15th World Conference on Applied Science, Engineering and Technology

(WCASET – 18)

Goa, India

30th - 31st December 18

Institute For Engineering Research and Publication

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Editorial:

We cordially invite you to attend the ***15th World Conference on Applied Science, Engineering and Technology (WCASET - 18)*** which will be held at ***Nanutel MargaoPadre Miranda Road, Opp. to Club Harmonia, Margao, Goa*** on ***December 30th-31st, 2018***. The main objective of ***15th WCASET - 18*** 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 Science, Engineering and Technology. 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 October 2018, the Organizing Committees have received more than 182 manuscript papers, and the papers cover all the aspects in Applied Science, Engineering and Technology. Finally, after review, about 67 papers were included to the proceedings of ***15th WCASET - 18***.

We would like to extend our appreciation to all participants in the conference for their great contribution to the success of ***15th WCASET- 18***. 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.

Editor-In-Chief
Dr. Erry Yulian T. Adesta
Dean, Kulliyyah of Engineering,
International Islamic University
Malaysia

Acknowledgement

Institute For Engineering Research and Publication (IFERP) is hosting the ***15th World Conference on Applied Science, Engineering and Technology*** this year in the month of December 30th & 31st . The main objective of 15th WCASET-18 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.

A.Siddth Kumar
Director
Institute for Engineering Research and Publication (IFERP)

15th World Conference on Applied Science, Engineering and Technology (WCASET−18)

Keynote Speaker

Prof. (Dr.) Jatinder Singh Bal
Vice Chancellor, SBBSU, Jalandhar, India

MESSAGE:

I am delighted to be a part of "15th World Conference on Applied Science, Engineering and Technology (WCASET-18)" and to interact with enthusiastic scientists and technologists gathering at Goa, India from December 30th -31st , 2018.

The present day world is the result of pursuits for novel scientific and technical innovations by the intellectual scientific societies. Burgeoning research has resulted in remarkably enhanced and comfortable human life. However, the urbanization, industrial developments and other anthropogenic activities have resulted in the environmental catastrophe. In spite of breakthrough inventions in engineering and technology, we are facing numerous challenges like climate change, global warming, carbon emission, rising sea level and the environmental deterioration.

New scientific ideas and innovative technology can only help us to cope up with such challenges. The need of hour is that, the contemporary scientist and technologists should find solutions to these problems by continuous progressive efforts, dedication and determination. The interdisciplinary approach combining engineering sciences, basic sciences and social sciences seems to be much effective to address these problems by integrating different novel ideas and technologies.

Further, for the success of new findings and novel technologies, the concerted efforts and trials are needed at global level. This conference is an appr=opriate platform that can provide an arena to achieve such feats by giving the chance to scientist and technologists to interact, plan and to move together even working at different places.

I hope researchers from different fields will learn from each other and discuss their issues well. I express heartily thanks to organizing committee and wish for the great successful, fruitful and joyous WCASET-18.

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 has 5 years of industrial and 20 years of teaching, research and administrative experience to his credit. He is a prolific author in the field of Computer Engineering. He has published more than 100 research papers in International & National journals of repute. Apart from that, he has 22 highly acclaimed text/research to his oeuvre 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 Best Research Scholar Award by UGC in 2007, Excellence Service Award by PB. Govt. in 2008, R&D Gem of DBIEM, Vigyan Ratna Award by Honorable Governor of Punjab in 2012, Bharat Gaurav Award by AITMC 2013 and many more awards by the different organization. He has guided 10 PhD and 7 under guidance and 18 M.Tech.

Other Awards

1."Award of appreciations 2018 " Harjit Singh Sajjan, Hon'ble Minister of Defence, Canada & Member of Parliament, Vancouver South for educating young people and empowering them in Vancouver, British Columbia, Canada.

2."Young and Innovative Vice Chancellor Award" by Mr Navjot Singh Sidhu (Cabinet Minister, Punjab).

3."Award of Appreciation 2017" at the Parliament House of United Kingdom, London

4."Young and dynamic Vice Chancellor of the country award 2017" by Confederation of Indian Universities, New Delhi.

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ABSTRACTS

Review of Computational Work in Pulse Detonation Engines

Ankit Chourasia, National Institute of Technology, Silchar, Assam, India
Kumari Ambe Verma, National Institute of Technology, Silchar, Assam, India
K.M.Pandey , National Institute of Technology, Silchar, Assam, India

Abstract:--

Pulse detonation engines (PDEs) are the latest technology under development in the propulsion industries and it is going to be in the near future of the air vehicle propulsion system. Pulse detonation engines are the highly efficient engine due to its high thrust to weight ratio. The operating cycle of pulse detonation engine basically consists of mixing of air and fuel, combustion, blowdown and purging.among all of the above-stated phenomena the combustion process in pulse detonation engine is of utmost importance. In the practical system, the initiation of the detonation wave in the detonation tube is the combination of multiphase combustion phenomenon. In the present paper, a review of the various computational analysis addressing the detonation mode of combustion in a pulse detonation engine has been discussed.

Keywords:--

Pulse Detonation Engine (PDE), Deflagration to Detonation Transition (DDT), Shchelkin Spiral, Blokage Ratio (BR).

A Comparative Analysis of Neural Network & Fuzzy Classifier for Brain Tumour Detection

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Abstract:--

The task of MRI (Magnetic resonance Imaging) brain abnormality detection is difficult due to the variance and complexity of tumours. Brain tumour diagnosis requires a detailed analysis, which involves invasive surgery that can be painful and can cause discomfort to patients. This paper presents a separate unsupervised learning based Neural network classifier and Fuzzy logic classifier for the detection of tumour in the magnetic resonance human brain images. In this paper, the brain tumour diagnostic procedure is divided into the following phases. The first phase comprises of image pre-processing which includes image resizing, noise filtering, thresholding etc. In second phase, the features of the MR brain image are extracted using Gray level co-occurence matrix (GLCM). In third phase, brain tumour diagnosis is performed using Neural network (Self organizing map) based classifier and Fuzzy logic (Fuzzy C-means clustering) based classifier. The obtained accuracy of neural network classifier is 96% and sensitivity is 92% and specificity is 66% and that of fuzzy c-means brain image classifier is 98% and sensitivity and specificity are 100% and 66.6% respectively. The performance of the classification technique is evaluated by performance measures such as accuracy, sensitivity and specificity and is compared with other techniques based on previous work.

Keywords:--

Magnetic Resonance Imaging (MRI), Fuzzy C-means clustering (FCM), Gray level co-occurence matrix (GLCM), Accuracy, Sensitivity, Specificity.

Evaluation of Pore Structure of Concrete Using Different Methods: A Review

Yogitha.B, Vignan's University
Dr.M.G.Muni Reddy, Andhra University
Dr. N. Ruben, Vignan's University

Abstract:--

Micro analysis of cement is to be studied as it affects the strength and durability of macro structure in long run. Due to physio chemical reactions of cement and aggregates in a mortar paste there arises pores or voids which becomes a structural problem in long run. Aeration and Hydration plays a key role in altering the performance of concrete as aeration leads to entrained and entrapped voids, hydration leads to C-S-H structure which forms gel pores and capillary pores. Though concrete is good in compression, as it is brittle, internal properties have to be checked and new techniques or admixtures are to be developed. This paper discusses Mercury Intrusion Porosity, Gas adsorption method, and backscattered electron microscopy technique to evaluate pore structure of cement in concrete. The performance of test depends on inter crystalline structure, permeability, void diameter, smoothness of surface and measures taken while preparing the specimen. It is just an attempt to derive the porosity of concrete by making few assumptions.

Keywords:--

Porosity, voids, mercury intrusion method, Back scattered electroscope, gas adsorption method

Comparison of Project Monitoring and Controlling Methods: Earned value management (EVM) & Earned Duration Management (EDM)

Chitti Babu Kapuganti, Assistant Professor, Civil Engineering Department, GITAM Institute of Technology, GITAM.
Balaji K.V.G.D, Professor, Civil Engineering Department, GITAM Institute of Technology, GITAM.
T. Santhosh Kumar, Assistant Professor, Civil Engineering Department, GITAM Institute of Technology, GITAM.

Abstract:--

Planning, Scheduling, Monitoring and Controlling are four phases of project management. In these four phases, Monitoring and Controlling are two main phases in which any deviation occurs, it will have major effect on scheduled completion date and budgeted cost of the project. Earned value management (EVM) is one of most popularly known and used project monitoring and controlling techniques. As EVM represents the time in terms of budget, some researchers have derived an extensions for that process. Comparison of Earned value management (EVM) and its derivative Earned Duration Management (EDM) with help of case study is presented in this paper.

Index Terms—

Earned Duration Management, Earned Schedule, Earned Value Management, Project Monitoring and Controlling Methods, Schedule Performance.

Project Schedule Monitoring by Earned Duration Management (EDM)

Chitti Babu Kapuganti, Assistant Professor, Civil Engineering Department, GITAM Institute of Technology
Pothuru Yaswanth Kumar, Undergraduate Student, Civil Engineering Department, GITAM Institute of Technology.
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Anga Akhil, Undergraduate Student, Civil Engineering Department, GITAM Institute of Technology.
Rohan Barbhuiya, Undergraduate Student, Civil Engineering Department, GITAM Institute of Technology.

