine learning and expert system. Although soft computing theory and technology were first introduced in the 1980s, but now it has become a major research and study area in automated control engineering. The technique of soft computing is being used successfully in many domestic, commercial and industrial applications nowadays. With the decrease in the cost of low cost and very high performance digital processor and the cost of memory chips, it is clear that the techniques and application areas of soft computing will continue to expand. This paper observes the current state of soft computing technologies and describes the advantages and disadvantages of soft computing compared to conventional hard computing technologies.

Index Terms

Soft computing; fuzzy logic; genetic algorithms; neural networks; ANFIS

Secured Architecture for storing and retrieval of data in an e-locker cloud: A Novel Idea

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Abstract

Digital Technologies which include Mobile Applications and Cloud Computing have emerged as debate for rapid citizen empowerment and economic growth across the globe. All major digital era is being hugely used in everyone's daily lives in all ranges of needs from hyper markets to government offices. These technologies help us to connect with everyone and to communicate all the information with each other on problems and solutions faced by us. In some cases, technologies also enable a solution for the problems in our real world. Documents mostly available in physical form, leading to huge head-ache to all. It's an always challenge to the public in submitting repeated copies of the documents. Challenge for verifying the authenticity of the documents. The objective of this paper is to come out with innovative and practical solutions to realize citizens and creating opportunities for them by harnessing digital technologies. This work is to empower every citizen with access to digital services, knowledge and information.

Index Terms

Cloud Computing, e-locker, Documents, Digital technologies

A Pilot Study on the Intention to Engage in Digital Piracy of Movies in Kerala

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Abstract

Digital Piracy is steadily growing issue due to the rapid advancement of technology. The Indian film industry is plagued by this issue for many years. This study strives to understand the intention of people who indulge in digital piracy of movies using the theory of planned behavior. It tries to enhance the model by including other antecedents such as moral judgment and self control. A sample of 70 people was selected and Exploratory Factor Analysis and multiple regression was done. It was determined that attitude and self-efficacy had a highly significant relationship with intention to engage in digital piracy of movies. Also Moral judgment was added to the model of theory of planned behavior and a final conceptual model was created.

Index Terms

Digital Piracy, Moral Judgment, Self-Efficacy, Subjective norms

Exploring the Innovative Use of Dredged Material in Construction

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Abstract

In present times, a large quantity of marine sediments is dredged from harbours and seaports for construction of the marine structures and for maintenance of the shipping channels. The dredged soil requires large area for its disposal. It is recognized that the offshore dumping of dredged soil causes disruption to the aquatic environment. This project addresses use of the dredged marine soil as a sustainable material for the construction activities, with main focus on “dredged material in partial replacement for fine aggregate in concrete” and “soil stabilization”. These may thus minimise the area of land required for disposal impoundments and also meet part of the growing demand for increasingly scarce geo resources. For this study, the dredged sand was collected from Neendakara port, Kollam. The study on partial replacement for fine aggregate in concrete involves determination of physical properties of constituent materials, compressive strength test, flexural strength test, water absorption test, alkalinity test and durability test on M30 mix concrete with fine aggregate replaced in proportions of 0%, 10%, 20%, 30%. For the analysis of soil stabilisation using dredged material, weak soil was collected from marshy land in Omalloor,Pathanamthitta. Sieve analysis, hydrometer tests, specific gravity and Atterberg limits determination were performed for the classification of the soils. Standard Proctor tests were performed to understand the compressibility behaviour of the soils and finally,

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unconfined compression tests are performed for the determination of the effective dredged sand proportioning in stabilization process.

