ISBN: 978-81-937041-9-6

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ICRAAESCCT 2018

International Conference on

Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

12th & 13th July 2018

BVRIT, Narsapur, Telangana.

Organised By

B. V. Raju Institute of Technology

Vishnupur, Narsapur, Medak District, India

&

Institute For Engineering Research and Publication (IFERP)

In Association with

SAEINDIA

ICRAAESCCT -2018

IFERP-ICRAAESCCT

ICRAAESCCT -2018

ICRAAESCCT – 18

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana

12th – 13th July, 2018

Organized by:

B. V. Raju Institute of Technology

and

Institute For Engineering Research and Publication

In association with

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Preface

The ***"International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies"*** is being organized by ***B. V. Raju Institute of Technology,*** Vishnupur, Narsapur, Medak District in association with ***IFERP-Institute for Engineering Research and Publications*** *on the 12th – 13th July, 2018.*

B. V. Raju Institute of Technology has a sprawling student –friendly campus with modern infrastructure and facilities which complements the sanctity and serenity of the city of Narsapur in Telangana.

The ***"International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies"*** was a notable event which brings academia, researchers, engineers, industry experts and students together.

The purpose of this conference is to discuss applications and development in area of **"Applied Engineering Sciences, Computer and Communication Technologies**" which were given international values by ***Institute for Engineering Research and Publication (IFERP).***

The International Conference attracted over 476 submissions. Through rigorous peer reviews 306 high quality papers were recommended by the Committee. The Conference aptly focuses on the tools and techniques for the developments on current technology.

We are indebted to the efforts of all the reviewers who undoubtedly have raised the quality of the proceedings. We are earnestly thankful to all the authors who have contributed their research works to the conference. We thank our Management for their wholehearted support and encouragement. We thank our Principal for his continuous guidance. We are also thankful for the cooperative advice from our advisory Chairs and Co-Chairs. We thank all the members of our local organizing Committee, National and International Advisory Committees.

ICRAAESCCT -18

On behalf of ***Institute For Engineering Research and Publications (IFERP)*** and in association with ***B.V.Raju Institute of Technology,*** Vishnupur, Narsapur, Medak District, I am delighted to welcome all the delegates and participants from around the globe to ***B. V. Raju Institute of Technology, Vishnupur, Narsapur, Medak District*** for the ***"International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies (ICRAAESCCT -18)"*** which will take place from ***12th -13th July'18***

It will be a great pleasure to join with Engineers, Research Scholars, academicians and students all around the globe. You are invited to be stimulated and enriched by the latest in engineering research and development while delving into presentations surrounding transformative advances provided by a variety of disciplines.

I congratulate the reviewing committee, coordinators (IFERP & BVRIT) and all the people involved for their efforts in organizing the event and successfully conducting the International Conference and wish all the delegates and participants a very pleasant stay at Narsapur, Medak District.

Mr. R.B.Satpathy,

Director,

Institute for Engineering Research and Publication.

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MESSAGE

Sri K. V. Vishnu Raju
Chief Patron, ICRAAESCCT-2018 and Chairman, Sri Vishnu Educational Society

It gives me immense pleasure and pride to note that BVRIT, Narsapur is organizing an International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies (ICRAAESCCT-18) during 12th and 13th July, 2018.

The theme of conference is indeed the need of the hour and hope this will certainly provide some concrete and fruitful solution to the present technological revolution.

I trust that ICRAAESCCT-18 would provide an opportunity to Researchers, Scientists, Engineers, Industrialists and P.G Students from various disciplines to exchange their views and ideas in different areas. I wish the conference provides an opportunity for the researchers of different disciplines to exchange ideas and share knowledge through seminars, presentations and discussions.

I am sure that outcome of the deliberation will be highly beneficial to the participants and in general to the nation as well as this event become one of the milestones in the history of SVES Group of Institutions.

My best wishes to all.

K.V.Vishnu Raju

MESSAGE

Sri Ravichandran Rajagopal
Patron, ICRAAESCCT-18 and Vice Chairman, Sri Vishnu Educational Society

I am happy to note that BVRIT, Narsapur is conducting an International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies (ICRAAESCCT-2018), which seems to provide an excellent forum for professors, scientists and engineers working on different aspects of Engineering, Computer Science and Communication.

The field is witnessing rapid development in recent years. This conference will provide a platform to bring together researchers from various academic, industrial and research organizations to discuss about the modern trends in Computer Science and Communication applications. These types of events will give an ideal opportunity for experts and amateurs in this field to keep abreast of the latest trends and exchange ideas about exciting new developments.

I congratulate the BVRIT for organizing the well-structured conference and I am confident that the participants will derive immense professional benefit through discussion during the conference.

My best wishes to the participants and organizers of ICRAAESCCT-18.

Ravichandran Rajagopal

MESSAGE

Dr. Sunder Rajan
Patron, ICRAAESCCT-2018 and Director, Sri Vishnu Educational Society

It gives me immense pleasure that B.V.Raju Institute of Technology, Narsapur is organizing an International Conference on Research Advancements in Applied Engineering Sciences Computer and Communication Technologies (ICRAAESCCT-18) during 12th and 13th July, 2018. An important aspect in any field or discipline is Research & Development in that field and dissemination of information/ knowledge gained from R & D to the wider community. The overall objective and goals of particular research can be validated with respect to its relevance and importance to the community only when it is disseminated through conferences, presentations and peer reviewed journal publications.

I would like to pass on my best wishes to the organizers of ICRAAESCCT-2018 for taking up the initiative to organize it. I hope the participants will gain some interesting insights from the conference.

Dr. Sunder Rajan

MESSAGE

Sri K. Aditya Vissam
Patron, ICRAAESCCT-2018 and Joint Secretary, Sri Vishnu Educational Society

I am pleased to know that B.V.Raju Institute of Technology, Narsapur is organizing an International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies (ICRAAESCCT-18) during 12th and 13th July, 2018. The theme of the conference is on advancements in Computer Science, Applied Engineering and Communication related topics which will meet the contemporary demands of the industry.

I understand that this international conference on ICRAAESCCT-18 has brought together distinguished researchers and scientists from all over the state. I hope that the speakers, paper presenters and all others associated with this conference will make this a successful event by coming up with concrete recommendations for the development of Applied Engineering, Computer Science, Information Technology and Communication advancements.

I wish ICRAAESCCT-2018 conference a successful event.

Sri K. Aditya Vissam

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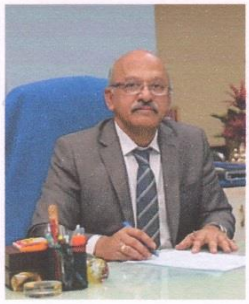
Vice-Chancellor



MESSAGE

I am extremely happy to note that the B.V.Raju Institute of Technology (UGC-Autonomous) Narsapur is organizing 2-day International Conference on Recent Advancements in Applied Engineering Sciences, Computer and Communication Technologies (**ICRAAESCCT-2018**) during 12th and 13th July 2018.

International Conference **ICRAAESCCT-2018** provides an excellent opportunity to the teaching fraternity to augment their knowledge and platform for budding tech-wizards across India to rejuvenate their talents. Interactions with the luminaries in the field ignite the passion for undertaking research in their chosen field.

I congratulate the organizers for coming out with this kind of programme, which I am sure, will go a long way in fulfilling the objectives set out.

I wish the programme all the Success.

VICE-CHANCELLOR

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(Established by Act No. 30 of 2008)

Kukatpally, Hyderabad - 500 085, Telangana State, India

Dr. N. YADAIAH
B.E.(OUCE), M.Tech. (IIT KGP), Ph.D (JNTU)
SMEEE, FIE, FIETE, MSSI, MISTE
Professor of EEE &
REGISTRAR

MESSAGE

I amextremely happy to share that BVRIT, Narsapur is organize an International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies (ICRAAESCCT-18) during 12th and 13th July, 2018.

Innovation is a keyword to the launch of novel products in this world. It gives me a colossal pride in organizing this conference where researchers, academicians, professionals, technocrats can share and exchange their views in the context of Innovations in Applied Engineering, Computer and Communication Technologies.

I am buoyant that the participants will relish the moments of contemporary concepts presented in this conference to strengthen their work in every regard.

I convey my best wishes to all the participants and I strongly believe this conference will lay new milestones in the research of Computing and communication. I hope this conference will unfold new panorama in the sphere of new technologies.

REGISTRAR

MESSAGE

Dr.Y.Krishna Reddy
Conference Chair , ICRAAESCCT-2018 and Principal-BVRIT

It is indeed a great pleasure to write a few words on the occasion of the International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies (ICRAAESCCT-18) during 12th and 13th July, 2018, organized by BVRIT, Narsapur.

This conference has an important part to play in bringing those from academia and industry who are leading the development and in providing a platform for exchanging ideas and experiences in the research and development. In continuation of our policy to lead the flash light of research, novel concepts, ideas are spread through various such technical events. Further, the incredible response from various researchers and academicians in terms of the quality of the research paper show that innovation is here to stay and will be a standard for industries and educational institutes.

I congratulate the organizers on attracting a wide range of papers from experts in their fields, and wish all speakers and delegates a most informative and enjoyable conference.

Dr.Y.Krishna Reddy

MESSAGE

Dr. Ch. Venkateswarlu
Conference Chair, ICRAAESCCT-2018 and Director-R&D, B V Raju Institute of Technology, Narsapur

It is indeed a matter of great pride that our institute B.V.Raju Institute of Technology, Narsapur is organizing an International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies (ICRAAESCCT-18) during 12th and 13th July, 2018. The theme of the conference is very appropriate and timely. I hope that this conference will provide a common platform for academicians, researchers, industrialists and Post Graduate Students in Engineering to share ideas, explore new frontiers and expand horizon. It is also important for the conference to give correct orientation and new dimensions and show the right direction for research. I trust that the ICRAAESCCT-2018 will provided to be an effective instrument to present the vision of the conference and will be successful in achieving its objectives.