Abstract:--

In earlier days, project managers face many difficulties to maintain the project in a right track. In the 20th century, Gantt chart was developed and since then the management of the projects based on the baseline schedules has come into existence. To monitor the cost and schedule Earned Value Management (EVM) was introduced. The main objective of the EVM when it was introduced is only to monitor the cost aspect. But later on by specific derivatives schedule monitoring is also introduced. For monitoring a project schedule, EVM uses cost in place of time. There are certain misleading's observed while using cost to control the schedule. So to overcome this issue, researchers developed a new method, Earned Duration Management (EDM). In this paper, a railway bridge construction project is considered as a case study and EDM methodology is applied to find out the variation of various EDM indices.

Index Terms

Earned Duration Management, Duration performance Index, Project Monitoring and Controlling Methods, Schedule Performance

Design and Development of Fissure Detection and Imaging Techniques for Brown Rice Kernels to Improve Quality of Rice Miller

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D. K. Shinde, Faculty Department of Production Engineering, Veermata Jijabai Technological Institute, Mumbai, India.
D. N. Raut, Faculty Department of Production Engineering, Veermata Jijabai Technological Institute, Mumbai, India.

Abstract:--

One of the major problem faced by the rice millers and farmers is breakage of rice during milling processes like whitening, polishing etc. For reducing the breakage of different rice varieties while milling processes, it is important to know the initial quality of rice grains. Rice quality is in terms of internal fissures present in rice kernels. In this study, an innovative technique is found out for detection and imaging of fissures present in brown rice kernel with the use of digital single lens reflex DSLR camera. The DSLR Nikon D5200 camera with secondary close-up numex close-up lenses was used for capturing images of fissures of rice kernels. The captured images were edited in open source image processing application Lightroom CC application for better clarity of fissure. Four different arrangements were used for detection and capturing of fissures, out of which two arrangements were giving best results. With the help of those two arrangements model of fissure detection box is developed. The fissure detection box was designed in a such a way that it can be easily used by millers for detection of fissures in brown rice after de-husking which can help to adjust milling pressure so that optimum milling with a reduction in breakage of rice can be possible.

Keywords:

Kernels, Milling, Fissures detection, Image Processing, Fissures detection box.

Experimental Study of Thermal Environmental Condition inside Greenhouse in Indian Climate.

Gauravkumar Gadhesaria, Assistant Professor, Mechanical and Automobile Department, CGPIT, UTU, Bardoli
Dr. Chinmay Desai, Professor, Mechanical and Automobile Department, CGPIT, UTU, Bardoli

Abstract:--

A facility for controlled environment agriculture from energy consumption point of view is under investigation at Bardoli (Surat), a tropical wet and dry region of Gujarat. The study was carried out for an even span type 8.92 m2 greenhouse situated at Uka Tarsadia University in Surat city, located in the southern part of Gujarat, at geographical location of (21.1667° N, 72.8333°E) with elevation of 34 m above the sea level under the environmental conditions. The calculations are helpful to indicate the hourly energy balance and average temperature distribution inside the greenhouse. The greenhouse was studied for east-west orientation. The steady state analysis was used to calculate total additional energy (except solar radiation) required to maintain desirable temperature of plant. Experimental validation of model was carried out in a single span, east-west orientated greenhouse in winter. Finally, based on the main characteristics and results of the study, some important conclusions are drawn and suggestions made for further studies. A higher air change rate appears desirable to lower the temperature further. As per this climate extra heating is needed only for November to February. For March to October only storage unit can absorb the available heat and supply whenever required.

CFD Analysis of Pressure Die Casting Mold Specimen

Krishna Patel, Assistant Professor, Mechanical and Automobile Department, CGPIT, UTU, Bardoli
Dr. Chinmay Desai, Professor, Mechanical and Automobile Department, CGPIT, UTU, Bardoli

Abstract:--

In pressure die casting processes optimum temperature distribution of a mold provides better quality and highest productivity. Die thermal profile is generally influenced by various die design and process parameters such as size, shape and location of internal water cooling channels, mass flow rates of water cooling and molten metal temperature at the time of contacts it with mold. The cooling water velocity or mass flow rate plays an important role for optimize thermal profile of the mold. In order to understand and optimize the effect of water flow rates on die thermal profile, a 3D solid modelling has been developed and employed to reveal temperature distribution profile using ANSYS fluid flow fluent. It can be seen from the analysis the water flow rates influences die temperatures profile. To optimize cooling water processing time for specific die geometry and die materials these results can be employed.

Semi Empirical Model of Pressure Die Casting Mold

Krishna R. Patel, PG Scholar, Automobile Department, CGPIT, UTU, Bardoli
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Chinmay K. Desai, Professor, Mechanical and Automobile Department, CGPIT, UTU, Bardoli.
Ravi J. Bhatt, Assistant Professor, Mechanical and Automobile Department, CGPIT, UTU, Bardoli

Abstract:--

Pressure Die Casting is generally used to manufacture automobile parts. The process is characterized by forcing molten metal under high pressure into mold cavity. It is necessary to study the process parameters on the performance of the die because the commercial setup is expensive. Also, the die life is moderate. This discourages many researchers to study on PDC die. It is always desirable to improve the die life and thermal performance during PDC operation. Hence, an attempt is made to investigate the effect of parameters on the thermal performance (cooling time) of the die. Die Temperature is usually influenced by various die design and process parameters such as size and location of internal water cooling line, flow rate of cooling lines and pouring temperature of molten metal. It is difficult to understand the effect of each individual parameter via experiments because it demands higher operating and tooling cost. Thus, it is always viable to use analytical or numerical approach. In present study, a semi empirical model has been developed based on dimensional analysis concept. It is a well established method in analysis and proven to analyze the processes like AWJM, EDM, ECM etc. The model has been developed considering the parameters like density of water, velocity of water, diameter of die, temperature difference (die temperature and water temperature). The response has been selected as cooling time as thermal performance indicator. In order to validate the results, an analytical approach was used. It was observed that the results are found in good agreement between semi empirical model and analytical approach. Therefore, semi empirical model can be effectively used to estimate cooling time for various geometrical and operating conditions.

Computational Investigation on Design of Scramjet Combustor – A Review

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K. K. Sharma, Associate Professor, Department of Mechanical Engineering, National Institute of Technology, Silchar, Assam, India

Abstract:--

Supersonic combustion is carried out primarily in air breathing engines. Atmospheric air is used as an oxidizer and fuel are commonly stored within the system. No moving parts are available in the scramjet engine, which gives higher thrust to weight ratio compared with any other propulsion engines. Different techniques and approaches are used for getting better results in the form of improved mixing, momentum, drag etc. The problems present in the combustor can easily be identified with the help of boundary layer parameters. Small improvement can lead to better performance. One of the technique is by using vortex generator. It creates vortices in the lateral plane. Turbulence can also be generated with the help of wedges, ramp, pylon etc., inside the combustion chamber. So the review article is focused entirely on the effects of boundary layer performance parameters due to implementation of vortex generator in the supersonic combustion ramjet engine (scramjet) at different locations with variable sizes. Basic principle behind use of vortex generator is the vortex formation in the downstream to overcome separation and drag. Geometrical shape is a major concern on vortices formation, so different kind of geometrical shapes have been taken for study such as standard micro ramp, dissymmetric micro ramp, slotted micro ramp, cantilevered micro ramp, swept micro ramp, unswept micro ramp, micro vanes, pylon and ramped vane type of vortex generators. To summarize the entire literature review. It is seen from the literature review that standard micro ramp can help in improving momentum deficits and drag however slotted micro ramp can improve mixing performance. Ramped vane vortex generator gives overall performance of boundary layer in supersonic flow field.

Index Terms

Scramjet combustor design, Vortex generators, Micro-ramp, Flow separation, Drag.

Effects of Welding Parameters on Thermal Residual Stresses in Laser Welding of SS 316

Lalaji Godhani, Assistant Professor, Mechanical and Automobile Department, CGPIT, UTU, Bardoli
Dr. Chinmay Desai, Professor, Mechanical and Automobile Department, CGPIT, UTU, Bardoli

Abstract:--

In this research paper an attempt has been made to investigate the effects of laser beam welding parameters on thermal residual stresses. Study of literature indicates that most of the research work carried out for the measurement of thermal residual stresses generation by the laser welding is still a field of research. Thermal residual stresses are a locked stress which generate due to the heating & cooling cycle of welding. Nowadays laser welding is latest process, which gives the lower distortion, thermal residual stresses, plastic strain & thermal residual strain. Thermal residual stresses decrease the effectiveness of weld joint so it's important to understand the effects of it on weld joint. Double pass pulse laser welding has been used for butt weld joint of 4 mm thickness SS316 plate at variable welding parameters. The welding parameters like power, spot diameter and welding speed (velocity) have been considered in present study. The XRD (X-ray diffraction) method was adopted to measure the residual stresses. It was observed that the effect of spot diameter on the residual stress is higher compare to the welding power. Along with that a validated 2D SysWeld FE model is used to predict the thermal residual stress in the welding specimens, which shows the good conformity between experimental and simulation results.

Stress-Strain in Multi-Layer Reinforced Concrete Doubly Curved Shell Roof

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Do Thi My Dung, Department of Civil Engineering, Mien Tay Construction University, 20B Pho Co Dieu street, Ward 3, Vinh Long town, Vinh Long province, Vietnam

Abstract:--

This paper presents a result of stress-strain in double-layer reinforced concrete doubly curved shell roof by experimental method and simulated by ANSYS. In the analytical method of multi-layer shell by the authors as Ambarsumian, Huan T. Le...with assuming that the layers in shell are stick together, work together, in addition to the analytical solution, there are also limitations in the choice of approximation functions as: the stress function φ and the displacement function w, selection of boundary conditions of the shell...The study of double-layer reinforced concrete shell roof by experimental method and ANSYS show the real work of the shell, as well as the real work of the double-layer shell with the use of normal concrete layer and steel fiber concrete layer in shell, experimental method and ANSYS in the reinforced concrete shell roof model with a square size is 300x300cm.