Index Terms

Dredged sand, partial replacement, Compressive Strength, Flexural Strength, Tensile strength, Water Absorption, Alkalinity, Compressibility, soil stabilization

Autonomous Nutmeg Harvesting Robot

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Abstract

An autonomous robot that identifies mature nutmeg fruits and harvests them from any height with a 5DOF robotic arm and a linear actuation mechanism is developed. The camera processes real time video of the tree and recognises mature fruits and their location coordinates. This action is controlled by means of a raspberry pi 3 model. The image is processed with the help of OpenCV platform. This information is forwarded onto an Arduino UNO board, which controls the movement of the robotic arm. The arduino board then runs the necessary inverse kinematics algorithms and moves the joints at appropriate angles to reach the target location. Then with the help of a gripper end-effector ,the fruit is plucked and put into a container attached to the robot. Once the fruits at a certain height level are completely plucked, the robotic arm platform moves onto a greater height on its own, by means of linear actuator fixed at the bottom. Since the robot is placed at a certain radius from the trunk of the tree, it just reaches for the fruit

Index Terms

Nutmeg, autonomous, Robotic arm, Harvesting, Arduino, Computer vision

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Investigation on behaviour of FRP tubes encased concrete columns with and without Reinforcement

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Abstract

This paper presents analytical study of the Fiber Reinforced Polymer (FRP) Tubes Encased Concrete columns with and without reinforcement and comparing the results with conventional concrete. FRP encased concrete system was developed as a new structural component for a masonry building and heritage structures. FRP encased concrete columns are light in weight and good in compression, flexibility and an anti-corrosion material. An analytical model has been created to forecast the axial compressive behaviour of Glass Fiber Reinforced Polymer (GFRP) columns using Finite Element software (FEM). The energy absorption capacity and stiffness characteristics are determined in this investigation. This study involves 12 specimens of height 500 mm and diameter 200 mm with different thickness. The significance of different thickness on the axial compressive behaviour of GFRP Tube columns has been studied. The static and non-linear loading analysis is done the specimen. The results proved that the mechanical strength of GFRP tube columns are 30% higher than conventional concrete columns.

Index Terms

GFRP Tube, Fiber reinforced polymer, Axial compression, Analytical model, Tension, Compression, Energy absorption capacity, Flexibility, Concrete columns.

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Experimental and Analytical Investigation of Hybrid Textile Reinforced Concrete in Flexure

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Abstract

Textile reinforcement was made up of non-corrosive materials and its structural application is very large based upon its properties. The paper deals with the behaviour of thin shells reinforced with textile reinforced concrete in both experimentally and analytically in flexure. The size of the specimen used was 1200 mm x 250 mm x 50 mm tested under the four point bending load test. The Thin shells was reinforced with S-glass textile reinforced concrete with fully replaced the steel reinforcement. The experimental result shows that the load and deflection varies accordingly by changing the thickness of textile layers in the shells. It was observed that failure of due to inner shear slip resistance. From the results S-glass shows more load carrying capacity and deflections was controlled. Further analytical investigation was done to validate the experimental results. In analytical investigation, S-glass textile reinforced concrete with fully replaced with steel reinforcement. It was observed that the S-glass having more flexibility

Index Terms

TRC, FEM, S-glass, ABAQUS

Comparision of Effect of Admixtures on Charecteristics of Geopolymer Paste And Geopolymer Concrete

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Abstract
Geopolymer concrete is an innovative technology in the construction field. The main aim of geopolymer is to use the non-biodegradable and unusual waste into a useful material. This technology makes our earth green. The present experiment investigates the workability of geopolymer paste and geopolymer concrete by using commercially available admixtures such as poly carboxylic ether and sugar solution. Fly ash and ggbs are mixed in equal ratio. In geopolymer paste different Liquid/Solid ratios (0.4,0.45) and retarder (2%,4%) added to find out the initial setting and compressive strength. The paste used for initial setting and casted cubes for compressive strength are same. In geopolymer concrete admixture added in different combinations (2%, 4%). The tests done for geopolymer concrete are slump cone test, compressive and split tensile strength. The working time of geopolymer concrete is checked by slump cone and measured the slump from 20cm to 10cm. The casted cubes and cylinders are tested. The results show that the addition of poly carboxylic ether and sugar solution effect in the geopolymer.