I congratulate the Convener, Organizing Secretaries, Co-conveners, organizers and other supporters for their excellent work in conducting such big conference in B.V. Raju Institute of Technology (BVRIT), Narsapur Campus and also I wish the conference a grand success.

Dr.Ch.Venkateswarlu

MESSAGE

Dr. A.Jagan
Convener, ICRAAESCCT-2018 and HoD-CSE, BVRIT, Narsapur

I feel very happy to share you that B.V.Raju Institute of Technology, Narsapur is organizing International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies (ICRAAESCCT-18) during 12th and 13th July, 2018.

I believe this Conference will definitely enhance the capability of understanding and presentation skills of the participants. This conference will act as a platform for the Research Scholars working in the same area to share their views and enhance their research work in new dimensions. Academicians and PG students can gain expertise in new areas by participating in the presentations of this conference.

I am confident that the deliberations and recommendations of this conference pave the way for adapting strategies to help and strengthen the streams of Applied Engineering, Computer and Communication Technologies.

I wish all the best to the Participants of the conference.

Dr.A.Jagan

MESSAGE

Prof.K.Srinivasa Reddy
Co-Convener, ICRAAESCCT-2018 and Dean-BVRIT

I am very delighted to share that, BVRIT, Narsapur is organizing International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies (ICRAAESCCT-18) during 12th and 13th July, 2018 and is also coming out with SCOPUS publications.

Innovation is a keyword to the launch of novel products in this world. It gives me a colossal pride in organizing this conference where researchers, academicians, professionals, technocrats can share and exchange their views in the context of Innovations in Applied Engineering Sciences, Computer and Communication Technologies.

I am buoyant that the participants will relish the moments of contemporary concepts presented in this conference to strengthen their work in every regard. Once again, all the very best.

Prof.K.Srinivasa Reddy

MESSAGE

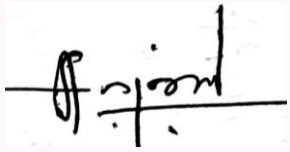
Dr. Amjan Shaik
Organizing Secretary, ICRAAESCCT-2018

This is a great initiative by BVRIT, Narsapur to organize an International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies (ICRAAESCCT-18) during 12th and 13th July, 2018. This confluence will provide a platform to academicians, scientists and engineers to share ideas and enable future collaborations.

The future technologies will have to follow multi-disciplinary approach. An integrated AESCCT (Applied Engineering Sciences, Computer and Communication Technologies) based research provides foundation to new products and technologies that have never been thought before. The conference includes tracks on all AESCCT fields. These types of events provide an opportunity for the participants to brainstorm new ideas and get feedback from the peers and experts. This conference will also open avenues for participants to identify new areas of research.

My best wishes to this event and also I am confident that the success of this conference will lead to similar events in coming years. In addition, participants from other institutions can replicate the same at their places. On this occasion, I would like to thank the Management and Principal for their continuous support and encouragement during this conference.

Once again, best for all.



Dr.Amjan Shaik

MESSAGE

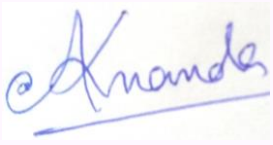
Dr. Ashok Kumar Nanda
Organizing Secretary, ICRAAESCCT-2018

I am pleased to welcome you to Narsapur (Medak Dist.), Telangana State, INDIA for International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies (ICRAAESCCT-18) to be held from 12 to 13 July 2018. This is an effort to bring together research scholar, developers, academicians, scientist, industry persons and users to present and discuss emerging trends, concepts, techniques, technology, and experiences in all sciences and engineering fields. This conference is jointly organized by B. V Raju Institute of Technology (BVRIT), Narsapur and Institute for Engineering Research and Publication (IFERP), Chennai, Tamilnadu, India in association with various professional societies SAEIndia, CSI, CRSI, IIChE, ISTE and IETE.

The ICRAAESCCT – 2018 covers a broad range of applied engineering sciences, computer and communication technologies such as Mathematics, Physics, Chemistry, Civil Engineering, Mechanical Engineering, Electrical Engineering, ECE, Chemical Engineering, BME and CSE/IT branches. The technical program will feature a set of technical sections disseminating the latest research and development results in current fields of computing and communication. During the conference, we will have a galaxy of renowned scientists and professors in Environmental Engineering, Mechanical Engineering, Chemical Engineering, computing and communication from reputed research/educational Institutions in India and abroad, who will deliver the keynote talks on latest developments.

I sincerely hope that the technologies presented at this conference will contribute to the fields of all applied engineering sciences as an enabling force for realizing the prosperity.

I thank the invited all speakers from academic institutes and industries, authors, our Sri Vishnu Educational Society (SVES) management, BVRIT teaching and non-teaching staff members, IFERP organization, all the ICRAAESCCT – 2018 committees with our students for their direct and indirect help for making ICRAAESCCT – 2018 a grand success.



Dr. Ashok Kumar Nanda

MESSAGE

Dr. M.Neelakantappa
Organizing Secretary, ICRAAESCCT-2018

I am happy to share that, BVRIT, Narsapur is organize an International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies (ICRAAESCCT-18) during 12th and 13th July, 2018.

This conference will certainly encourage and create research interests among the young brains of researchers, academicians, scientists and industrialists. Further it provides a platform for them in understanding the latest developments in the fields of Applied Engineering Sciences, Computer and Communication Technologies.

I convey my best wishes to all the participants and I strongly believe this conference will lay new milestones. I hope this conference will unfold new panorama in the sphere of new technologies and I am sure that BVRIT will organize much more events in the near future

Dr. M.Neelakantappa

ICRAAESCCT -18

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

KEYNOTE SPEAKER

حكومة رأس الخيمة
Government of Ras Al Khaimah

هيئة حماية البيئة والتنمية
Environment Protection & Development Authority

Recognition the Role of Science and Applied Technology in the Environment , succeeding through this International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies (ICRAAESCCT – 2018) being organized by BVRIT in association with IFERP-India. Conference themes captures the collaborative spirit of the discussion which will be both in scientific and educational event , deliver an opportunity to research scholars, delegates and students to interact and share their experience and knowledge in technology application. This conference brings an exceptional platform to the researchers and practitioners from both academia as well as industry to meet the latest advancements concerning to the fields of science and engineering. I take this occasion to articulate my gratitude to the organizing committee, broaden my greetings and good wishes for the success of the conference.

Dr. Saif M Al Ghais
General Manager

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Professor & Director

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St. Ann's College of Engineering & Technology

Nayunipalli (V), Vetapalem (M), Chirala-523187 – Prakasam District, A.P

BIOGRAPHY

Dr Ande Murali Varaprasad earned his Ph.D. in 1979 from IIT Bombay on Piezoelectric SONAR Technology followed by 3 years of Post Doctoral research experience at Microelectronics & Electrical Engineering Department of Trinity College Dublin, Ireland.

Dr Varaprasad is a reputed DRDO Scientist with 3 decades of experience in the field of Missile Technology at Research Centre Imarat / RCI ie located at Hyderabad. RCI is the brain child of Dr APJ Abdul Kalam and specialises on Avionics, Navigation systems, Control systems, Radar Systems for Agni, Prithvi, Dhanush and Air Defence/AD Missiles.

Dr. Varaprasad has been awarded Japan Matsumae International Foundation medal in 1987 and Materials Research Society of India MRSI medal in 1990.Other notable contributions of Dr Varaprasad include Piezoelectric SONAR systems for Indian Navy while working at NMRL, Bombay, during 1984-88 ie before moving over to RCI Hyderabad.

Dr varaprasad served DRDO for 28 years and retired from DRDO services in 2012. Presently, Dr Varaprasad is Professor of ECE Department at St Ann's College of Engineering & Technology, JNT University, Kakinada involved in teaching and research on Satellite Systems.

(Dr. Ande Murali Varaprasad)

Dr Sudhir Varadarajan

Dean (Design, Innovation and Incubation)
Indian Institute of Information Technology Design and Manufacturing(IIITDM),Kancheepuram.
Chennai – 600 127

BIOGRAPHY

Dr. Sudhir Varadarajan is presently the Dean for Design, Innovation and Incubation at IIITDM Kancheepuram, an institute of national importance fully funded by the MHRD. He has been associated with IIITDM Kancheepuram since 2015 and is involved in shaping the inter-disciplinary design & entrepreneurship curriculum and industry relations. He is also the founding director of MaDeIT Innovation Foundation, a design-driven Technology Business Incubator and a Section 8 company created in 2016. Dr Sudhir is also a member of the CII-Southern Region initiative on Manufacturing and Digital Excellence.

Dr Sudhir Varadarajan's approach to design and innovation is grounded in two decades of action-research experience in facilitating strategic change and innovation in the Indian-Global IT service networks. He is the author of a book entitled "Managing Nothing: A narrative inquiry into innovation and leadership in the IT industry" where he draws attention to the importance of everyday micro-interactions in dealing with paradoxical issues relating to innovation. He received his Ph.D. in Systems Engineering from IIT Madras, his M.Tech. in Industrial management from IIT Madras and his B.E. in Mechanical Engineering from Osmania University.

(Dr Sudhir Varadarajan)

Dr. Sujatha Srinivasan

Associate Professor,

Head, TTK Center for Rehabilitation Research and Device Development (R2D2)

MESSAGE

It is my pleasure to be part of the International conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies (ICRAAESCCT-18), to be held 12th – 13th July, 2018 at Narsapur (Medak), Greater Hyderabad, Telangana. ICRAAESCCT-18 is being organized by BVRIT in association with IFERP-India to provide an opportunity to research scholars, delegates and students to interact and share their experience and knowledge in technology application. Application of science and technology is essential to tackle the many problems that India faces and the involvement of academia is crucial towards this effort. BVRIT and SVES are institutions working actively towards solving pressing problems such as the development of assistive technology, which would benefit greatly from the theme of the conference. I hope that all the participants and speakers will take this opportunity for useful discussions and developing collaborations towards realizing outcomes that provide tangible benefits to our country. I wish the conference great success!