Keywords:--

Doubly curved shell roof, experimental method in shell multi-layer, reinforced concrete shell roof, steel fiber concrete layer, stress-strain in shell.

Modeling of Solar LED Illumination System with fuzzy logic controller

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Jirin Mathew, Department of Electrical & Electronics Engineering, MAHE, Manipal Institute of Technology, Manipal, Manipal.
Savitha G Kini, Department of Electrical & Electronics Engineering, MAHE, Manipal Institute of Technology, Manipal, Manipal.

Abstract:--

Fuzzy Logic Controller (FLC) systems have the most advanced applications in the areas of Industries. Owing to low utilization of energy, functioning at higher speed and high storage of data computing, it compliments Fuzzy systems as the best option. Since trend is moving towards of energy saving technologies, an advanced technic that is LED illumination with solar photovoltaic system is proposed. In This paper the modeling of a system constituting of PV array, LED modeling, boost converter with LED as the load and the FLC is carried out. The main purpose of FLC is fulfilled for ruling the switching time of MOSFET of the boost converter to maintain constant output current and voltage to the LED load. Because light intensity produced by the LED is directly proportional to its driving current which is controlled by FLC. The complete closed loop solar LED system analysis is carried out in Matlab.

Index Terms: –

PV (Photo Voltaic) Array, Fuzzy Logic Control (FLC); Light Emitting Diode (LED).

Survey on test Generation Using Machine Learning Technique

Madhuri D Naik, Ramaiah Institute of Technology
Naresh E, Ramaiah Institute of Technology
Vijaya kumar B P, Ramaiah Institute of Technology

Abstract:--

Software testing and maintenance requires a considerable amount of time in the software lifecycle in order to have a quality product. Recent usage of machine learning algorithms in testing has rapidly increased and different testing type uses different machine learning algorithm depending on the test suits, which helps in automating the test cases in order to decrease the manual effort, which in turn helps in reduction of cost and time spent on the project by the software engineer. An overview of advantages are discussed for various software testing and machine learning techniques is provided along with some of the research on various combination used in order to generate test cases and test suites which are more optimized and performance enhanced.

Keywords:--

Software testing, Machine Learning, Software Engineering.

Statistical Study of Product Obsolescence Detection Techniques

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Abstract:--

Obsolescence indicates the lifespan for which a product under study will be viable to sustain a particular market condition. This viability depends on the product features, the timing of product launch, the cost of the product and other secondary parameters. Researchers from various fields have proposed algorithms and techniques which utilize the product's parameters in order to predict and justify the product's obsolescence in the given market conditions. This study is based on statistically evaluating the product obsolescence detection methods and concluding as to which methods can be used for a particular application. This study also suggests some future research work which can be done on these algorithms in order to enhance the quality of obsolescence detection.

Keywords:

Obsolescence, Lifespan, Market, Product, Application

Analysis of Site Work and Comparison with Nos Specifications

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Abstract:--

The Construction industry of India is an important indicator of the development as it creates investment opportunities and employment across various related sectors. Looking at the wide scope of employment in this industry it quality of workmanship has become a major concern. A large amount of uneducated workers about 45.6% are employed on the site and this may affect the quality of work done by them. Hence to ensure quality the Construction Skill Development Council of India (CSDCI) developed National Occupational Standards (NOS) . Due to NOS the same quality of the work is achieved in the particular region. The NOS also takes the care of customer's satisfaction.

National Occupational Standards (NOSs) specify the standard of performance, knowledge and understanding when carrying out a particular activity in the workplace. Each NOS defines one key function in a job role. A set of NOSs, aligned to a job role, called Qualification Packs (QPs), would be available for every job role in each industry sector. These drive both the creation of curriculum, and assessments.

In the construction of a building the cost affecting parameters and also design crucial parameters are shuttering and bar bending. About 60% cost required for this work , mistakes in these activities may lead to structural failure hence quality work is needed to be done for which quality of workmanship is to be improved which will indeed increase the productivity too . A study on qualification packs of Bar bender and steel fixer, Assistant bar bender, Shuttering carpenter and Helper shuttering carpenter. The qualification packs are given in the reference. A analyses of these construction activities as these activities are majorly related to time, cost, and quality. They consume most of the time and cost. The quality of the structure mostly depends upon these activities. Surveying work of the labors related to the qualification packs specified in selected NOS for residential and commercial projects in Pune area for these activities was done

From the results obtained area in which the labors lagged and the possibilities and factors for so were discussed. The dependency

Phase changing materials in thermal energy storage systems: A Review

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Abstract:--

With increasing demand for energy, it has now become necessary explore for non-conventional techniques as the conventional technique has become limited. This diminished conventional energy source will impact on the environment. Therefore, intellectual management of energy resources and supporting the development of new technologies has become necessary to replace the conventional energy resources. It has been observed in various cases that using Phase Changing Material (PCM) can be a sensible solution. This paper intends to study the use of PCM in prevailing conventional and non-conventional techniques. This paper also tries to study the possibilities of PCM with these techniques to identify a solution for meliorating the efficiency of the prevailing system. It was concluded that PCM integrated with building materials, air conditioner, solar Photovoltaic (PV) Panels, Ground source heat pumps for space heating and cooling etc. PCM on integrating with conventional and non-conventional techniques results in enhancing the efficiency and reducing the electricity tariff. Thus, these hybrid systems can be a perfect alternative for the conventional systems.

Keyword:--

Ground Source Heat Pump, Phase Change Materials, Thermal Energy Storage.

Network Intrusion Detection System using K-Means Clustering and Gradient Boosted Tree Classifier Classifier

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Abstract:--

Network intrusion detection is an important and dynamic research area because the internet is always subjected to an ever increasing number of security threats. As the type of attacks appearing is continuously changing, there is a need for developing adaptive and flexible security features. This is where anomaly-based network intrusion detection techniques are important to protect the network against malicious activities. In literature, many such intrusion detection systems have been proposed till date. In this paper, a hybrid model for intrusion detection by performing K-means clustering to form cluster models of the dataset and input it to the Gradient Boosted Tree classifier has been proposed. In order to evaluate the performance metrics the NSL-KDD dataset was used. The proposed model showed improved results having high detection rate of 99.3% and low false alarm rate of 0.19%.

Index Terms

Anomaly detection, k-means clustering, gradient boosted tree classification, Intrusion Detection.

A Study on Impact and Acceptance of Implementation of Digital India App based Payments Schemes

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Abstract:--

India is one of the growing economies which has a potential to out-develop other countries. The adoption of digital schemes in banking services will reduce the overall efforts thus, reducing the amount of time for making banking and financial transactions, exponentially. To tap into this potential, Digital India is a major step towards achieving this goal. The effective implementation and creating awareness is the key and basic requirement for the success of the digital India initiative. The project focuses on the perception of the residents of Udupi District, Karnataka, India towards the usage of Digital Payment Apps/Methods. The district being known for the intellectual population of the Karnataka State. The opinions a sample group was collected to determine the enablers and barriers of using Digital Payment Apps. India is a vast country with 68% of its population living the rural regions the implementation of reforms take considerable time and efforts to have a reasonable impact. As the rural population being more conservative it becomes a challenge for the implementation rate. The study involves identification and evaluation of the crucial factors which affected usage. These factors, ranging from gender to age to employment status, etc. were then used as a basis for formulating a set of questions and the responses obtained of the subjects were recorded and analyses for further insight on the impact of these apps or methods on the day-to-day life of a resident of Udupi, Karnataka, India. A trend can be observed in the increase in usage of digital payment apps in India and after demonetization.

Index terms:

Digital India, cashless, security, technology, transactions, payments.

Nutritional analysis of Sugarcane - Papaya wine

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Abstract:--

Wine, an adjunct food beverage, is nutritional and has health benefits on humans. Since the middle ages, wines have grabbed the attention of the consumers and thereafter the contribution of the non-grape fruits in wine production is being widely studied till date. Highly perishable, surplus or ripen fruits like papaya can be used for the production of fruit wine which helps in generating additional revenue for the horticulturist. Papaya a tropical fruit contains minerals, phenols, vitamin C and salts like sodium, potassium. Sugarcane juice significantly contributes to the wine production. The Sugar content during the fermentation of wine is of paramount importance. Sugarcane juice was blended with papaya pulp to produce the fruit-crop wine, thus avoiding the use of external sugar. The present work focuses on the nutritional analysis of sugarcane –papaya wine. The proximate analysis of wine revealed 99.17 % moisture, 0.23% crude protein, 0.06% crude fat, 0% fiber, 0.41% carbohydrate and 0.13% minerals. The Polyphenol content of sugarcane-papaya wine was found to be 11.54 mg/100g. The salts sodium and potassium were found to be 72 ppm and 168 ppm respectively. Iodometric titration method was used to estimate vitamin C and the concentration was found to be 13.13 mg/100g.

Keywords :—

Nutritional Analysis, Papaya Pulp , Sugarcane Papaya Juice, Sugarcane Papaya Wine, Wine

Open Battle between Open Source boards

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Abstract:--

In today's era of open source platforms, Arduino is a one of the most promising and easy to learn hardware prototyping platform out there. There is range of Arduino boards available as per the embedded application requirement. Arduino board designs use a variety of microprocessors and microcontrollers operating at different voltages and speeds with different sets of IO pins and on chip peripherals. A detailed comparative study of popular Arduino boards is presented in this paper. Experiments have been carried out to validate the performance and power consumption.