Index Terms
GPC, Poly Carboxylic Ether, Sugar Solution, Retarder

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A Study on Properties of Concrete Using GGBS as Replacements for Cement and Bottom Ash as a Replacement for Fine Aggregate Using Sisal Fibers

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Abstract

This project work is aimed at reducing the usage of conventional materials with it concrete. The mechanical characteristics and durability properties is modified concrete along different proportions are tested and compared with conventional concrete. The replaced materials are GGBS (Ground Granulated Blast Furnace Slag) along cement, bottom ash with fine aggregate as well as sisal fibers are utilized to expand the split tensile strength. The objective using bottom ash is to reduce the usage of fine sand as it becoming uneconomical in the field of construction. Bottom powder is the first waste of coal and GGBS used instead of cement is the by-product obtained while manufacturing of steel. Sisal fibers are natural fibers which are added to develop the split tensile strength of modified concrete and all this material are mixed the replacements are added in desired ratios to get appropriate results compared to conventional results the main objective is to economies the construction sector, by exploring the benefits of modified concrete

Index Terms

GGBS, Bottom Ash, Sisal fibers

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An Experimental Study on Iron Based Binding Material: Ferrock

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Abstract

Over these years cement has been an inevitable part of the construction industry. Many alternatives were introduced for replacing cement though none could be a perfect one. Cement is a prominent contributor of carbon dioxide gas which is a greenhouse gas. So an alternative for cement should be such that it should not be a carbon emitter as well as have good binding properties. Ferrock is a carbon negative product with properties highly compatible to cement. Ferrock possess almost all properties as that of cement including its high strength. Moreover, the major constituents of ferrock are waste materials like iron powder, which is a by-product of shot blasting process in foundry and then it has silica in the form of glass powder that too is a waste material. Ferrock production requires only very less amount of water when comparing with cement concrete for curing. In this study, it is proposed to develop ferrock and determine its mechanical properties like compressive strength and also determines the feasibility of ferrock as a paver blocks which contribute significantly to the promotion of an environmentally sustainable future.

Index Terms

High strength concrete; Coir fibre; Densified silica fume; fly ash

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Latreal Load Behavior of Light Gauge Steel Section Enchased With Light Weight Concrete Frame

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Abstract

This project is aimed to reduce the conventional properties by including palm kernel shell, light gauge steel sections. Cold-formed steel has been widely used in modern day construction industry. The property of the cold-formed steel makes it economic and feasible. Cold-Formed Steel Column have provided its usefulness in the structural applications of the constructions like individual structural framing members and panel decks. The advantage of cold rolled steel is that it can be utilized for the production of elements with required shape to length of required dimensions. High strength to weight proportion is accomplished in cool rolled items.

In my study, analysis of composite frame 2 storey, single bay. ansys software is used for modeling and analysis of composite frame. The analysis and result in terms of stress, strain and displacement with respect of time and ductility.

Index Terms

Palm kernel shell, I section

Impact of flood on water quality and Remediation: a case study of periyar River

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Abstract

A major flood has occurred in August 2018 that hit Kerala. The flood has brought some changes to the environment and ecosystem, especially to the rivers. This study focuses on comparison of water quality parameters of the Periyar river before, at the time and after flood. Moreover, this study also presents the usage of natural fibres to treat the turbid water for safe drinking and household purposes. In this study, the natural fibres such as rice husk ash and coir fibres are attempted as a sustainable remedial measure to improve the quality of water sample. The water samples collected from various locations were tested for observing its variation in physical and chemical properties in the presence and absence of natural fibres. The fibres are added with proportion of 1mg/L with a setting time of 30 minutes. Inorder to identify the effectiveness of using natural fibers, comparative analysis is done by studying the variation in the properties by the addition of rice husk ash and coir fibres.