BIOGRAPHY

Dr. Sujatha Srinivasan founded the Rehabilitation Research and Device Development (R2D2) lab – now the TTK Center for R2D2 - at IIT Madras with the aim of developing affordable and functional assistive devices. Her research interests are in biomechanics and mechanisms with application to assistive devices. Her group has developed numerous assistive devices like Standing Wheelchair, Body Movement Wheelchair, Prosthetic Knee, Saathi Walker, Hybrid wheelchair, and Semi-Flexion Orthotic Knee, among others. She collaborates with hospitals, rehabilitation institutes and NGOs and has received funding from government bodies, industry and private foundations. Her students have won several awards for their assistive device designs at various National and International competitions. Prior to joining IIT Madras, she worked in the prosthetics industry in the US for about 8 years. She has more than 35 refereed journal and conference publications, 12 US and international patents granted and 11 Indian Patents pending.

(Dr. Sujatha Srinivasan)

Dr AK Saha

Associate Professor

Professional Engineer (Engineering Council of South Africa), SMSAIEE, SMSAIMC and IM Cigre

BIOGRAPHY

Dr AK Saha is currently an Associate Professor in the School of Engineering at the University of KwaZulu-Natal, Durban, South Africa. Before joining the University of KwaZulu-Natal, he worked at various positions as an engineer for CESC Ltd, the pioneer company of electricity generation and supply in India for almost 19 years. He is registered as a Professional Engineer with Engineering Council of South Africa, and Senior Member of The South African Institute of Electrical Engineers, Senior Member of The Society of Automation, Instrumentation, Measurement and Control, Individual Member of Cigre. He has been awarded the Best Lecturer in Electrical Engineering in the years 2013, 2014, 2016 and 2017 at the University of KwaZulu-Natal along with Research Excellence Award in 2015 and 2016. He has published 11 international peer reviewed journal papers together with 80 international peer reviewed conference papers. He has graduated a number of PhD and MSc in Engineering students. His research interest includes various areas of power systems, power electronics and electrical machines.

(Dr AK Saha)

Keynote Speech

Current Challenges in Electrical Power Systems

Abstract

This work presents evolution of old-fashioned power systems from its minor magnitude to the current state that integrate renewables, distributed energy resources, demand-side management, smart grid, micro grid and electric market deregulation and restructuring. There has been a greater magnitude of complexity and challenges resulted in as it evolved in terms of operational aspects, analysis of various important features such as management and control. This work also presents the challenges that are faced in the process of analysis due to huge amount data involved. Additionally, computational techniques used in power systems such as parallel processing, distributed computing and grid computing are discussed together with the state-of-the-art cloud computing and its applications for efficient and reliable management of the power systems along with an appropriate conclusion on the current scenario and future requirements.

ICRAAESCCT -18

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, July 12th – 13th, 2018

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ICRAAESCCT-18

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana

12th – 13th July, 2018

ABSTRACTS

ICRAAESCCT – 18

Organized by

B. V. Raju Institute of Technology
and
Institute For Engineering Research and Publication (IFERP)

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, 12th & 13th, July 2018

Life Cycle Environmental Assessment of an Office and Residential Building in Northern India

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Abstract:--

Structures required energy in their life cycle appropriate from its development to obliteration. Studies on the total energy use during the life cycle are desirable to identify phases of largest energy use and to develop strategies for its reduction. This project purposes to signify the environmental impacts of a residential and an educational building situated in the state of Uttar Pradesh, India. Life cycle assessment has been used to determine which life cycle phase (construction, operation, maintenance, and demolition) contributes the most to the total impacts. It has been observed that operational phase alone contributes more than 80% to GHG emissions and is highest energy consumer. Around 90% of total life cycle energy is consumed by residential building and 88% of total life cycle energy is consumed by an educational building in their expected service life of 50 years. This study shows that RCC framework and Red brick masonry are the highest contributors in GHG emissions for both the buildings. Energy consumed in the construction phase is the second highest that contributes significantly. The results obtained from this study has been compared with other studies done on similar basis, it is found that a building being situated in a region where climatic conditions vary greatly the operational energy accounts for more as compared to the buildings situated in places where climatic conditions are generally constant keeping this in mind there is a need for some alternative ways to design buildings for a sustainable future.

Keyword:
Ecology, Embodied energy, GHG emissions, LCA, Buildings

A study on the Operating Systems for Low end IOT Devices

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Abstract:--

The IOT interconnect billions of devices and they can be connected to internet. IOT run on high end devices which use traditional operating systems like Linux and low end devices with less computational power, memory etc. The large scale deployment of the system will need appropriate OS for the development, deployment and maintenance of the devices. In this paper we research on OS that could run on low end devices for IOT.

Keyterms:--

IOT operating systems, Low end devices, Contiki, RIOT, Free RTOS

Design of Intelligent Data Acquition System for Greenhouse Management Based on Iot

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Abstract:--

In recent years, IoT technology has become vision of the world and has given tremendous dependency in each and every field. This project proposes an automated system for crop growth monitoring and effective utilization of water resources in agriculture, using wireless sensor and RF433MHz protocol. In this project, three sensor nodes (soil moisture sensor, humidity sensor, ultrasound sensor) are deployed in monitoring the greenhouse environment. The soil moisture sensor is used to monitor the moisture present in the soil and when the earth is dry, and then the motor will be ON automatically for sprinkling of water. The ultrasonic sensor is used to monitor the plant growth and provides required amount of fertilizer through sprinkler motor. The insect repellent circuit is also deployed in the system for preventing the pests from affecting the crops. The signal from the sensor is coordinated manufacturers and more. The agriculture is one of the sector which is catching up with the various industries. With the concept of smart farming and by the microcontroller and transmitted to the intermediate node through IoT communication. The Development of wireless sensor network technology allows us to develop a system for real time environmental monitoring. In the current scenario wireless sensor networks participates a lot in precision agriculture[12]. In this way, the greenhouse environment is monitored; controlled and agricultural crop yield can be improved. The system reports data to the user remotely and allow them to effectively control through IoT. Finally, an apt care of data acquisition from the sensors, increasing overall productivity by means of algorithms have been observed and performed analysis in meticulous way, which have made the exertion of smart greenhouse different from any customary greenhouse that are available in market.

Extraction of Various Features from Satellite Image data using supervised and unsupervised classification Techniques and threat alerts generations for emergency management

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Abstract:--

Andrapradesh is the one of the most important state in India and most of the area covered with coastal line of 974 km (605 mi) with jurisdiction over nearly 15,000 km2 territorial water and this state is the one of the state is the eighth largest state in India covering an area of 162,970 km2(62,920 sq mi). The satellite image data is very large size that means Terabytes of information stored, it includes various patterns and also includes various features like mangrove, water bodies and mining lands, agriculture lands, aquaculture lands were delineated using various classification techniques. In this context, various land use and various features disable threats can be classified and also providing alert services for the emergency management for the future generations using various supervised and unsupervised classification algorithms with various threshold values, we can classifying the data with various visual interpretation techniques and also providing good accuracy and compare the current technique accuracy with previous classification technique accuracy .In the previous classification for satellite data using various supervised classification techniques got accuracies of 78.53% respectively. In the present classification method will proposing the combination of both supervised and unsupervised classification with the good accuracy of 95% with Kmeans and c4.5 with parametric and non parametric regression techniques with Land Use and Land Cover Methods(LULC) with good Data Processing technique with scalable Result

KeyWords:--

SatelliteImage,C4.5, LULC, VisualInterpretation, Regression

Simulated Annealing Based Nonlinear Model Predictive Control of Runaway Batch Chemical Reactor

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Abstract:--

Batch reactors are widely used in the production of specialty chemicals, electronic materials, polymers, coatings, composites and pharmaceuticals. For certain exothermic reactions, the transient operation of the reactor with respect to small changes in critical parameters like coolant temperature and initial composition of the reactants can lead runaway condition of the reactor. In order to avoid the hazards associated with the runaway situations, it is imperative to operate the reactor by means of an efficient controller. This work presents a nonlinear model predictive control (NMPC) strategy based on simulated annealing (SA) for the temperature control of batch reactor involving a highly exothermic runaway reaction. In this strategy, the nonlinear input-output process model is cascaded itself to generate future predictions for the process output (temperature) based on which the control sequence (heating and cooling action) is computed by SA optimizer. The efficacy of the proposed strategy is studied through simulation for the temperature control of a highly parametric sensitive exothermic reaction involving hydrolysis of acetic anhydride in the presence of sulfuric acid as catalyst and acetic acid as solvent carried out in batch reactor. The controller is found effective in averting the runaway behavior with the smooth and quick attainment of the desired operating condition. The results demonstrate the better performance of the SA based NMPC over the linear model predictive controller (LMPC).

Keywords:--

Exothermic batch reactor, Nonlinear model predictive control, Runaway reaction, Simulated annealing

Comparison of Neural Network Model Predictive Controllers for the Control of Unstable Biochemical Reactor

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Abstract:--

Different neural network model predictive control strategies (NMPCs) are presented for the control of an unstable continuous biochemical reactor. The control strategies are configured by combining a single output node neural network (NN) model representing the plant with three different controllers, namely, (i) a NN model based optimizing controller, (ii) a single output node NN controller and (iii) a multioutput node NN controller. The objective is to control the cell mass concentration in the bioreactor by manipulating the dilution rate, and the controller should track and maintain the desired operating condition. Control strategies are formulated by augmenting the identified NN plant model with each of the three controllers. The efficacy of the control strategies are assessed through simulation by applying to an unstable continuous biochemical reactor. The comparison of the results demonstrate the better performance of the control strategy that combine the NN predictive model with single output node NN controller followed by the strategy that augment the NN predictive model with the multioutput node NN controller.