Keywords

Open source, Arduino, Hardware, Prototyping, Embedded, Microcontroller, Microprocessor.

Recent Developments in Mobile Cloud Computing

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Abstract:--

Mobile Cloud Computing uses APIs and services for utilizing mobile and cloud resources. In this study, we consider Multi-Cloud Mobile Computing with major examples such as, G-drive/Cloud for Google, One drive for Microsoft, Amazon AWS Cloud and Sales Force. This paper emphasizes the importance of the future developments in 5G networks, the architecture, services, and security issues of Mobile Cloud Computing.

Index Terms:--

Mobile-Cloud Computing, Multi-Cloud Mobile Computing, 5G network

Application of Discrete Event Simulation towards Production Improvement

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Abstract:--

Simulation modelling is an exceptional tool for exploring and optimizing dynamic processes. Specifically, when mathematical optimization of complex systems becomes infeasible, and when leading experiments within tangible systems is too expensive, time consuming, or dangerous, simulation becomes a powerful tool. In real world manufacturing, simulation enables the visualization, analysis and optimization of production systems and logistics processes. Simulation helps to create digital models of production systems so you can explore system characteristics and optimize their performance. The digital model not only empowers users to run experiments and what-if scenarios without distressing an existing production system. This paper illustrates how Discrete event simulation may be used to evaluate throughput, relieve bottlenecks, minimize work-in-process, energy usage of machines and also dynamic impact of performance parameters, including line workload, breakdowns, idle and repair time and special vital performance factors. So that problem can be easily identified, analyzed and modified within a petite time.

Keywords

Discrete event simulation, productivity, utilization, optimization

Comparative Analysis on Mechanical Behaviour of Jute and Bagasse Fiber Reinforced Polymer Composites

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Abstract:--

In this work, mechanical properties of polymer reinforced with natural fiber were studied. A comparative analysis was performed on the mechanical properties resulting from the addition of jute and bagasse fibers in epoxy based polymer composites. The tensile strength, flexural strength, impact energy and hardness were assessed according to industrial norms. Both the fibers reported to increase the evaluated mechanical properties of the composites. Comparatively, jute fiber was proved more efficient as reinforcement of epoxy to increase its mechanical properties.

Keywords:

Polymer Composite, Jute Fiber, Bagasse Fiber, Mechanical Properties

Analysis of Various Time Series Change Detection Techniques: An Empirical Review

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Abstract:--

Time series change detection techniques have various uses, ranging from data classification, prediction, clustering and application based inference. These data mining techniques on time series change detection are usually application specific but the concepts are equally applicable to any other application area of research. In this paper, we have performed an empirical analysis of some standard algorithms on time series analysis, and evaluated their performance. This analysis has enabled us to identify some algorithmic traits which are specific to a given area of research, and thus would help researchers in selecting base algorithms for their own research purposes. Although, the techniques reviewed in this paper are targeted towards forest cover datasets, but are applicable to any other dataset as per application requirements.

Keywords:

Time series, mining, classification, clustering, prediction, forest cover change

Comparison of VADER and LSTM for Sentiment Analysis

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Abstract:--

Sentiment analysis is one of the trending topics at present. It has a vast scope from analysing the mood of the person based on his tweet, to predicting the stock prices. But this field is quite challenging. It is not easy to make a machine understand what exactly the person is saying. In this paper, we are going to demonstrate two different methods that can be used in sentiment analysis and its comparison. The two methods used in this paper are: i) VADER-Valence Aware Dictionary for sEntiment Reasoning ii) LSTM model (Long Short-Term Memory). VADER uses a lexicon-based approach, where the lexicon contains the intensity of all the sentiment showing words. The intensities are fetched, the sentiment score is calculated and based on this sentiment score, the review is classified as either positive or negative. We used VADER from NLTK module of python for our study. Recurrent Neural Network has proved its results in a variety of problems like speech recognition, language modelling, and translation. We used LSTM which is an extension of RNN for our study. LSTM networks are very effective for sequential data like texts because they can relate the context of the sentence very well. We preferred LSTM over RNN as LSTM supports Long-term dependency which will help us predict our reviews better. We implemented the LSTM model using keras.

Keywords
GloVe, Lexicon approach, LSTM, Sentiment Analysis, VADER

MAFAC-Multiple Alignment File Compression using Arithmetic Encoding

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Abstract:--

Due to advancement in sequencing the cost of genomic sequencing has been decreasing so much that researchers all around the globe had gathered huge volumes of data for present and future use. Over the last few years a principally huge dataset in molecular genomics, recognized as whole genome alignments, has gained substantial position. There is great urgency to store these genomic data efficiently, because storage cost is not declining as fast as the cost of sequencing. Usually, all-purpose compressor tool-gzip is used to overcome this problem. However, these tools were not explicitly designed to compress this type of data, and hence are not that efficient. There are various compression algorithms present that deal with genomic data but only a handful of them handles whole genome alignment. In this paper, we propose a lossless compression method, explicitly intended to compress MAF (Multiple Alignment Format) files. Our proposed method uses finite context modelling and arithmetic encoding to achieve better compression. Result shows that it works better than the present well known tools for MAF files compression.

Keywords:

Arithmetic coding, compression, Finite-context model, Multiple Alignment Format, Whole genomic alignment.

Micro-Grid Based Electrification for Remote Villages

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Abstract:--

Our Country is on its path of development and this requires a major concentration on catering the energy demands of the nation. This can be achieved by tapping more from the renewable resources available within our vicinity rather than the conventional coal and petroleum resources. With abundant renewable sources available, they can be used to provide power locally to rural areas primarily based on their electricity demands.

This paper discusses the study of use of a microgrid to meet the energy demand for a remote village named Mudikandan which falls in Sivaganga district in the state of Tamil Nadu in India. A micro-grid is an integrated energy system that consists of loads and distributed energy resources which can either function independently or in parallel with the main grid. Through this paper we propose a micro-grid based electrification solution for the village. The proposed micro-grid based solution will integrate renewable energy sources such as solar and wind to provide stable electricity supply for residential load. For that purpose, we employ a microgrid simulation and optimization software by Homer Energy called as HOMER Pro. The results using both wind and solar energy has been analysed and compared after the simulation.

Index Terms:

Drag, Drop, Re-Arrange, Seat Plan, Images, Reports, Log In, Log Out, Print, Automated / Automation, Grid, Section, Schedule, Load, Computer-Based Systems, Monotonous, Tedious

Multi-level Hierarchical Routing Protocol to Improve Lifetime of Wireless Sensor Networks

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Abstract:--

The wireless sensor network is the decentralized and self-configuring type of network in which sensor nodes are free to join the network at any time. Due to far deployment of the network and small size of the sensor nodes, energy consumption is the major issue of WSN. In this research work, the multi-level hierarchical routing protocol is improved to increase lifetime of WSNs. The simulation of proposed model is done in MATLAB and it is analyzed that number of dead nodes are reduced and number of alive nodes are increased in the network.

Keywords:

Multi-level Routing, WSN, Cache

Robot for Writing Alphabets: A Review from Literature

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Abstract:--

Today's era, large-scale and large-scale industries face common constraints such as lack of time and workers leading to inefficient manufacturing. Appropriate results for the above problems can be achieved using robotics. Furthermore, for meticulous results, image processing methods can be useful. This paper will review the literature on robots that can write characters from various sources and methods. Predict in the future robot who can write this character is very necessary in support of daily activities. Because people no longer have time to do writing work. With this robot all files, images, sounds sent through the media can be written by robots for information that is required. Write pictures of letters coming from the camera. The camera will provide input then the data will be processed using OCR (Optical Character Recognition) technology. The results of the character image processing will be in the process of using OCR technology will be a picture that can be recognized by the received controller system will be processed using a robot arm with results that are identical to the input image of the letters received. Different algorithms build a microcontroller, allowing the robot arm to write letters that come from the camera.

Keywords:

Writing, image, character, Optical Character Recognition (OCR)

Non-Invasive Soya Bean Seed Analysis Using Machine Learning

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Abstract:--

The soya bean is economically the most important legume in the world. Therefore, it is important to grow good quality seeds for a better yield. Identifying the right set of seeds is a difficult task when done manually since, there are no definite external characteristics of soya bean that correlate with its germination potential. Therefore, in this work an attempt is made at correlating the physical properties of soya bean with its germination potential using the concepts of machine learning and image processing. The input here being images, there are different methods to take images of soya bean, that is by using digital camera or radiography. The pros and cons of these methods are discussed. Since, using radiography images is not cost-efficient and its local availability for research purpose is scarce, a digital camera is used to take soya bean images. Once the image dataset is available, different classification methods are employed to classify the images into 'germinating' and 'non-germinating' seeds. The classifiers used are CNN, KNN and SVM and the average accuracy of the classifiers is 66.17%. The performance of different classifiers is analyzed to find the most suitable classifier. It is observed that most of the 'germinating' seeds have intact seed coat, elongated spherical shape, smooth texture and are evenly colored. Whereas, the other half has damaged seed coat, flat shape or not completely spherical, are unevenly textured and discolored at parts. Finally, the suggestions are made to improvise the results.