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Design of Band-Pass Filter Using Substrate Intergrated Waveguide Structure for Wireless Applications

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Abstract

This paper explains the design of a BPF (Band-Pass Filter) based on SIW (Substrate integrated waveguide) technology for wireless application. The architecture of BPF comprises of a slotted line low pass filter structure and the high pass SIW structure. The proposed design attempts to minimize the insertion loss while maintaining considerable return loss at a frequency range of 696-806MHz. The designed filter is simulated using HFSS and the obtained results of return loss and insertion loss are -26.4165dB and -0.0119dB at centre frequency (751MHz) respectively, with a fractional bandwidth of 14.64%. This BPF structure exhibits sharp roll-off at 826MHz with 15.9cm X 19.9cm except feed length.

Index Terms

Substrate integrated waveguide (SIW), sharp roll-off, return loss, insertion loss, and fractional bandwidth.

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Bitcoin A Careful Design of Bubble or Legit Currency: A Study Based on Indian Economy

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Abstract
This paper sets outs a brief discussion about the bitcoin being a bubble or legit currency on Indian economy. The study was mainly focused on the impact of bitcoin and legit currency in the Indian economy and also the major factors that leads the currency to the growth of the economy The Indian merchant's uses bitcoin transaction for the purchases and sale of goods and services. Few people states that bitcoin is not bubble but a corruption of real currencies. The sudden rise of bitcoin, and the bitcoin market, has examined the currency as a furor, a bubble, or a scam. Critics also states that there is a absence of central bank advocacy that's makes bitcoin a pointless, that shows a absence of considerate about how currency work in the bitcoin market. The study is mainly focused on Indian economy as whole.

Index Terms
Bitcoin, bubble, legit currency, blockchain, cryptocurrency

Li-Fi based high security door lock automation

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Abstract

TSecure wireless communication networks are a priority for all, the amount of sensitive information shared through them, and threat of cyber criminals who see value in that data is something we can't afford to ignore. But with technologies like Wi-Fi straining to cope with the demands of the world where something is connected, we are forced to look to other technologies in search of solutions. Here we introduce a Li-Fi based high security locking system for doors , which when compared with other conventional locking systems provides high security and unhackable locking and unlocking operation. The user is verified by the identification application program of a smartphone via password entry. If the authentication succeeds, the corresponding encoded visible light signals are transmitted by a light emitting diode (LED) camera flash. Then, only a small size and low cost photodiode as an outdoor interface converts the light signal to the digital data along with a comparator, and runs the authentication process, and releases the lock.

Index Terms

Secure, wireless, unhackabe, digital data, authentication

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Effective Inter-Personal Communication Mechanism For Blind, Deaf And Dumb

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Abstract

Science and Technology have made human life easier, but still there exists a significant amount of differently abled people who dream to make the process of communication easier for themselves. According to the World Health Organization, about 285 million people around the world are blind, 300 million are deaf and 1 million are dumb. Communication being a fundamental aspect of human life, it is very much difficult for these kinds of people. This paper presents a new mechanism for effective inter-personal communication between these people. Our project makes use of Arduino Circuit Board, flex sensors, electronic-Braille board, LCD display, voice recording and playback module. The Gestures made by hand are fed as an input to the flex sensors and it is converted into speech using the voice recording and playback module, which can be used by normal people. A Braille language output is obtained on electronic-Braille board made using vibrating motor. Text output is obtained on LCD display. These 3 combinations of outputs, voice, text and Braille, can be used for communicating with blind, deaf, dumb or any combination of these three.