Keywords:

Model predictive control, Nonlinear model identification, Neural network controller, Unstable biochemical reactor

YouTube: BigData Analytics using Hadoop and MapReduce

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Abstract:--

We live today in a digital world a tremendous amount of data is generated by each digital service we use. This vast amount of data generated is called Big Data. According to Wikipedia, Big Data is a word for large data sets or compositions that the traditional data monitoring application software is pitiful to compress [5]. Extensive data cannot be used to receive data, store data, analyse data, search, share, transfer, view, consult, and update and maintain the confidentiality of information. Google's streaming services, YouTube, are one of the best examples of services that produce a massive amount of data in a brief period. Data extraction of a significant amount of data is done using Hadoop and MapReduce to measure performance. Hadoop is a system that offers consistent memory. Storage is provided by HDFS (Hadoop Distributed File System) and MapReduce analysis. MapReduce is a programming model and a corresponding implementation for processing large data sets. This article presents the analysis of Big Data on YouTube using the Hadoop and MapReduce techniques.

Keywords—

Big Data definition, Data mining, YouTube data analysis, Hadoop, HDFS, MapReduce, unstructured dataset analysis.

Usage of Co-Event Pattern Mining with Optimal Fuzzy Rule-Based Classifier for Effective Web Page Retrieval

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Abstract:--

With the coming of the World Wide Web and the rise of web-based business applications and informal organizations, associations over the web create a lot of information on a daily basis. It is becoming more complex and critical task to retrieve exact information from web expected by its users. In the recent times, the Web has extended its noteworthiness to the point of transforming into the point of convergence of our propelled lives. The search engine as an apparatus to explore the web must get the coveted outcomes for any given query. The greater part of the search engines can't totally fulfill user's necessities and the outcomes are regularly inaccurate and irrelevant. knowledge of ontology and history is not much personalization in the existing techniques. To conquer these issues, data mining systems must be connected to the web and one advanced powerful concept is web-page recommendation which is becoming more powerful now a day. In this paper, the design of a fuzzy logic classifier algorithm is defined as a search problem in the solution space where every node represents a rule set, membership function, and the particular framework behavior. Therefore, the hybrid optimization algorithm is applied to search for an optimal location of this solution space which hopefully represents the near optimal rule set and membership function. In this article, we reviewed various techniques proposed by different researchers for web page personalization and proposed a novel approach for finding optimal solutions to search the relevant information.

Key words:

Web-page recommendation, Web Usage Mining, fuzzy classifier, Search engines.

IoT Based Ketoacidosis Detection

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Abstract:--

Ketoacidosis also known as DKA (diabetic ketoacidosis) is a serious condition which occurs in patients who suffers from diabetes. It affects people above 25years of age. It occurs due to insufficiency of insulin. Detection of ketone is done by the nitro prusside-based urinary dipstick ketone test and plasmlserum ketone analyses. Non -invasive detection of ketoacidosis is done by breath analyzer. In this paper we are using breath acetone as a biomarker for ketoacidosis. The resultant ketoacidosis values are transmitted through ESP8266. The ESP8266 sends the sensor values to think speak (private cloud). The new channel is created in Think Speak private clouding and Channel API keys are generated to read and write the sensor data from ESP8266. Through this simple IoT device the physician is always connected to the patient and can be able to monitor thet ketoacidosis condition of the subject

Keywords:

ketoacidosis, think speak, IoT, API keys

Performance Analysis of Ber and Channel Capacity of MIMO-OSTBC Using Adaptive Modulation Techniques

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Abstract:--

As per today's scenario the information transmission is needed with highly effective communication in terms of greater speeds of data transmission, more accuracy and high reliability. Multiple-Input Multiple-Output(MIMO) Communication System is more suitable for robust and secure communication with high speed data transmission. Here in this paper how MIMO is more suitable than SISO, SIMO(Single-Input Multiple-output) and MISO(Multiple-input single-output) is shown in terms of better Channel Capacity and less BER(Bit Error Rate).OSTBC Encoder and Decoders are used for secure communication is estimated and analyzed for BPSK,QPSK with SISO and MIMO(3 outputs and two inputs-3x2 fading channel) Communication System for ½ and ¾ coding rates with AWGN Channel as transmission. Adaptive Quadrature Modulation technique(QAM) is used with M-ary values of 16,24 and 256 for ½ and ¾ coding rates for both SISO and MIMO(3x2 Fading Channel) Communication System. As per the Simulation results BER and Channel capacity performances for MIMO are better compared with SISO with Adaptive Modulation Techniques.

Key words-

component; SISO, AMUD, MIMO, BER, Channel Capacity, MIMO-QAM.

A Study of South-West Monsoon over Indian Sub-Continent using Satellite derived precipitation estimates

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Abstract:--

The present study evaluates the performance of satellite estimation algorithms (SRE) over the Indian Sub-Continent during South-west monsoon for the years 2015 and 2016. From the investigation , it is observed that no satellite derived precipitation product have provide better estimation of rainfall when compared with actual gridded rainfall. But good correlation coefficients (CC) exist between the satellite derived precipitation product and actual rainfall. In this paper, multisatellite high-resolution precipitation products ,namely Climate Prediction Center Morphing (CMORPH) version 1.0, TRMM Multisatellite Precipitation Analysis (TMPA)-3B42 V7 product are compared with India Meteorological Department (IMD) gridded rain guage data.From the results, it is observed that south west monsoon during 2016 produces more rainfall compared to monsoon season of 2015. Five different regions with different climate zones are selected shows the variability of climate over Indian Sub-Continent. For the selected regions, monthly average rainfall(in mm) ,Correlation Coefficient(CC) and Root Mean Square Error (RMSE) are evaluated for satellite derived precipitation products and IMD gridded rain guage data

Keywords:--

precipitation, corelation coefficient, southwest monsoon.

A Novel approach for Lung segmentation and Lung nodule detection

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Abstract:--

Lung Cancer is leading cause of death when compared to Colon, breast and prostate cancers combined, which approximate about 14%. About 2,22,500 new cases of Lung Cancer registered, and about 1,55,870 deaths occurred due to Lung Cancer in the US according to American Cancer Society estimate in 2017. It is very important to diagnose cancerous cells in early stages to reduce the mortality rate. The work proposes an automatic lung segmentation and lung nodule detection through High-Resolution Computed Tomography (HRCT) image for early detection of Lung Cancer. Extracting lung regions from the HRCT images by grey-level thresholding and smoothing the lung boundaries along the mediastinum is the first step. A flood fill algorithm is implemented to identify the surrounding region effectively. Calculating the mean and standard deviation of intensity values between the trachea and the lungs, parts of the trachea are removed. The segmented lung images are further enhanced to restore the intensity values of the pixels on the bronchi and the lung boundary. The proposed technique is computationally inexpensive and accurate in detecting the lung boundary. Numerical simulations are carried out in MATLAB which indicated an overall accuracy of lung segmentation is 98%.

Keywords:--

Flood fill algorithm, Lung Nodule detection, Lung segmentation.

Comparative Analysis of Recommender Systems and Its Enhancements

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Abstract:--

Recommenders are being used in many applications and circumstances to make ease of social life by generating categorized and personalized recommendations to the individuals. These categories may be chosen by the users to get recommendations for movies, songs, products and various services etc. One of the challenges of a recommender system is to generate recommendations in real time to many people by analyzing huge amount of data. In this paper, authors considered traditional recommender and hybrid recommender techniques to generate recommendations. Traditional recommender systems include similarity measure, matrix factorization, co-clustering and slope-one approach, where as the second type of recommender system consists of the role of hybridization techniques and contextual parameters with traditional recommenders. Here, authors worked on movie lens dataset with above mentioned recommender systems and observed that SVD approach has less RMSE and MAE values comparing with other models.

Keywords:--

Recommender system, information retrieval, similarity measure, contextual parameters

A Comprehensive Review of Energy Efficiency in Cloud Computing Environment

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Abstract:--

High energy consumption in the cloud has become a huge problem in the data center. Energy represents direct significant cost in the operation of the data center. In Information Technology, infrastructure, Internet applications are in more demand. Cloud computing provides IT resources in the form of infrastructure, platform and application by providing services through the Internet Technology. This leads to more energy being consumed as cloud is used to provide IT services from the IT resources to the IT industry and to the Organizations. To analyze power consumed in the data center, applications are deployed in cloud and tested using different workload conditions. Virtualization depicts more energy utilization in the cloud data center. In this paper discussed about the comparison of cloud and cloud computing, cloud type providers, component performance through secured shell. Identified the various levels of energy consumptions in the cloud. the different techniques which is used to reduce the power consumption in the server and workload consolidation using various parameters are considered.

Keyword: -

Energy Efficiency, KVM, Power, SSH.

Performance Index - A metric to analyze and evaluate the performance of Hypercube Interconnection Networks

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Abstract:--

A Multiprocessor is a computing machine which has at least two central processors, to process the tasks simultaneously. An Interconnection network to link multi-computer processors greatly influences the performance of entire system. The various network scales to evaluate interconnection networks are: degree, speed, node coverage, reliability, scalability, diameter, connectivity, throughput, packet loss, and network cost etc. Interconnection Network like a Hypercube can be considered as an graph with undirected edges, where a vertex indicates a processor and an undirected edge denotes a communication medium among the processors. Some of the variants of Hypercube Interconnection Networks are Hypercube Network, Folded Hypercube Network, Multiple Reduced Hypercube, Multiply Twisted Cube, Recursive Circulant, Exchanged Crossed Cube Network, Half Hypercube Network etc. The vital purpose of this paper is to investigate different variants of hypercube interconnection networks and to analyze their properties to summarize the differences in their performance. It is also discussed how to analyze and evaluate the performance of Hypercube Networks and identify the changes in Performance Index based on the variations in their properties.

Keywords –

Multiprocessor, Interconnection Network, Hypercube, Performance Index.

Area-Power Efficient Radix-8 Booth Multiplier for Lifting-Scheme DWT

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Abstract:--

The multiplier operation is present in many areas of digital systems, most notably in signal and image processing applications. In this short, the existing constant fixed width multiplier is investigated and from this investigation some redundant operations are observed. In this paper area and power efficient novel constant fixed width Radix-8 Booth multiplier is proposed which is eliminated the redundant operations. The modified multiplier is area and power efficient than the exiting one. The m least significant bits of 2m-bit output of full width multiplier are truncated, whereas this truncation increases power and area. The proposed radix-8 modified booth multiplier has considered the 8-bit precision from eight-bit position to nineteen-bit position and all other bits are truncated. The modified multiplier offers a saving of 14.17% Area-delay product (ADP) and power of 17.47% over the existing multiplier architecture. The lifting discrete wavelet transform (DWT) has been implemented using Radix-8 modified booth multiplier. The cadence Synthesis results shows the less power and ADP than existing architecture. The Field Programmable Gate Array (FPGA) results shows less Look Up Tables (LUT) than existing architecture.