Effect of Obstructive and Sclerotic Diseases on Blood Flow

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Abstract:--

Cardiovascular system supplies blood to the different organs of the body through blood vessels by the pumping action of heart. Reduction of flow passage and change in mechanical properties of arterial wall are the major cause of various cardiovascular diseases. Over the past decades computational fluid dynamics simulation and mathematical modelling has been employed to understand the hemodynamics and arterial wall mechanism, to investigate specific clinical questions, and to develop curing strategies. The aim of this work is to review the past and the most recent work on computational fluid dynamics simulation of blood flow through unhealthy arteries. Therefore this work provides a brief review of the effects of obstructive and sclerotic diseases on blood flow parameters.

Keywords:

Hemodynamics, Obstructive disease, Sclerotic diseases, Computational fluid dynamics

Green Catalysis: Syntheses and anti-cancer evaluation of some new 2-heterostyrylbenzimidazoles using triacetylborate-glycerol.

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Abstract:--

A series of new 2-heterostyrylbenzimidazoles 3 (a-x) were synthesized as potential antibacterial and anticancer agents. Compounds were synthesized by the newly developed methodology applying green catalysis using triacetylborate (10 mol%) and glycerol. All the newly synthesized compounds were characterized by IR, Mass and NMR spectral analyses. All synthesized compounds were screened for their anticancer activities screened against HeLa (human cervix cell lines), A549 (Human lung carcinoma cell lines), DU145 (human prostate cancer cell lines) and MCF7 (breast cancer cell lines). The results revealed that compounds (3b, 3g, 3h, 3j, 3k, 3n, 3o & 3t) exhibited significant antibacterial activity and compounds (3d, 3g, 3j, 3n, 3q, 3t, 3v & 3w) exhibited significant anti proliferative activity.

Key words:--

2-Heterostyrylbenzimidazoles, Glycerol, Green Catalysis, Anticancer Activity.

Design, Modeling and Analysis of CNTFET based Biosensor Array Models for Cervical Cancer Detection

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Basavaraj Tumbad,Rajiv Gandhi Institute Of Technology, India

Abstract:--

Cervical cancer is the major cancer affecting men and is growing at a very significant rate. One of the major challenges in treatment of cervical cancer is its detection in early stages. The use of Cervical Specific Antigen (CSA) testing has aided the prediction of cervical cancer. The most widespread techniques for detecting cervical cancer are based on the enzyme-linked immune sorbent assay (ELISA). Recently, bio molecule sensors based on quasi one dimensional semiconductor nanostructures like nanotubes, nanowires and nanobelts have attracted considerable attention because of their distinct electrical, optical and magnetic properties. Hence, here we analyze the device properties of Carbon Nano Tubes (CNT) such as mechanical properties, optical and electrical properties and its relevance as cervical cancer detector or CSA detector. The comparison of MOSFET inverter with CNTFET is also carried out and found that CNTFET has same performance as that of MOSFET with less complexity. Carbon nanotubes have many properties, from their unique dimensions to an unusual current conduction mechanism that make them ideal components of electrical circuits. Currently, there is no reliable way to arrange carbon nanotubes into a circuit. CNTFETs with sub-100 nm channel length could be fabricated by means of electron beam lithography. The precision of the Stanford model can be explained by the several non-idealities assimilated such as scattering, effects of the doped source/drain extension region, Schottky barrier resistance and inter-CNT charge screening effects. The quasi-ID device structure gives better gate electrostatics control over the gate region. Increasing the number of CNTs per device is the most effective way to improve the on current. The cervical cancer cells detection at early stage by this CNTFET bio-sensor is noel approach.

Design of Multistage Fast Charging Strategy on Lead-Acid Batteries

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Abstract:--

Battery management system is very important for maintaining optimum battery performance and lifetime. One of the most important part of battery management system is the battery charging strategy. The conventional fast charging method two step charging strategy, combines the advantages and eliminates the disadvantage of constant current charging and constant voltage charging. In this experimental study multistage fast charging strategy based on development of two-step charging strategy are proposed. Experimental result shows that multistage and two-step charging current followed the acceptable current curve and multistage charging strategy is 138s or 11.73% faster than two step charging

Index Terms

Constant current, constant voltage, fast charging, multistage, bidirectional, converter

A Comparative Analysis of Artificial Neural Network and Support Vector Regression for River Suspended Sediments Load Prediction

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Abstract:--

The environmental problems like floods, soil erosion need forecasting so that precautions could be taken, in which suspended sediment estimation helps. Similarly projects of River Engineering like building dams need forecasting of sediments collections. Hence, sediment prediction helps in great deal in river engineering projects as well as pollutants estimation projects of environmental engineering. An artificial neural network (ANN) and support vector regression (SVR) models are used to estimate the sediment discharge in rivers. In this work, we investigate the abilities of ANN and SVR models to estimate the daily suspended sediment load (SSL) in Tawang Chu River, Jang of Arunachal Pradesh, India. The results are obtained and compared for performance of the two models on the basis of their accuracy of prediction of suspended load. Performance is compared using quality measure parameters like mean square error (MSE), mean absolute error (MAE) and root mean square error (RMSE).

Index Terms:--

Artificial neural network, support vector regression, suspended sediment load, prediction.

Modeling Suspended Sediment Load in a River Using Extreme Learning Machine and Twin Support Vector Regression with Wavelet Conjunction

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Deepak Gupta, National Institute of Technology Arunachal Pradesh, India
Mohandhas Berlin, National Institute of Technology Arunachal Pradesh, India

Abstract:--

Sediment load prediction in a river is a complex phenomenon due to various parameters such as tropical climate, extreme rainfall, transportation etc. By decomposition of the data on several steps, the wavelet transformations approach helps to explore the temporal and frequency information for estimation of sediment load prediction. Keeping this idea in mind, in this paper, two conjunction models named as, wavelet based extreme learning machine (WELM) and wavelet based twin support vector regression (WTSVR) are suggested and implemented for sediment load prediction. The results are compared with the standard extreme learning machine (ELM) and twin support vector regression (TSVR). The performances are evaluated based on two quality measures i.e. root mean square error (RMSE) and mean absolute error (MAE). The result shows that wavelet based hybrid models are performing better results as compared to the other standard models.

Index Terms:--

Coiflet wavelet, suspended sediment load, wavelet based twin support vector regression, wavelet based extreme learning machine.

Analysis and reduction of manufacturing non-conformities of non-threaded fastener

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Abstract:--

This paper may be considered as a systematic and collective approach to reduce manufacturing non-conformities of Non-threaded fasteners i.e. Dowel Pin by Basic Quality tools. This paper covers manufacturing process of Dowel Pin and its analysis at various stages of manufacturing. The manufacturing process of Dowel Pin has been analyzed at industry X and done corrections in the process, drawing and holding device of Machine Tool to reduce manufacturing non-conformities. After modification, the results have been improved.

Index Terms

Dowel Pin, Basic Quality Tools, Brainstorming, Centreeless Grinder, Automatic Lathe, Root Cause Analysis.

Design and Implementation of a Smart System for Multiple Applications

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Shambhavi Misra, Jaypee Institute of Information Technology, Noida, India

Abstract:--

At Present, agriculture includes forestry, dairy products, fruits cultivation, poultry farming, etc. apart from farming. One of the main problem or concern of farmers is irrigation. There are various factors that affect irrigation like proper timing and proper amount. This paper presents a system that can improve the lives of farmers. This system, besides farming can help farmers in various ways, as they are not dependent only on crops for their livelihood. This system comprises of various subsystems that can reduce their effort. To deal with the problem of irrigation, the humidity of the soil is constantly measured using soil humidity sensor. When there is no humidity in the soil an SMS will be send to the concerned farmer. Another problem of the farmers is the safe storage of grains for which this system can be a useful solution. With help of smoke and fire sensors the possibility of fire can be avoided. If a farmer is doing poultry farming then the proper temperature can be maintained for eggs during hatching. Another subsystem is also designed to utilize the solar energy of the sun. This energy is the best and cheapest source available to the people especially farmers. For this whole system to work we have used ARM7 (LPC2148) microcontroller.

Study on properties of Nano concrete using industrial waste

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Abstract:--

According to survey reports of 2018, the world population reached 7.6 billion in April 2018 and among that 54% of the lives in the urban areas and it will reach to 66% in 2050.Due to increase in the population in the urban areas, necessity of tall buildings for effective use of land and resources. Ultra-high strength concrete structures play a vital role in the construction of tall buildings. Lateral loads become an increasingly dominant parameter for the planning and design of tall building. In lateral load, HSC are most likely used in the structural columns and walls. The dynamic properties of the main wind force-resisting system must be taken into account. For effective use of the carpet area in the tall buildings, the buildings should be of thinner structural members with high strength and durability. This paper deals with development of high strength concrete by using the industrial slag. Usage of sand will deplete the natural resources of the country but nowadays they are using M-sand that too deplete the natural resources (rocks). Using of industrial waste (slag) as a replacement of river sand will solve the above mentioned problem. This paper presents the developed high strength concrete of 110MPa compressive strength and other mechanical properties.

Anomaly Detection in Wireless Sensor Networks for Precision Agriculture

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Tanima Dutta, Department of Computer Science and Engineering, IIT (BHU) Varanasi, India

Abstract:--

Monitoring of agricultural field using sensors provide valuable information about the crops to the farmers. The information consists of the real-time pH level, humidity, temperature, etc. Such information is obtained using wireless sensor network which is to be analyzed for predicting the right time of irrigation and amount of water needed by the crops. It is true that this prediction depends on the quality of obtained data. There are several anomalies that can influence the quality of data, such as, battery drainage, communication failure, and faulty measurements. In this paper, we therefore discuss various ways to detect such anomalies to get precise information about the agricultural field.