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EduBlock-A Blockchain technology enabled application for Education System

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Abstract

International students applying to a foreign university for higher education go through a long and very painful process of getting all the required credentials from various issuing agencies/ other ways that the university expects, transcripts, Recommendation letters, etc., ETS (for GRE/TOEFL tests), WES credential (for vetting transcripts), etc. This process takes months together and students have to produce their personal identifiable information (PII) among other data too. Also, these authorities additionally request students to provide proof of credentials to provide the required service. The student's identity is replicated across the agencies centralized systems. The data provided is now not only vulnerable to potential information threats, but is also a potential misuse by the agencies themselves to further their own business interests and improve the same. With EduBlocks, a decentralized blockchain platform, there's no need for any of the businesses/agencies to collect and store personal and credential data. Students will own their identity in the form of credentials and will only provide access to only the minimum required data that each of the agencies require to provide their service. Once approved, the credential is then added to the student's wallet. Since credentials would be cryptographically verified through blockchain they can be trusted by all authorities. It also makes data more secured and transparent to all parties involved. The student can then present the verified credentials along with application form to the university thereby enabling them to make a faster decision recorded on a public ledger and all committed transactions are stored in a list of blocks. This chain grows as new blocks are added to it continuously. The blockchain gives the users the ability to authenticate digital information and generally has key characteristics of decentralization, persistency, anonymity and auditability. With these traits, this technology is safe, transparent and can help save the cost and improve the efficiency.

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Index Terms

EduBlocks, Blockchain, Hyperledger Indy, DID, Decentralization

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Cyclostationary Feature Detection for Spectrum Sensing in Cognitive Radio Network

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Abstract

This paper focus on cyclostationary feature detection based spectrum sensing for accurate, fast and efficient primary signal detection. When secondary users fail to realize the white space, either it will cause a serious interference with primary user or a failure to reuse the unoccupied band. There is wide variety of schemes possible to detect the vacant band and the basic among them is the energy detection but is not efficient. Cyclostationary feature detection (CFD) based spectrum sensing exploit the second order periodicity of modulated signal .Cyclostationary based detection gives excellent information of signal characteristics even at very low SNR due to its robustness to the noise also realizes the modulation scheme used for transmitting the signal. Spectrum sensing or presence of primary user (PU) is detection is done in LabVIEW environment in this work.

Index Terms

Cognitive Radio, Energy Detection, Cyclostationary Feature Detection, Spectral Coherence Function

Investor's Perception toward Mutual Fund in the Ernakulam City - A Study

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Abstract
Mutual fund is now being considered as a leading tool in the Indian financial market. An investment in mutual fund helps the investor in identifying their goal, considering the risk return factor, better planning, understanding the various avenues available and so on. The study tries to find out the awareness level of investors towards mutual fund, factors considered while investing and also to know the commonly preferred asset management companies as well as fund schemes.

Index Terms
Association of Mutual Funds in India (AMFI), Securities and Exchange Board of India (SEBI), Mutual fund, Asset Management Company (AMC).

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Psychology on Risk Tolerance in investment decision – Discriminant Analysis on Investors of Kerala

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Abstract

The studies in behavioral finance focused on psychographic and psychological factors which influence on investment decision. The analysis of these factors helps in determining the systematic errors in judgment. This sort of bias taxonomy is helpful in pointing to the effectiveness of human decision making in various economic decision making circumstances. The decision making process of investors incorporate both quantitative (objective) and qualitative (subjective) aspects . But the varying characteristics of the investors have difference in these attribute in different ratio scale. Exploratory factor analysis was carry forwarded to identify the various behavioral factors affecting the investment decisions. The factors analyzed were further tested using discriminant analysis to evaluate the investors psychology on risk tolerance

Index Terms

Behavioral finance, behavioral science, investment behavior, overconfidence, representative bias, mental accounting, regret aversion, risk, risk tolerance, discriminant analysis, risk attitude, discriminant analysis Kerala