Key words :

Booth multiplier, Generic constant multiplier, Lifting scheme, Discrete wavelet transforms (DWT), VLSI architecture.

Smart agriculture with big data

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Abstract:--

This paper presents the importance of smart agriculture, which is the revolution in traditional farming using new technologies such as big data, Hadoop, R programming and cloud computing. This paper covers the major areas of agriculture from seed to the marketing level. This schema contains mainly three layers. In the First Layer that is data collection layer, collecting data using sensors related to weather and environmental changes, identification of soil types, crop identification ,yield tracking, water availability in the soil . Not only sensor data, Here we will take Historical data i.e. past data, by this prediction will be easy. All this data will be stored in HDFS i.e. Hadoop distributed file system .In the second layer that is Analysis layer, the collected information is analysed using data mining algorithms. The most important part in data analysis is data acquisition; we extract knowledge from sensor data in real time and historical data. In the third layer i.e. data prediction layer predictions obtained from the analysis based on that we will get the answers for the questions what to plant, when to plant and where to plant for this purpose we use data mining algorithms. The prediction discovers relationship between independent variables and relationship between dependent and independent variables. Many classification and regression algorithms are available for data prediction. Some of them are Decision Trees, Artificial neural networks, Support Vector Machine, Bayesian classification and Regression and K-means clustering. Among these we are using Decision Trees and K means clustering for prediction.

Keywords-

Big data, smart agriculture, hadoop, R, cloud computing, data acquisition, classification data analytics, weather forecast

Network Selection in Heterogeneous Wireless Networks: Taxonomy

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Abstract:--

In heterogeneous wireless networks, an important task for mobile terminals is to select the best network for various radio access communications at any time anywhere, usually called network selection. As of late, this point has been broadly contemplated by utilizing different numerical algorithms. The utilized hypothesis chooses the goal of advancement, unpredictability and execution, so it is an absolute necessity to comprehend the potential numerical algorithms and pick the suitable one for getting the best outcome. In this manner, this paper methodically contemplates the most vital numerical hypothesis used for displaying the best network selection problem. To find out the best mobile terminal & core network flow was explained. For achieving best network using the priority best network selection algorithm procedure is proposed.

Keyword:

Heterogeneous Wireless Networks, Mobile Terminal-Driven, Core Network-Driven, RAT, PBNSA.

A New Student Model for an Intelligent Tutoring System Using Analytical Hierarchy Process

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U.Chandrasekhar , Associate Professor, CSE Department, BVRIT-Hyderabad, India

Abstract:--

Understanding student's thinking ability, strengths, weaknesses, learning behavior and their learning capacity are essential considerations in the virtual lea¬¬¬¬¬rning environment (VLE). The prime objective of this research study is to design a 'Student Model' based on individual's 'bio-psychological potential'. Defining a student model is crucial for an Intelligent Tutoring System (ITS) to adapt to the needs and knowledge of an individual student. Psychometric Assessments were used as diagnostic tools to understand student's cognitive and personality traits. These assessments have to fulfill three major criteria, which are standardization, reliability and Validity. The first phase of this research study focuses on the primary data compilation using psychometric assessments, to categorize the cognitive traits and personality traits of the individual. A sample size of 1145 was gathered from 22 engineering colleges of South Indian states. Primary data are collected by administering suitable psychometric inventories such as Benziger Thinking Style Assessment (BTSA) for Brain Dominance Analysis, Kolb's Learning Style Inventory (LSI) for the learning style identification, Howard Gardner's MI inventory for multiple intelligence identification and Paul Costa R. Robert McCrae's Big Five personality identification. This study consists of three major components namely, Personalized Profiling System (PPS), Mean-Difference clustering algorithm and the Analytical Hierarchy Process (AHP) algorithm. The study evaluates the performance of PPS through a feedback mechanism. Due to subjective nature of this process, the achieved accuracy is about 70%. The best decision is done based on the priorities provided by the AHP decision maker.

Keywords:--

Analytical Hierarchy Process (AHP), Intelligent Tutoring System, Thinking Style, Learning Style, Multiple Intelligence, Psychometric Assessment.

Obstacle Detection of Vehicles under Fog

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Abstract:--

Obstacle detection of vehicles is important for the driver safety. If there is any obstacle in the road it may cause accidents as well as it affects the traffic flow of vehicles. To prevent this kind of accidents, it is more important to study about the detection of obstacles under real time. But it is difficult to analyze due to the factors related to shadow, sudden changes in the environment and the obstacle to the vehicles. Fog is the one of the important environment change that causes the vehicles not to identify the object in-front. This paper aims to design a new approach for obstacle detection which is mainly based on moving objects. This approach is more useful for identifying the different and minute obstacle in which the fog covers the object, so that the driver assist is provided and acquires more safety. This paper mainly focuses on the classification of fog (dense fog, moderate fog and high fog), how much distance the driver can see the nearby vehicle or obstacle and under each types of fog how much could be the maximum distance of visibility. The vehicle to vehicle visibility distance measurement and obstacle to vehicle distance measurement can be calculated using visual aids.

Keywords:

OBSTACLE, ADAS, ITS, GLCM, SVM

Mathematical Model of Radial Flow Reactor for Naphtha Hydrodesulphurization

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Abstract:--

In the present study, a mathematical model is developed for centrifugal radial flow reactor for hydro desulphurization of naphtha with kinetics available in the literature. Also, an investigation into the effect of various process parameters like temperature, pressure, LHSV and H2/Naphtha ratio on the design of centrifugal radial flow reactor. Effect of the above process parameters on mal distribution has been evaluated using the mathematical model.

Keywords:

Hydro Treatment, Desulfurization, Thiophene, Naphtha, Modeling.

Mathematical study of an SEIR epidemic model

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Abstract:--

A model involving SEIR epidemic type was the subject of investigation and detailed analysis. Time delay as a parameter was factored in along with saturated incidence rate when examining the model and the assumption was that growth rate of susceptibles is a function of a logistic equation. The parameter determining the threshold R 0 was included to establish if the disease withered away or stayed on in the population as an endemic condition. Based on certain conditions one could make out the consequences of the prevalence of the disease. If the system was viewed as locally asymptomatically stable, meaning that the disease will fade away even if present to start with. If then the condition was endemic, implying the permanence of the disease. Employing time delay as a parameter for bifurcation, the local stability of the equilibrium assumed to be endemic was mathematically explored, while also arriving at essential conditions for Hopf bifurcation. To determine if the results were experimentally sound, numerical simulations were also carried out and the validity of the assumptions established.

Keywords:

SEIR model; saturated incidence rate; time delay; Hopf bifurcation

Feature Optimization using Teaching Learning Based Optimization for Breast Disease Diagnosis

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Abstract:--

Disease diagnosis is a significant challenge in the field of medical science because most of the medical datasets contain irrelevant and redundant attributes which are not mandatory to obtain an accurate estimate of the disease diagnosis. In this work, we have used Teaching Learning Based Optimization (TLBO) algorithm for feature Optimization in automatic breast disease diagnosis. We have used naive Bayes classifier for finding the fitness of individual and Multilayer Perceptron (MLP), J48, random forest, logistic regression algorithms for estimating the effectiveness of the proposed system. The results confirmed that the expected scheme produced higher accuracy on Wisconsin diagnosis breast cancer (WDBC) data set to classify the malignant and benign tumors. In short, the proposed TLBO variant presents an efficient technique to optimize the features for sustaining data-based decision making systems.

Keywords:

Feature Optimization, Teaching Learning based Optimization, Breast Cancer.

Dual Tree Complex Wavelet Transform based Image Denoising for KALPANA Satellite Images

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Abstract:--

This paper presents a new algorithm to reduce the noise from Kalpana Satellite Images using Dual Tree Complex Wavelet Transform technique. Satellite Images are not simple photographs; they are pictorial representation of measured data. Interpretation of noisy raw data leads to wrong estimation of geophysical parameters such as precipitation, cloud information etc., hence there is a need to improve the raw data by reducing the noise for better analysis. The satellite images are normally affected by various noises. This paper mainly concentrates on reducing the Gaussian noise, Poisson noise and Salt & Pepper noise. Finally the performance of the DTCWT wavelet measures in terms of Peak Signal to Noise Ratio and Structural Similarity Index for both noisy & denoised Kalpana images.

Keywords:--

DTCWT, Noise Reduction, Gaussian Noise, Poisson Noise, Salt & Pepper Noise, PSNR.

Influence of tool rotational speed, feed rate and tool material on mechanical properties of friction stir welded AA6061 and AA6082 Aluminium alloy.

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Abstract:--

The major objective of this work is to investigate the effect of tool rotational speed, feed rate and tool material on the tensile properties of the friction stir welded AA6061 and AA6082 aluminium alloys plates of thickness 4mm. Tensile test was done for the joints prepared at different trials, fracture analysis was done by the help of scanning electron microscope(SEM). From the analysis it was found that there is no effect of tool material on the strength of welded joint. Joint prepared at the tool rotational speed 1400rpm and feed rate 31.5mm/min shows the highest joint efficiency. SEM image of the fractured surface clearly shows that fracture occurred was of the type ductile.

Keywords:--

Friction stir welding (FSW), Tensile strength, SEM, AA6061, AA6082, EN39B, HSS.

Performance of Random PWM Techniques for induction motor Drive

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Abstract:--

Conventional pulse width modulation (PWM) techniques for voltage source inverter (VSI) generate high amount of harmonics at and around harmonics of switching frequencies. These causes acoustic noise and electron magnetic interference to the nearby electronic systems. In this paper different random PWM techniques were proposed for two-level VSI. The implementations of these PWM techniques were presented based on carrier comparison approach and digital space vector approach. Moreover correlations between these two methods were also presented.