Index Terms

Agricultural field, mobile sink, sensors.

Towards Effective Bug Triage with Software Data Reduction Techniques

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Abstract:--

A software bug is a problem which causes a computer program or system to crash or produce invalid output or to behave unintended way. Software bugs are unavoidable. Many software companies have to face large number of software bugs. Bug Triage consumes more time for handling software bugs. It is the process of assigning a new bug to the correct potential developer. In this paper, we deal with the software bugs where large software company spent lot many of their cost in the same. The step of fixing the bug is called as bug triage where we correctly assign a developer to a new bug. Here, we address the problem of data reduction for bug triage. The problem of data reduction deal with how to reduce the scale and improve the quality. Hence, we combine instance selection with feature selection both simultaneously to reduce bug dimension and word dimension. We also extract the historical bug data set and predictive model to build new data set. This work provides leveraging techniques on data processing for high quality bug data in the software development.

Keywords :

Bug Triage, Bug Repositories, Bug Data Reduction, Feature Selection, Instance Selection, Machine Learning Techniques.

Cascading of RBFN, PNN and SVM for Improved Type-2 Diabetes Prediction Accuracy

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Abstract:--

Diabetes is a metabolic disorder caused by a defect in insulin secretion or action (or both) leading to hyperglycemia (high glucose levels). Over time, hyperglycemia damages nerves and blood vessels, leading to complications like heart disease, stroke, kidney disease, blindness, nerve problems, gum infections and amputation. In order to increase the classification accuracy on diabetes data in this paper a dual-stage cascaded ensemble framework is proposed. This frame work has two stages; the first stage consists of simple Radial Basis Neural Network (RBFN) and simple Probabilistic Neural Network (PNN). The results from both the neural networks are combined and serve as inputs to the second stage classifier called support vector machine. The soundness of proposed framework is validated using Pima Indians Diabetes dataset. The Experimental results indicate that the proposed Dual stage network out performs individual as well as state of-the-art models.

Key-words:--

RBFN, PNN, SVM, Cascading, Ensemble Technique,Diabetes prediction

Design, Fabrication and Modelling of Four-Wheeled Mobile Robot Platform with Two Differentials and Two Caster Wheels

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Abstract:--

Speech recognition has a high complexity and a broad range of applications, since it has to predict the word under many types of distortions. This paper aims to compare the performance of different optimization techniques like Genetic Algorithm (GA), Particle Swarm Optimization (PSO), Artificial Bee Colony (ABC) for optimizing the different hidden layers and neurons of the hidden layers of artificial neural network (ANN), for maximum recognition accuracy. The features of input speech signals are extracted using amplitude modulation spectrogram (AMS). The outcome demonstrates that the accuracy of ABC is 95.3% and it performed better when compared with the other optimization techniques.

A Study of Impact of Cultural Dimensions on ATM User Experience

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Abstract:--

User Experience is an overall experience of a user using a product may be a tangible product or an intangible product like software. This study aims to improve the overall user experience of Automated Teller Machines (ATM) by identifying the influence of cultural dimensions using the factors proposed by Hofstedde and Bond, Kluckholn and Strodbeck, Hall, Parsons and Shill, Trompenaar, Shwartz frameworks. The Cultural Dimensions related to the User Experience of ATMs (region-wise) based on contextual inquiries and online surveys conducted.

Keywords:

Cultural Dimensions, User Experience, White Label ATMs

Measuring the Efficiency of Leather Industry, a Comparative Analysis of Pakistan and India.

An Application of DEA Double Bootstrap Technique

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Abstract:--

The aim of this study is to measure and compare the technical and scale efficiency of leather industry in the context of Pakistan and India through DEA double bootstrap technique. While conducting quantitative research, secondary data was collected from leather industries annual reports and different data bases over the period of 2014-2017. First, the study applied bootstrapped DEA technique for measuring bias-corrected technical efficiency scores by utilizing 2 inputs (capital, labour) and one output (sale). Finally, the study employed the bootstrapped truncated regression model for determining the sources of technical efficiency. The results of the study reveal that some of the firms are technically fully efficient while some of the firms are less efficient over the period under consideration. The study also estimated the technical efficiency score of the firms at individual level, group-wise, and overall efficiency score of the firms in the sample. On the basis of analysis, it is suggested that there is intense need to establish training institute to improve the labour quality through training, guidance and equip them with the modern techniques needed for the enhancement of their productivity.

A Novel Approach to Analyze Cyber Racism: A Review

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Abstract:--

Cyber Racism is the phenomenon of racism online including online micro aggressions, online racist hate speech and cyber bigotry. It is heightened during crises or threat. People posts their opinions, feelings and expressions on twitter- one of the most popular reporting tools towards each other which will help terrorists to influence people and recruit them as new group members. This paper presents a framework for detection of cyber racism. Framework consists of six modules: Twitter search API, Twitter database, Data preprocessing, cleaned database, Sentiment analysis, Label learning. This proposed framework would help in forming new policies aimed at reducing racism activities online as to protect people from getting trapped by terror groups.

Index Terms-

Terrorism, Cyber Racism, Twitter Search API, Sentiment Analysis, Data Preprocessing.

Numerical Investigation of Detonation Wave Propagation in Pulse Detonation Engine with Obstacles

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Abstract:--
The numerical investigation of Detonation wave propagation and Deflagration-to-Detonation transition is carried out in a straight long tube of pulse detonation engine with stoichiometric (ϕ=1) mixture of hydrogen-air at ambient pressure and temperature of 0.1 MPa and 293 K, respectively. The detonation tube contains obstacles having blockage ratio (BR) 0.5, 0.6 and 0.7, and having 60 mm gap among them. The computation analysis is performed firstly on a simple straight tube having no obstacle (BR=0.0) and then obstructed channel. The combustion phenomena of the fuel-air mixture are modeled by one-step irreversible chemical reaction model. Three-dimensional Navier-Stokes equations along with realizable k-ε turbulence model are solved by the commercial computation fluid dynamics software ANSYS Fluent-14 code. The performance of the pulse detonation engine (PDE) depends on the blockage ratio (BR) of obstacles. The simulation results show that the initiation and propagation of flame are due to the exothermic expansion of hot combustion gases. The obstacles generated turbulence at obstacle wakes, which caused to increase flame surface area. Therefore, obstacles reduced the Deflagration-to-Detonation transition (DDT) run-up length. The perturbation inside the combustor increases as increased the blockage ratio of the obstacle. The PDE Simulation results of with and without obstacles were analyzed and compared with adiabatic flame temperature.

Keywords:
Obstacles; Detonation; Turbulent flame; Pulse Detonation Engine.

Fermented wine like beverage from Sugarcane juice: A review on its production, quality assessment and future scope

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Umesh B. Deshannavar, Professor and Head, Chemical Engineering. Dept. KLE's Dr. M.S. Sheshgiri college of Engineering and Technology, Udyamabag, Belgavi

Abstract:--

Sugarcane, Saccharum officinarum L. is one of the tallest members of the grass family, and important cash crop used for sugar production cultivated in more than 110 countries, with 50% of total production occurring in India and Brazil. Sugarcane juice is rich in sucrose content which is the best source of carbon for microbial growth thus can be an effective substrate for fermentation. Surplus production of sugarcane can be utilized for making alcoholic beverages to avoid post-harvest losses of matured cane and hence gets preserved in the form of fermented beverage.The blend of sugarcane juice with different fruits produces an alcoholic beverage of better quality than sole sugarcane juice. This review summarizes current knowledge about the usage of sugarcane juice and sugarcane –fruit juice blend for making alcoholic beverages and also elaborates its compositions like phenolic content, antioxidant activity, volatile compounds and sensory evaluation.

Design Concept of a Bio-Electronic Heart Using Artificial Muscles.

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Abstract:--

The objective of this study paper is to introduce a new preliminary design of a bio-electronic heart which will facilitate the use of artificial muscle and an electric pulse generator which will enable the structure to act-alike the biological heart.

The following research on this design will aim at creating a solution for less heart transplant donors available, transplant rejection and following immunosuppressant medication given to suppress the contradictory reactions between donor's and recipient's tissues.

The decade has already witnessed the era of micro and nano-scale robots being used in field of medical science for treatment and/or elimination of diseases like tumours, blood clots etc. And it has also observed a rapid growth in developing biological substitutes to restore, replace or regenerate defective tissues by means of tissue engineering.

In this paper, I aim to collaborate both the activities to imitate biological muscle movements of human heart and reproduce them by means of artificial muscles made up of EAPs. Electroactive polymers (EAPs) are materials that change their shape and/or dimension in response to an electric stimulus, and thus accomplish movements that are smooth enough to mimic the biological muscles.

Optimization of LED lighting System for horticulture application – A Simulation

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Abstract:--

The scope for application of Light Emitting Diodes (LEDs) as grow lights has enhanced significantly in the recent past. The place of LEDs as the most commonly used lighting fixtures in the horticulture industry looks imminent in the near future. LEDs have the capability to be provided desired light quantity and quality which aids the plant growth. All the plants mainly absorb the red and blue spectrum for their growth and development. In this work various Spectral Power Density (SPD) models were simulated and compared with practical SPDs. On comparison of different SPD model functions, the Asymmetric Gaussian function provided very good overlap. Database of several LEDs were created. Linear Programming (LP) was developed for spectrum matching and optimize the number of LEDs. Also the CCT and PPFD were compared with the reference spectrum. The SPD models and LP were simulated using MATLAB software.