A study on the Behaviour of Geopolymer concrete Funicular shell

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Abstract
Compression structure provides an alternative construction technology which optimizes the use of building materials and natural resources. The Funicular shell is a thin structure due to its geometry and flexural rigidity carry loads by the stresses acting in their plane. Geopolymer concrete is an eco-friendly and sustainable material which gives initial setting, elimination of water curing, good durability and mechanical properties. In the view of above considerations, present work is carried out for funicular shells of varying spans from 1m to 2m with varying rises of L/10 to L/20 are analysed by using SAP2000 software. Experimental study is carried for both conventional and Geopolymer concrete funicular shells of specimens of size 1m X 1m and the thickness of 30mm with and without Mesh Reinforcement. The solution with 0.55MR were prepared along with 50% Flyash and 50% GGBS are used instead of cement for the casting of cubes, cylinders and Geopolymer concrete funicular shells. UDL load is applied over the shell, load carrying capacity and deflection are measured. Analytical and experimental results are compared. Funicular shell with mesh reinforcement gives more strength than normal shell for both conventional and geopolymer concrete funicular shell.

Index Terms
Funicular shell, Discretization, SAP Software, Geopolymer concrete, Molar Ratio

Protocol Based Communication for Li-Fi

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Abstract

Recent study shows that more than 7 billion smartphones are used for personal communication. Apart from that there is a sharp increase in IoT (Internet of Things) based devices such as smart watches, health trackers etc. Since ,present communication technologies uses radio waves as a medium for transferring information, eventually it will lead to a phenomenon known as 'spectrum crunch'. The lack of wireless spectrum has led to a rapid growth in research in other domains in electromagnetic spectrum, which led to the development of Light Fidelity (Li-Fi). This paper discusses about using a serial communication protocol implementation to transfer data in a structured manner for Li-Fi

Index Terms

Visible light communication (VLC), Light Fidelity (Li-Fi), Universal Asynchronous Receiver Transmitter (UART), Light Emitting Diodes (LEDs)

Smart Incinerator

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Abstract

The Smart incineration is a waste treatment process that involves the combustion of substances contained in waste materials. Since the natural degradation of plastic is impossible, the possible way of disposing the plastic waste is through 3R method, but the 3R method has its limitations. An alternate way of disposing plastic waste is by incineration. This paper deals with the implementation of an incinerator which extracts the carbon produced from burning plastic and converts it into “carbon black”. The input to Smart Incinerator is Plastic Waste. Burning of Plastic Wastes in Smart Incinerator produces Flue Gases- Carbon dioxide, Carbon monoxide, etc., and ash. A Standalone web server with an ESP8266 displays the temperature with a DS18B20 temperature sensor .There are similar devices implemented in many industries but they don’t provide any proper filtration of smoke which is produced as a part of combustion.

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Creating a Vision to the visually impaired people with tamil commands

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Abstract

A blind people face different difficulties in their everyday life. It is troublesome for the visually impaired people groups to move starting with one spot then onto the next, to speak with others and to discover the items and individuals around them. This paper helps those kinds of people to help them to live like a normal people by making themselves involved in all activities. Our paper result is exhibited as android application with complete voice acknowledgment. It gives an interface between the visually impaired and the item or people who are imparting around as by giving directions in tamil language. It will recognize and direct the item and individual by utilizing Artificial calculations. Application likewise comprises of extra element, for example, making a telephone call through voice direction, perusing call logs, read battery status and it gives map route offices to blinds totally in tamil voice.

Index Terms

Visually Challenged, Voice commands, GPS, Wrist Band, Camera

Malayalam Phoneme Recognition Using Hidden Markov Model

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Abstract

Automatic Speech Recognition (ASR) is a process in which speech signal is converted into a sequence of words, other linguistic units by making use of an algorithm which is implemented as a computer program. The major objective with which ASR works is the development of the techniques and a system that enables the computers to recognize speech as input. Most precisely speech recognition means phoneme recognition. Good phonetic decoding leads to good word decoding, and the ability to recognize the phones accurately will undoubtedly provide the basis for an accurate word recognizer. In this work, a detailed study about Phoneme recognition using Hidden Markov Model (HMM) is done. Mel Frequency Cepstral Coefficient (MFCC) technique is used for feature extraction. Resulting feature vectors are clustered around some centroid location using vector quantization technique. K-means algorithm is used in vector quantization to classify a given dataset into clusters. These centroids act as an observation sequences for HMM.