Keywords:

Constant switching frequency; Pulse Width Modulation (PWM); Space vector approach; Random PWM; Variable Switching frequency.

On the Viability of Adaptive Paris Metro Pricing in Agent Based Model for Federated Clouds

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Abstract:--

Federated Clouds provides efficient resource pricing using static and dynamic methods. Most of these pricing models are analyzed based on cloud service provider perspective to maximize their revenue. Need of pricing model to prioritize the users request for allocating resources according to their demands and provide maximum utility within optimal price. This paper analyzes the viability of Adaptive Paris metro pricing (APMP) in agent based model for federated clouds to achieve equilibrium between provider and users of cloud in gaining maximum revenue with optimal price. Further APMP achieving strategy proof is analyzed with simulation support for federated clouds.

Keywords:

Federated Clouds, Cloud resource pricing, Adaptive Paris Metro Pricing, Agent based model,

A Data Leakage Identification System Based On Truncated Skew Symetric Gaussian Mixture Model

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Abstract:--

Data transfer from source to destination has become more essential as the organizations working under a frame need to exchange the data for processing the information and solving the necessary tasks. This concept of data transfer has become a most tricky task with the advent of hackers, intruders and other guilt agents who try to steal the sensitive data for unethical means. The present article addresses the issue of identifying such data leakages and also provides a platform for data preventing from such issues.

Key words:

Truncated skew Gaussian Mixture, Hackers, Intruders, Guilt agent, Data Leakage.

Performance Analysis of Facts Devices for Reduction of Power Quality Issues in Dfig Based Wecs Integrated To Grid

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Abstract:--

Integration of a wind farm with electric grid is an issue that has gained interest due to poor power quality and unmatched power and frequency of grid. Maintenance of power quality has become an important factor in modern power systems. The usage of non-linear loads results in various power quality events which over a period of time would reduce life and deteriorate the performance of end user equipment. FACTS devices are available that use power electronic components provide efficient solutions for improving power quality in Distribution systems. This paper discusses performance of three FACTS devices SSSC, DSTATCOM and UPQC for mitigating voltage sags, swells and harmonics injected into a DFIG based WECS. The model is developed on MATLAB/ SIMULINK platform and results are presented.

Key words:

DFIG (Double Fed Induction Generator), Grid, Power Quality, Voltage sag, Voltage Swell, reactive power compensation, Wind Turbine, SSSC (Static Synchronous Series Compensator), DSTATCOM (Distribution Static Synchronous Compensator), UPQC (Unified Power Quality Conditioner).

Convective Cloud Detection with Fuzzy Logic Based System Using Satellite Data

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Abstract:--

The cloud classification and analysis of the distinctive convective clouds from the satellite data have been mobilized using many traditional classification methods in atmospheric models for foreseen the natural hazards. In this paper one promising method makes use of fuzzy logic to perceive the convective clouds with strong triangular and trapezoidal membership functions. Convective clouds extracted from satellite images are compared with INSAT Multispectral Rainfall Algorithm (IMSRA).The development of the fuzzy logic rule based expert system with Kalpana satellite spectral data consist of advanced very high resolution (AVHRR) channels, which include Water vapour, infrared windows. In this proposed method shows that the fuzzy logic method offers greater correct results than conventional algorithms to identify the convective clouds.

Keywords:

AVHRR Convective clouds, Fuzzy logic, Spectral data.

Economic & Technical Analysis of On & Off Grid SRTPV System for Domestic Applications

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Abstract:--

Day by Day the electrical demand is increasing drastically, but the conventional energy sources are depleting with the increase of demand because the 70% electrical power generation depends on Thermal generation, to overcome the gap between demand , generation and to control the pollution there is a need of alternative energy sources. Here the Renewable energy sources are treated as the Solution for the depletion of conventional energy sources. Among all the Renewable energy sources Solar Energy has its own importance and advantages such as it is a clean, ecofriendly, free of cost with abundant availability and only 10% of solar energy is utilized for converting Electrical Power. In this paper we discussed the technical as well as Economical analysis and how the solar energy from the nature can be utilized effectively for off grid and on grid according to availability of demand as well as 3KW Solar systems and we are going to suggest the type of system which is very efficient and economical in nature for domestic applications with Solar Roof Top Photovoltaic (SRTPV) system comparative to conventional energy system.

Key words:--

SRTPV System, Off-Grid, On-Grid, Cost benefit analysis, payback system, environmental impact.

Improving Just – In –Time Manufacturing in Voltage Regulator Assembly Line using RFID System

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Abstract:--

In an increasingly digital world, manufacturing enterprises are coping with a complex, dynamic and competitive environment due to globalization and a rapid development of information and communication technologies. Just in time (JIT) manufacturing is one of the leading approaches used to enhance manufacturers' competitiveness through lead time, SAP conformation and inventory reduction. This paper deals with the material management strategy that uses production Kanban to signal the need for replenishment of selected product from prefers suppliers to site and also to optimize the flow of work through the RFID system to increase the business value delivery and it is also an evolutionary change approach for an organization to be adequate for its purpose in service delivery.

Keywords :--

Just – In – Time, RFID, Lead time, Inventory.

Cascaded Neural PID Based Control Scheme in Pumped Storage Power Plant for Energy Grid Disturbances

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Abstract:--

A novel scheme, Cascaded Neural Proportional Integral Derivative (CNPID) is proposed for pumped storage power plant for attaining effective energy storage and management during energy grid disturbances. The PLC (Programmable Logic Controller) is utilized for automation and HMI (Human Machine Interface) for user friendly. Considering drawbacks in existing control schemes due to time lag, nonlinear response, this scheme CNPID is designed. Prototype is mimicked by considering pumped storage power plant parameters flow & level and simulation analysis were done based on CNPID scheme. In the prototype, one upper reservoir with five stages of level and one lower reservoir with two stages of level are miniaturized. This experimental set up is interfaced with PLC-HMI for performing flow and level control. The obtained CNPID performances are analysed with the conventional method based on actual data collected from pumped storage hydroelectric plant. Finally, the improvements based on CNPID are enhanced.

Keywords –

CNPID, pumped storage power plant, PLC - HMI.

Identification of AD/MCI Using sMRI Cortical Thickness Features

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Abstract:--

The Mild Cognitive Impairment (MCI) is an early symptom of Alzheimer's disease (AD). The Structural Magnetic Resonance (sMRI) image of the patient's brain is classified according to the vigorousness of the disease and is labelled to be either in MCI or in AD condition. The cortical thickness feature which is highly significant for the AD disease diagnosis is utilized in this work. Instead of the complete set of image features, cortical thickness feature set of an image is sufficient for diagnosing diseases in the least time. Principal Component Analysis (PCA) algorithm is modified for dimensionality reduction and feature selection. Also, the modified PCA helps in normalizes the feature vector and its associated standard deviations, thus reducing the effect of eigenvectors corresponding to the large eigenvalues. Four different classification algorithms are deployed over the low dimensional data and their respective performances are being analyzed. Also, the proposed modified PCA and classification technique is evaluated for better accuracy, sensitivity and specificity with real-world ADNI datasets (Alzheimer's diseases Neuroimaging Initiative) and has proven to bestow better classification capabilities than the other robust models.

Keywords: --

Magnetic Resonance Imaging (MRI), Alzheimer's Disease, pattern recognition, pre-processing, principal component analysis, classification

Low Voltage High Speed 8T SRAM Cell for Ultra Low Power Applications

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Abstract:--

The usage of portable devices increasing rapidly in the modern life has led us to focus our attention to increase the performance of the SRAM circuits, especially for low power applications. Basically in six-Transistor (6T) SRAM cell either read or write operation can be performed at a time whereas, in 7T SRAM cell using single ended write operation and single ended read operation both write and read operations will be accomplished simultaneously at a time respectively. When it comes to operate in sub threshold region, single ended read operation will be degraded severely and single ended write operation will be severely degraded in terms of write-ability at lower voltages. To encounter these complications, an eight transistor SRAM cell is proposed. It performs single ended read operation and single ended write operation together even at sub threshold region down to 0.1V with improved read-ability using read assist and improved dynamic write-ability which helps in reducing the consumption of power by attaining a lower data retention voltage point. To reduce the total power consumption in the circuits, two extra access transistors are used in 8T SRAM cell which also helps in reducing the overall delay.

Keywords:--

SRAM, read-ability, write-ability, low power, read assist, pass transistors and delay.

Introduction to Fuzzy soft set based control systems

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Abstract:--

This paper carries out fundamental work of defining fuzzy soft set based control system. The existing fuzzy control systems have been transformed into fuzzy soft set domain touching upon various approaches such as model-free, model-based as well as adaptive control approach. Modelling of fuzzy soft set control system using Mamdani approach is discussed taking specific example of an Air conditioning system.

Keywords:--

Fuzzy Soft sets, Fuzzy Control systems, Fuzzy soft set controller, Mamdani Approach, Sugeno Approach

Analyzing Indian Healthcare Data with Big Data

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Abstract:--

Big Data is the enormous amounts of data, being generated at present times. Organizations are using this Big Data to analyze and predict the future to make profits and gain competitive edge in the market. Big Data analytics has been adopted into almost every field, retail, banking, governance and healthcare. Big Data can be used for analyzing healthcare data for better planning and better decision making which lead to improved healthcare standards. In this paper, Indian health data from 1950 to 2015 are analyzed using various queries. This healthcare generates the considerable amount of heterogeneous data. But without the right methods for data analysis, these data have become useless. The Big Data analysis with Hadoop plays an active role in performing significant real-time analyzes of the enormous amount of data and able to predict emergency situations before this happens.

Keywords:-

Big Data, Healthcare, Hadoop, Pig Latin, HDFS, MapReduce.

Principal Component Analysis of Concrete Mix by Ranking Method

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P.Sravana, Professor, JNTUH, Kukatpally, Hyderabad.