Keywords:--

Photosynthetic Photon Flux Density (PPFD), Full Width Half Maximum (FWHM), Integrating sphere, Spectral Power Density (SPD)

Denoising Medical Images Using Classic Non Local Means and Its Fast Variants: A Detailed Study

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Abstract:--

Non Local Means filter is an efficient denoising algorithm that brought a drastic improvement in denoising and is remarkably better than older generation algorithms in restoring the original image. Initially NLM filter proved to be efficient but particularly for additive noise. Since the denoising results of NLM were such that researchers made successful attempts to model it according to the characteristics of multiplicative noise present in medical images and the results provided were much better than the prior local methods. It must be noted medical images are corrupted with multiplicative noise such as speckle noise and Rician noise. This paper presents a detailed study of the Non local means denoising algorithm when applied to medical images. Also the traditional NLM is inferior in terms of execution time which led to the improved fast versions of NLM. Some of those improved NLM methods for medical images are also discussed in this paper.

Index terms:

Non local means, Medical images, denoising, Gaussian noise, multiplicative noise.

Assessment of Vehicle Body Vibration in Indian Motorbike Riders

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Abstract:--

The major Indian population depends on motorbikes for their transport due to cost-effective motives. The vibration is most common in Indian motorcycles because of its active nature. The motorbike riders are subjected to excessive vibrations. This study aimed to assess the risk exposures that are involved in the motorcycle riders due to vehicle body vibration. This study involves 5 subjects who drive 4 different Indian made motorbikes. The arbitrary names assigned to the different motorbikes considered for the study were A, B, C, D. Seat vibration were measured using a tri-axial seat pad accelerometer placed on the seat. Based on ISO 2631 standard, the ideal acceleration range should be between 0.4 m/s^2 – 2.0 m/s^2. Seat vibration obtained for bike A and B falls between the ideal acceleration range. The Seat vibration obtained for bike C is 2.142m/s^2. Our findings reveals that Bike D's seat vibration were more than the ideal acceleration range. Increase in vibrations in Motorbike C and D are exposed to lower back pain and other health risks. Essential ergonomic modifications were suggested in the kerb weight and volume of the cylinder to reduce the vibration risk exposures.

Keywords:

Motorbike, Seat vibration, Tri-axial seat pad Accelerometer, Ergonomics

Comparative Study of Energy efficient and Quality of Service based Routing Protocols in Wireless Sensor Networking

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Sunil Kumar, Department of Electronics and Communication Engineering, Oriental University Indoor.

Abstract:--

A wireless sensor network (WSN) consists of a large number of sensor nodes which are deployed over an area to perform local computations based on information gathered from the surroundings. With the increasing demand for real time applications in the Wireless Senor Network (WSN), real time critical events anticipate an efficient quality-of-service (QoS) based routing for data delivery from the network infrastructure. Hence, maximizing the lifetime of the network through minimizing the energy is an important challenge in WSN; sensors cannot be easily replaced or recharged due to their ad-hoc deployment in hazardous environment. Considerable research has been focused on developing robust energy efficient QoS based routing protocols. The main focus of this article is primarily on periodical cycling schemes which represent the most compatible technique for energy saving and we also focus on the data-driven approaches that can be used to improve the energy efficiency. Finally, we will make a review on some communication protocols proposed for sensor networks.

Index Terms:--

Wireless sensor networks, Quality of service, Energy efficient, MAC

Classification of Human Emotions using EEG signal analysis under different Audio-Visual Stimuli

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Abstract:--

Emotions play an important role in human cognition, perception, decision making, and interaction. In this paper, classification of human emotions is proposed by extracting features from Electroencephalogram (EEG) signal under different Audio-Visual Stimulus (AVS). EEG data for the classification of emotions is obtained from the DEAP database. Totally 32 patients' watched 40 minute long videos and their peripheral physiological signals and electroencephalograms were recorded. A down sampled (128 Hz), pre-processed and segmented versions of this data were used to extract multiple Time-Series features in particular frequencies across an array of relevant electrodes through Matlab. There are reports on voice based, facial image based study of expressions to recognize their emotions. However, emotion identification using both methods can be biased as they can be faked. In order to overcome this difficulty, many researchers analyze brain physiological signals to represent the changing patterns during emotional fluctuations. A new dataset corresponding to the channels and features are used to classify these EEG signals into two classes - Anger and Calmness using K-Nearest Neighbour (KNN) classifier.

Keywords:

Emotion recognition, EEG, physiological signal, AVS, KNN.

Security of Medical Big Data Images using Decoy Technique

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Abstract:--

The tele-radiology technology helps in bringing the communication between the radiologist, patients and healthcare units situated at distant places. This involves exchange of medical centric data. The medical data may be stored as Electronic Health Records (EHR). These EHRs contain X-Rays, CT scans, MRI reports. This potentially forms big data which can be termed as medical big data (MBD). Using Healthcare Cloud can be used to handle MBD. Since lack of security to EHRs can cause havoc in medical IT, healthcare cloud must be secure. This paper discusses the decoy technique to provide security to EHRs. It also involves study on honey-pots and intrusion detection techniques. Further it identifies the possibility of an intrusion and alerts the administrator.

Key words:-

Medical Big Data, Cloud Computing, Security, Decoy, Honey-pot, Intrusion Detection.

Heat Transfer from Extended Surface Microchannels: A Review

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K. M. Pandey, National Institute of Technology, Silchar, Assam, India

Abstract:--

Due to higher energy requirements and need for sophisticated equipment for heat disbursement, there is a rapid development in technology. Due to technological advancement there is a need to increase the heat dissipation from the compact systems. Microchannel heat sinks are found to be reliable solution to have high heat dissipation rates due to its high heat carrying capacity. Now many high heat flux applications are using microchannels for effective cooling. In present review, heat transfer improvement in microchannel was studied. Enhanced heat transfer by using finned microchannels, offset ribs on sidewalls, shapes of channels, secondary channel, hybrid technique of ribs and secondary channels. Numerical analysis shows that Upstream finned microchannels are more effective than downstream finned microchannels and plain microchannel. When done analysis with various configurations of secondary flows it shows that TC-RR-SC (Triangular cavities-Rectangular ribs and secondary channel) design has an extraordinary overall performance compared to other designs due to combined effect of thermal boundary layer re-development and flow mixing in main channel. When analysis done with combinations of ribs and secondary channels, the MC-SOCRR (microchannel with secondary oblique channels and Rectangular Ribs) performs better compared to other configurations of secondary channels.

A study on the Influence of hybrid fibers on mechanical properties of cementitious composites at low fiber volume fractions.

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D Ravi Prasad, Assistant professor, Department of civil engineering, NIT Warangal, India

Abstract:--

This study is aimed to develop and investigate the effect of fiber hybridization on low (30 MPa), medium (50 MPa) and high strength concretes (70 MPa). Mechanical properties of hybrid fiber reinforced concrete (HFRC) incorporated with steel, polyester and polypropylene fibers were studied on three grades of concrete. Hybridization was done in two stages, the first stage of the investigation was to develop and study the effect of polyester-polypropylene (Non–metallic) HFRC at a total fiber volume fraction of 0.15%. Further, the investigation was carried out to develop a hybrid fiber reinforced concrete made with metallic (hooked-end Steel) and non-metallic fibers at a total fiber volume fraction of 0.5%. Mechanical properties, namely compressive strength, direct tensile strength and flexural strength were investigated. The results obtained were compared with mono-fiber reinforced concrete and conventional concrete. Significant improvement in direct tensile strength and flexural strength observed with the with the fiber hybridization compared to mono-fiber reinforced concrete and control mix. This may be due to synergic response of different fibers at different scales of cracking at different stress levels in concrete. Superior results were observed at metallic – non-metallic hybridization due to exhibition of synergetic response of fibers by inhibition of crack growth and propagation, at different scales of cracking at different stress levels in concrete.

Keywords:

Hooked-End steel (HS), Polyester (PO), Polypropylene (PP), fiber reinforced concrete (FRC), hybrid fiber reinforced concrete (HFRC).

Optimization of Multi-color LED Light Sources using Genetic Algorithm and Linear Programming

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Abstract:--

Multicolor LEDs play an important role in the field of general lighting. These LEDs when mixed appropriately, can produce various Correlated color temperatures with different optical spectrums according to the required application. The wavelength composition of an optical spectrum defines the quality of light and its suitability to be used for various applications. Human centric lighting focuses on the quality of light which can improve work efficiency, increase concentration, change the mood without affecting one's vision. Hence, in this paper we have proposed an optimization technique using Genetic Algorithm and Linear Programming for the selection of appropriate LED wavelengths to match the target CCT and luminous flux. The algorithm also controls the quality of spectrum by optimizing the intensity of blue light in the wavelength range of (400-500) nm thereby reducing blue light hazard which is harmful for human vision. The result shows that for a target CCT of 5000K and flux of 500lm six different wavelength LEDs were selected by the algorithm. The algorithm has also preserved the quality of spectrum by considering very less proportion of blue in the specified wavelength range.

Keywords

Human Centric Lighting, Genetic Algorithm, Linear Programming, Blue light Hazard

Review on Recent Advances in Pulse Detonation Engine.