Index Terms

Phoneme recognition, Mel Frequency Cepstral Coefficient(MFCC), Vector quantization, K-means algorithm, Hidden Markov Model(HMM)

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Influence of Admixtures on Mechanical Properties of Fibre Reinforced Concrete

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Abstract
This paper presents the experimental investigation administered to work out the mechanical properties of fiber fibre bolstered high strength concrete of grade M50 incorporating ash and densified oxide fume(DSF).Three completely different compositions of fiber fibre bolstered concrete(CFRC)were created. initial CFRC while not additives, second CFRC created by10%replacement of cement mass with solfa syllable, in third composition10% of cement mass was replaced with DSF. In every mentioned admixture, fiber was side in its natural length by zero.4% of the blinker volume. The investigations unconcealed that adding fiber fibres to high strength concrete caused a small reduction in density and compressive strength of concrete by regarding one.5 and 1.2% severally

Index Terms
High Strength Concrete, Coir Fibre, Densified Silica Fume, Fly Ash

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A Review Paper on Seismic Analysis and Design of a Multi-Storeyed Building by Using Various Materials

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Abstract

The precept goal of this Project is to analyse and layout a multi-storied constructing [g + 10 (3 dimensional frame)] the use of STAAD Pro for unique cases like regular constructing seismic resist building and metal body building. The design involves load calculations and analysing the entire shape by means of STAAD.Pro. The layout methods used in STAAD.Pro analysis are limit kingdom layout conforming to Indian fashionable code of practice for normal layout, dynamic evaluation for seismic resist constructing and metallic evaluation by using using Indian requirements. STAAD.Pro functions a cutting-edge user interface, visualization tools, effective analysis and layout engines with advanced finite element and dynamic evaluation competencies. From version technology, analysis and layout to visualization and end result verification, STAAD.Pro is the Professional's desire. Initially we began with the analysis of simple 2 dimensional frames and manually checked the accuracy of the software program with our effects. The effects Proved to be very correct. We analysed and designed a g+1 storey building [3-D frame] to begin with for all feasible load mixtures [dead, live, wind and seismic loads].

Index Terms

Normal building, Seismic resist building, Steel building, STAAD.Pro

Experimental Study on Properties of High Strength Concrete (FRSCC)

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Abstract

SCC and FRC may be classified as superior Concrete (HPC) because of its special proportions and properties. HPC may be a specialized concrete designed top reduce many edges within the construction of concrete structures that can't continually be achieved habitually mistreatment standard ingredients, traditional mixture and hardening practices. Besides, HPC can be termed as concrete in which its ingredients and proportions are specifically chosen and developed for particularly appropriate properties for the expected use of the structure. Inclusion of fibres into SCC will produce Fiber Reinforced Self Compacting Concrete (FRSCC) with superior properties in fresh and hardened state. The bolstered fibers in concrete might improve the durability, flexural strength, impact strength, toughness, drying shrinkage, and failure pattern of the concrete.

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Improving Efficiency of West First Routing using Channel Pressure technique in NoC

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Abstract
Network-on-Chip (NoC) is a widely adopted com- munication framework for multi-core systems.For the communi- cation to occur, resources need to be reserved in between the path from source to destination. When these resources are locked up in a cyclic manner, deadlock occurs. Hence the packets will not be routed to their destination. This incurs a huge loss in on chip networks. This paper suggests a deadlock free west first routing algorithm using channel pressure technique. Channel pressure can be used as a metric for prediction and prevention of deadlock. The value of channel pressure can be used for the estimation parameter to predict whether deadlock will occur in the network or not. This paper proposes the integration of channel pressure technique with existing west first algorithm and has achieved 66.6 percent of reduction in average packet latency and 54 percent reduction in the network latency.

Index Terms
Channel pressure, Deadlock, Packet latency