Abstract:--

Cement concrete mixture design for pavement was studied through a series of laboratory experiments based on an actual project program. The main purpose of this research is to investigate the minimum cement content required with an appropriate water-cement ratio (w/c) to meet given workability, strength, and durability requirements in a concrete pavement; and to reduce costs. An experimental program was conducted to test 9 concrete mixtures, designed according to Taguchi's orthogonal selection with w/c of 0.36, 0.45 and 0.55 and cured by different methods such as Air Curing (AC), Water Curing (WC) and Plastic Bag Curing (PBC) separately. Compressive strength (CS) of 150mm cubes are found for 3,7 and14 days. Cube compressive strength, water to cement ratio (w/c), Cement, Coarse Aggregate, Fine Aggregate were the parameters to be used for optimization by varying water-cement ratios, cement quantities, Coarse Aggregate (CA) quantities and Fine Aggregates (FA) quantities. The data sets of mix designs were analyzed by Principal Component Analysis (PCA) to draw most influencing variables on the performance of concrete. From the analysis, it is found that w/c is the most influencing ingredient in case of AC and PBC and CA for WC on Compressive Strength (f_{ck}) of concrete.

Key Words:

Cement Concrete, water-cement ratio, Compressive Strength and Principal Component Analysis

Mechanical Properties of Triple Blended Concrete using fly Ash and GGBS as Cement Replacement Material for Rigid Pavements

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C. Krishna Raju, Professor, BVRIT, Narsapur, Telangana State, India.

Abstract:--

In the present investigations, Conventional Triple blended concrete (TBC)of 8 mixes were designed for M40 grade using w/b as 0.4 and tested for Compressive Strength and Flexural Strength. In these concrete mixes, Cement was replaced with 15% of Fly ash (FA)and with 10%, 20%, 30%, 40%, 50%, 60%, 70% and 80% of Ground Granulated Blast Furnace Slag (GGBS), tested for 7 days and 28 days strength and compared with the strength of Conventional Concrete (CC). From the results, it was observed that, the strength of TBC is maintaining appropriate strength up to 50% GGBS replacement level and drastic decrease in strengths above 50% GGBS replacement level. The results are analyzed and the relations also developed between Compressive Strength and Flexural Strength of TBC for 7 days and 28 days.

Keywords:--

Triple blended concrete, Conventional Concrete, Fly Ash, Ground Granulated Blast Furnace Slag, Compressive Strength and Flexural Strength.

Strength Properties of High Volumes of Slag Concrete for Rigid Pavements

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T.Vijaya Gowri, Professor, Civil Engineering Department, Bapatla Engineering College, Bapatla, AP, India.

Abstract:--

Concrete is one of the most versatile materials used in the construction industry in which cement is used as main ingredient playing a dominant role in gaining of strength. Despite of it, the production of cement leads to depreciation of natural materials. Regarding this aspect, in this study an attempt has been made to use GGBS (Ground Granulated Blast Furnace Slag) as a substitute material to cement with a percentage replacement of 50% .Specimens with various geometric shapes like cubes, cylinders and prisms were casted and tested with(High Volume Slag Concrete) and without replacements of GGBS, varying water-cement ratios of 0.55,0.45,0.36 & 0.27 for mechanical properties, Young's Modulus of elasticity, impact strength with and without the addition of steel fibers and also abrasion resistance after 28 days and 90 days of curing.

Keywords:--

GGBS, mechanical properties, Young's modulus, impact strength, abrasion resistance

A Multi Order key Sharing and Dual Channel Based Secure Routing for WSN

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Abstract:--

Growth in the remote monitoring and automation in maintenance for all fields of industrialization in motivating the sensor researches more and more. The major challenge faced by the practitioners and the researchers are to keep up with the advancements of the data accumulation and analytic demands as the resource capabilities of sensors, especially the wirelesssensors, are limited in terms of battery or energy, processing capacity and security. A number of wireless sensor networks collect mission critical and sensitive data for the processing. Also, the feedback systems through the same sensor networks are also important and sensitive. Due to the fragile structure of the network, often it is vulnerable to the attacks. A number of studies have demonstrated the types of the attacks and their effect on the network. The identified attacks are highly versatile in nature, thus leaving a less scope for a single solution to prevent the attacks. Numerous research attempts are presented till date to find the most effective method of securing the wireless sensor networks. Nevertheless, all these solutions are criticised for neglecting one or the other possible threats. It is been observed that, the majority of the attacks happen during the data transmission time and the new node registration time. The transmissions of the data in the network are managed by the routing protocols and the registrations of the new node into the network are managed by node registration algorithms or strategies. Thus, these two are the highly vulnerable situations for any wireless sensor networks life cycle. Hence, this work addresses two unique solutions for these two situations, which is again mutually exclusive. The major outcome of this work is to secure the routing using randomize channels and node registration process using multi order key in order to avoid majority of the attacks on the network. Also, during the transmission or the routing of the data through the network channels, it is often recommended that the data must be encrypted. Nonetheless, the encryption and decryption of the data is a significant load on the limited processing capabilities of the sensor nodes. Thus this highly recommended process is habitually ignored, compromising the threats. Yet another outcome from this work, is to separate the header and the content part of the data packets to reduce the network loads.

Keywords:--

Secure Routing, Dual Channel, Multi-Order Key, Random Function, Trust Management.

Design and Analysis of Heterojunction Tunneling Transistor (HETT) Based Standard 6T SRAM Cell

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Abstract:--

Subthreshold Swing (SS) of MOSFETs which determines the low voltage operation of portable mobile devices cannot reduce below 60mV/dec that restricts MOSFETs for ultra-low power applications. This work presents design and implementation of high ON current, improved Miller capacitance and reduced Subthreshold Swing heterojunction tunneling transistors (HETTs) for portable electronic systems. The performance of HETT with MOSFET has been compared. In this work, the overlapping of gate/oxide on to source can increase the band to band tunneling (BTBT) and improves the ON current of the transistor. Miller capacitance effect can be reduced by the use of low band offset materials and low energy states of materials like Ge or SiGe. This, in turn, results in better performance characteristics for the transistor.

The Proposed design and implementation of HETT include both N-type HETT (NHETT) and P-type HETT (PHETT) fabrications and the performance characteristics analysis of both NHETT and PHETT are provided. The advantages and limitations of both NHETT and PHETT for beyond CMOS technologies, in addition to the basic and structural differences between HETTs and conventional MOSFETs to facilitate the use of HETT in place of MOSFET have been elaborated in detail. The construction process of HETT is not at all completely different which is suitable to MOS Design process and is applicable for portable mobile applications. The power analysis of HETT based standard 6T SRAM cell is provided and the performance is verified with the conventional MOSFET based 6T SRAM cell.

Keywords-

Heterojunction tunneling transistor (HETT); 6T SRAM cell; Band to Band Tunneling; Miller Capacitance; Subthreshold Swing; Low power.

Fluoride Removal from Aqueous Solution using low cost adsorbent Annona squamosa (Custard Apple) Leaf

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Lingampalli Partha Praveen, Jawaharlal Nehru Technological University, Anantapur.

Abstract:--

Fluoride contamination in groundwater and wastewater due to geological and anthropogenic causes is a major problem in many parts of the world. Presence of fluoride in low concentration causes dental caries and higher concentration cause dental, skeletal fluorosis. Researchers conducted experiments and developed many technologies to remove fluoride from water. Each technology has its own benefits and limitations. Adsorption is one of the feasible methods for fluoride removal. Custard Apple (Annona squamosa) leaves; it's pyrolyzed at 800oC (with and without inert gas) is used as an adsorbent material. Effect on adsorption of fluorine on Annona squamosa as the adsorbent by varying parameters such as particle size, agitation speed, pH, contact time, adsorbent dosage, initial fluoride concentration and temperature are studied. At optimum parameters pH is 7, contact time is 30 min, agitation speed is 500 rpm, and adsorbent dosage is 1.5g per 50 mL of fluoride water, the fluoride removal efficiency achieved is 92%. Adsorption isotherm modeling is made and the data obtained is best fitted to both Langmuir and Freundlich models. XRD and FTIR patterns of the adsorbent were recorded to get a better insight into the mechanism of the adsorption process.

Keywords:

Fluoride removal, adsorption process, custard apple leaf, pyrolysis, Isotherms.

Impact of Microphysics Parameterization Schemes in Simulation of Vardah Cyclone using the Advanced Mesoscale Weather Research and Forecasting Model

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Abstract:--

The very severe Tropical Cyclone Vardah caused extensive damage and loss of life in Andaman and Nicobar Islands and south India during December 2016. In the present study, an attempt is made to study the sensitivity of numerical simulations of the very severe tropical cyclone Vardah to different physics parameterization schemes is carried out with a view to determining the best set of microphysics schemes for the prediction of tropical cyclones originating in the north Indian Ocean. Two nested domains are considered for WRF model simulation. The horizontal resolution of domain-1, and domain-2, are 27 km, and 9 km respectively. The simulated track and intensity of tropical cyclone Vardah are compared with the real-time data provided by the Indian Meteorological Department (IMD). WRF model Simulations are performed using different microphysics parameterization (mp) schemes by fixing convective cumulus parameterization (cu) schemes to Grell-3D ensemble scheme. It was observed that wrf simulations with WRF Single Moment-3 (WSM3) microphysics scheme compare well with observations and in the ARW model. The cyclone track and cyclone intensity prediction skill depends on CU and MP parameterization schemes.

Keywords:

Vardah, ARW Model, physics parameterizations, Cyclone track, Track error

A Study of Design Mix Concrete Properties by using Natural Additives.

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Abstract:--

Originally, Concrete mix contains cement, sand and coarse aggregate is a general proportion. But it contains short falls of properties which affects the strength of concrete which is used for construction.

Now-a-days the technology is enhanced to overcome the short falls and to improve the strength of concrete by using natural & artificial additives like organic & inorganic.

The present study on plain concrete by using organic additives like coconut fiber & bagasse is mixed with cement, sand & coarse aggregate in terms of different percentages of additives to impact the strength of concrete ability.