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Abstract:--

A pulse detonation engine, or "PDE", is a supersonic relative of a jet engine, known as supersonic pulse jet engine. It is an experimental propulsive device that uses supersonic combustion waves as detonation mechanism. The main difference between a jet engine and a pulse detonation engine is the method of combustion. In a jet engine, deflagration waves are the cause of combustion, a subsonic combustion flame propagates in the chamber. But PDE works under detonation, combustion involving a supersonic exothermic front accelerating through a medium and it drives a shock front propagating directly in front of it. This type of propulsion system has the capability to do efficient combustion and rapid energy and material conversion. The basic operation of the PDE consists of air fuel mixing then mixture ignition by detonation waves. At last the exhaust gases are expands through a nozzle producing a thrust. The time taken by the combustion mechanism was very less hence the entire process considered as constant volume process. Up to now, no practical PDE engine has been put into production. The present review analysis gives the further scope in research in the area of pulse detonation engine and practical possibilities of PDE..

Perceptual Hash for Compressed Medical Video

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Abstract:--

The perceptual hash dependent on the content of the multimedia object is widely used to protect from copy attack, a watermark estimation attack, that causes protocol ambiguity in a watermarking system. Frame averaging is mainly used for watermark estimation. Motion coherency is essential to resist temporal frame averaging. Compressed domain techniques have less complexity as full decoding and re-encoding is not required. As far we know, no perceptual hash based on motion coherency especially in compressed domain is yet explored. Our main contributions are: 1) motion coherent macroblocks are detected in compressed domain; 2) a perceptual hash is extracted from robust compressed domain features, like, luminance intra prediction modes, zero or nonzero value DC coefficients and chrominance modes of motion coherent macroblocks; 3) finally, the robustness of motion coherent perceptual hash is experimentally verified against different attacks. A feature based comparative study and time complexity of our method are also discussed.

Index Terms

Compressed domain, perceptual hash,motion coherent, copy attack, temporal frame averaging

Microcontroller based Voice controlled Home Automation system using MATLAB and Smartphones

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Shreya Matta, Department of Electronics and Communication Engineering, Institute of Technology, Nirma University, Ahmedabad, India

Abstract:--

Speech Recognition based Home Automation is an automatic and electronic control of household features, activity and appliances using the speech. The techniques proposed in this paper supports specially challenged people with the greatest degree of personal autonomy. It presents the use of the active senses of disabled to control the switching off or on of Led, achieved via voice detection and speech recognition methods implemented on MATLAB along with the Arduino board. Further, to make it cost effective and a stand-alone system, the novel technique of implementation of the following using Android application (Android Meets Robot) AMR_Voice in smartphones and a Bluetooth module HC-05, controlling the light bulb with the help of microcontroller Arduino mega 2560 has been proposed in this paper. The results of the stand-alone technique indicate that the proposed approach provides better results with less complexity and a higher rate of efficiency.

Key words:--

Speech Recognition; MATLAB; Frequency Spectrum; AMR_Voice Android Application; Arduino Microcontroller; Bluetooth Module;

Numerical Study of Effects of Curvature of Synclinal Basement Topography on Ground Motion Characteristics

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Abstract:--

This paper presents the effects of curvature of synclinal basement topography (SBT) on ground motion characteristics. Seismic responses of various SBT models have been computed using a 2D fourth order accurate staggered-grid finite-difference algorithm for SH- wave propagation simulation in viscoelastic medium. The analysis of simulated results revealed a drastic change in ground motion characteristics and generation of new seismic phases. Frequency dependent spectral amplification was inferred and an increase in this phenomenon was noticed towards the focus of SBT. Analysis of these results illustrates the importance of a consideration effect of SBT on ground motion in the seismic microzonation and assessment of seismic hazard analysis.

Key Words:

Simulation of viscoelastic seismic response, finite difference method, Basement topography effects, focusing and defocusing effects.

Optimization of Bivariate Cost Function arising in Economic Order Quantity problem using Genetic Algorithm and Bacterial Foraging Algorithm

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Abstract:--

The most common inventory situation faced by manufacturers, retailers, and wholesalers is that stock levels are depleted over time and then are replenished by the arrival of a batch of new units. A simple model representing this situation is the following economic order quantity model or, for short, the EOQ model. (It sometimes is also referred to as the economic lot-size model.) Units of the product under consideration are assumed to be withdrawn from inventory continuously at a known constant rate, denoted by a; that is, the demand is a units per unit time. It is further assumed that inventory is replenished when needed by ordering (through either purchasing or producing) a batch of fixed size (Q units), where all Q units arrive simultaneously at the desired time. For the basic EOQ model to be presented first, the only costs to be considered are K setup cost for ordering one batch, c unit cost for producing or purchasing each unit, h holding cost per unit per unit of time held in inventory. The objective is to determine when and by how much to replenish inventory so as to minimize the sum of these costs per unit time. We assume continuous review, so that inventory can be replenished whenever the inventory level drops sufficiently low.

Intrusion Detection Techniques for Secure Communication in Different Wireless Networks

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Prof. Dr. Jatinder Singh Bal, Vice Chancellor, SBBS University, Jalandhar

Abstract:--

Technological advancement in the design of wireless communications have propelled an active interest in the field of Wireless Networks, Wireless Sensor Networks (WSNs), and Mobile Adhoc Networks (MANETs). Security and privacy are speedily replacing performance as the primary concern in many scenarios of wireless networking. The existing security solutions cannot assure that attacks will not be launched and if launched, will not be successful. One of the biggest problems with Wireless Network security is that, all types of attacks are not known, and new ones emerge constantly. Moreover, there is also a range of attacks that can be launched in the different mode, and thus making it more difficult for the Intrusion Detection System (IDS) to detect them. Therefore, detection and isolation of malicious intrusions become an important part of an integrated approach to network security. In this paper, I have proposed three different techniques for securing Wireless LAN, WSNs and MANETs.

Keywords:

Wireless Networks, Wireless LAN, WSNs, MANETs, Intrusion, IDS.

Numerical Investigation on Friction Factor Characteristics for Protruded Channel under Turbulent Cross-Flow Condition

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Abstract:--

In the present study, the effect of protrusion pitch, protrusion height, and duct Reynolds number on friction factor characteristics of small rectangular channel with protrusions in cross-flow scheme is analyzed to obtain a suitable configuration of protrusion pattern. Cross-flow is obtained by combining main duct flow (along the direction of length of duct) and nozzle flow which ejects air normal to the protruded bottom wall for the enhancement of heat transfer rate. Finite volume method is used to solve conservation of mass, momentum, and energy equations along with k-ω turbulence model for the analysis of hydraulic performance of protruded channel. Reynolds number from 8360 to 33950 for duct flow and 5120 for nozzle flow are considered with air as working fluid. It is predicted that the friction factor is increased with the increase in protrusion pitch.

Keywords:

Channel, Cross flow, Friction factor, Protrusion.

Geo-Morphometric Analysis using Remote Sensing and GIS Techniques in a Fluvial System: A case study on Udyavara River Basin South West Coast of India

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Abstract:--

Udyavara river basin is a tropical coastal river basin with Arabian Sea to west. Western Ghats to the East and couple of Inselbergs to the Central and East. The location of the basin, it's diverse Physiography from the flat coastal plain, with intervening inselbergs, lateritic plateaus and mounds with river system originating from Western Ghats. An analysis of slope, Drainage frequency, Drainage Density has been carried out for Udyavara River basin. Result shows a variation from North East to the South West coast tracts. Morphometric and 3rd order river basin shows high correlation value between stream length, stream number, with stream, area and basin perimeter and basin length. High Value of Runoff is around (R=0.93) which is recorded for total stream length and basin length. Drainage Frequency simulates drainage density in spatial distribution. The major part of the basin is occupied by high frequency and high density. Rainfall- Isohyets map of Udyavara define low rainfall towards coast and high rainfall towards Western Ghats. The river basin is dominated by variety of drainage pattern including Dendritic, Ridge Pattern, Braided Pattern, Ridge Pattern, Radial, Sub parallel etc., spatial distribution of slop depicts a slope value > 20 towards the west of the study area. This terrain is a linear band, parallel to the coast. Low Slope values have been recorded towards the south coast and relatively high towards south eastern part of the basin. This enhance slope value is due to the presence of the Inselbergs. (121m). In general, the terrain depicts low slope values, unlike terrains that have the Western Ghats where slope of >300 (degree) have been reported (Raghavan B R., 1988)

Key Words-

Fluvial System. Western Ghats. India

Sensor Based Smart Farming and Plant Diseases Monitoring

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Abstract:--

In India farming is the primary source of income in almost all villages. Depending upon the weather conditions and availability of power supply, farming systems in India are strategically utilized .With the acute water crisis being faced by our country and the depleting water level, farmers now face optimum water management issues. Power supply to farmers is untimely and not reliable, nearly one-fifth of India's rural households still remain in acute darkness. The proposed system mitigates and provides a cost effective solution to address these issues. The system detects the water requirement of the soil based on soil moisture, temperature and humidity sensors. A threshold water level is set based on the plant type to automate the motor on/off operations. This is a convenient and affordable system which detects the supply voltage to automatically control motor operations. This system detects the phase voltage by using a phase detection circuit and sends a message to the farmer regarding availability of power supply. By using above sensors this system can also be tuned for disease monitoring. It also consists of a look up table which provides early stage plant disease prediction based on disease monitoring. ARM-7 LPC2148 is used which works on 3.3V power supply. The proposed model provides optimum use of resources for irrigation, reduces water requirement and helps to increase the crop yield.

Index Terms

GSMSIM 800,ARM 7,Automated irrigation, Disease Monitoring, Optimum irrigation.