The additives like coconut fiber is mixed in proportion in terms of percentage 0.5, 1.0, 1.5 and bagasse percentage is also taken as 0.5, 1.0, and 1.5 to find out the compressive strength of concrete. Total Number of Cubes for both additives of each percentage tested 9 Cubes as per IS 456:2000 to find out the Characteristic strength of Plain concrete for 7days, 21 days and 28 days.

The aim of this study is to check the concrete strength compared separately for both natural additives like bagasse & Coconut fiber.

Keywords: --

Plain cement, Coconut fiber, Bagasse, Compressive strength.

Multi Path Pipelined Architecture with twin parallel processing after second stage for High-Speed FFT

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Abstract:--

This paper presents review on different pipelined FFT architectures and proposes a new pipelined FFT architecture with twin parallel processing after second stage. The proposed architecture follows a novel data flow path, Twiddle factor generation and multiplication is implemented by multiplier and shift registers. The first two stages are implemented by multipath pipelined form after that it follows twin parallel form. The twin parallel form consists of two pipelined units simultaneously generates FFT output values. This architecture reduces latency in a greater extent with a smaller cost of hardware. The proposed architecture compared with previous architectures. The proposed architecture is implemented for Radix-2 and Radix-2^2 DIF FFT. The throughput of proposed architecture is four.

Keywords:

FFT, Twiddle Factor, Pipelined, Radix-2, Radix-2^2, DIF, Latency.

A Review of Concrete Properties Modified By Microbial Induced Calcite Precipitation (MICP)

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Abstract:--

In recent times, concrete is a vital material in the development enterprises because of its huge commitment towards quickened progress. Concrete is one among the most important resources of CO2 emission and is not considered as sustainable material. Micro cracks are natural and unavoidable in concrete. This opens the path for entry of aggressive chemicals inside concrete leading to deterioration and there arises the need for concrete to be rehabilitated. Microbial induced calcite precipitation (MICP) has proved to be a promising solution in remediating cracks in concrete by way of sustainability. The MICP technology has been studied over last few years to enhance concrete properties. Earlier research at the modes of utility of this innovative technology and subsequent picks up in strength and quality of concrete has been condensed in this paper.

KeyWords:

Concrete strength, durability, Microstucture, MICP, Self healing,bacteria and calcite precipitation.

Comparative Analysis of P&O and Incremental Conductance Method for PV System

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Abstract:--

The power emergency in India can be overwhelmed by presenting the other non-customary strategies for control age. The most well-known non-ordinary technique is sunlight based power. As the primary wellspring of this strategy is sun, the power age may fluctuate with the natural conditions like irradiance, temperature varieties and sudden impedance of mists which can't be overcome or avoidable by the individuals. The Maximum Power Point Tracking (MPPT) is utilized to get the Maximum power age point despite the fact that there is a variety in temperature, irradiance or shading impacts. By utilizing this MPPT techniques we can get a handle on required measure of energy with lessened number of boards so the cost for add up to PV framework will get decreased. This paper displays a similar investigation of two MPPT strategies i.e Perturb and Observe and Incremental Conductance Method (ICM), in light of the fact that these calculations are broadly utilized because of minimal effort and simplicity of acknowledgment by utilizing MATLAB/SIMULINK. Here the fundamental amounts like voltage, Current of a board are followed to mimic the MPPT Algorithms.

Keywords:

Photovoltaic (PV), Maximum Power Point Tracking (MPPT), Perturb & Observe (P & O) and Incremental Conductance Method (ICM).

An Efficient Audio Message Transmission Using QR-Code

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Abstract:--

The main source of motivation behind the idea was the overwhelming story of people visiting museums and can't be able to read the information which is written in very small character size and some who cannot be able to read English so by implementing our project they can get information in audio form just by scanning QR code. Even they can select the language which they are comfortable. The capacity to extricate data from mostly devastated or mutilated QR codes, and the ease of use, makes QR codes viable for organizations. The Arrangement is a vulnerable basis venture, it is support group investment for innovative work in making complete programming based answer into securing a zone. That framework intends for give programming based answers for business and government organizations.

Keywords:

Audio message, QR-Code, Base-64 Encoding, Decoding, DWT watermarking

Thermal Performance Analysis of an Artificially Roughened Solar Air Heater with Ribs: A CFD Analysis

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Abstract:--

Heat transfer rates in solar air heaters are found to be low due to low values of air side convective heat transfer coefficients. One of the conventional methods of enhancement of heat transfer coefficient is by increasing the turbulence near the absorber surface of the solar air heater. Ribs of different sizes and geometry can be provided on the absorber surface to increase the turbulence near the surface. This paper presents the numerical investigations on enhancement of thermal performance of the Solar Air Heater by using ribbed absorber plate. The different geometrical cross-section of the ribs considered are semicircular, rectangular, triangular and arc in shape. Performance of solar air heater is initially compared between plane and ribbed absorber surfaces. Further comparison has also been made between the different geometry of rib profiles with different dimensions. Surface of the absorber plate is assumed to be at constant heat flux and the walls of the duct as insulated. Parametric analysis is numerically carried with Reynolds number in the range of 2300 to 20000, relative roughness pitch between the ribs as 6.67, 10 and 13.33 and relative roughness height as 0.055, 0.073 and 0.11. It is found from the primary investigation that the heat transfer coefficients are higher for ribbed absorber surface compared to plane surface. It is found from the results that the arc sectioned ribs are providing better augmentation in heat transfer between absorber plate and air. Nusselt number is found to augmented by 1.66 times over the plane absorber plate at relative roughness height of 0.055 and relative roughness pitch of 10. Similarly, for the same relative roughness pitch, Nusselt number is augmented by 1.78 and 1.47 times over the plane absorber plate at relative roughness height of 0.0733 and 0.11 respectively. At a relative roughness height of 0.055, Nusselt number is augmented by an average value of 1.625 times over the plane surface absorber plate at relative roughness pitch of 6.66 and 13.33.

Keywords:

Absorber plate, Heat transfer coefficient, Reynolds number, Solar Air Heater.

A Study on Human Centric Agile Methodologies with Big Data Analytics in Software Development

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Abstract:--

This paper proposes an agile model-based systems engineering (SE) methodology to engineer the contemporary large, complex, and interdisciplinary systems of systems. This paper introduces the reader the background of Big Data Analytics and how efficiently Agile methodology can be applied to achieve the business goal. The journal focus on giving background of Big Data and how using Agile practices such as iterative, incremental, and evolutionary style of development can be applied for Big Data Analytics. . This methodology brings in the advantage of involving business community during development and continuous delivery of working user features. The Agile uses a universal and intuitive SE base process, reducing the complexity and intricacy of the base methods, emphasizing the agile principles such as continuous communication, feedback and stakeholders' involvement, short iterations, and rapid response, and rousing the utilization of a coherent system model developed through the benchmark systems graphical modeling languages. The Agile methodology also includes a supporting graphical tool that aims to be an agile instrument to be used by systems engineers in a model-based development environment.

keywords:

Big Data Analytics, Agile, Big Data,Model Based System Engineering (MBSE), Software Engineering.Data Analyst.

Convective Heat Transfer through Nano Fluid in a Vertical Wavy Channel with Travelling Thermal Wave

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Abstract:--

The effect of radiation on free convective flow of heat transfer through a porous medium in a vertical wavy channel has been studied. The resultant differential equations are solved by RK 6th order method. The numerical computations are presented graphically to show the salient features of the fluid flow and heat transfer characteristics. The Nusselt numbers are also analyzed for various of governing parameters.

Key words –

Nano-fluid, Free convection, Radation, Travelling Thermal Waves, Porous Medium, RK 6th order method.

Finding Accuracy on Legitimacy & Reputation Value Based Malicious Node Detection & Removal Scheme on Cluster in MANETs

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Abstract:--

While Nodes forms networks dynamically & they doesn't have any central control infrastructure in a mobile adhoc networks thus routing becomes a significant issue. As packet forwarding is done by nodes itself there is increased possibility of packet dropping or DOS (denial of service) .so, the security in wireless networks became a challenging issue in MANET. For getting secure delivery of data we require efficient routing scheme, here is the proposal "Finding an Accuracy on Legitimacy & Reputation value Based Malicious Node Detection & Removal Scheme on Cluster in MANETs" for detecting and removal of malicious nodes in a cluster. In this paper for a structured MANET, Network has number of clusters with number of nodes, each cluster has a cluster Head(CH), as packet forwarding done by nodes they need a node ID (including CH needs node ID) which is a prime number. Here to identify and use secure route between a source and a destination, every node need to maintain legitimacy value table(LVT) and reputation level table(RLT) in the network. The cluster head node Deny or Entail the malicious nodes from the identified route and select the most optimized route to a determined destination based on legitimacy value LV & reputation value RV.

As proposed in existing system the reputation values calculation is not producing good accuracy and if we use the same calculation the efficiency will affect. So, we proposed the alternative solution for this and we identified new attack and here we are providing solution for this attack by finding accurate reputation value of Malicious Node(MN) by comparing in Reputation Level Table(RLT).

Simulation Analysis on Network Layer Attacks in Wireless Mesh Networks

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Abstract:--

Security mechanisms in Wireless Mesh Networks(WMNs) play an essential role to protect WMNs features. However, the existing security standards of WMNs are still in draft state. In addition to that, WMNs features like integrating with heterogeneous nodes and networks, which make designing robust security mechanism for WMNs is more complex. To develop an efficient security mechanism for WMNs, firstly we need to study the vulnerabilities of WMNs, and then exploit these vulnerabilities to perform various attacks and find the counter measures for these attacks. In this paper, we have studied various network layer attacks, based on this study we identified the interdependencies of these attacks. We use AODV protocol to exploit these attacks. Our simulation results show that the each attack severity with respect to goodput and Packet Delivery Ratio (PDR). We explained how these severity measures are useful for future WMNs security mechanisms.

A Review on Present State-of-the-Art on Internet of Things

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Abstract:--

Internet of Things (IoT) is a set of technologies that enable connectivity between physical and digital world. As it is going to show high impact on the world it is important to understand what it is, its applications, standards, protocols, issues and enabling technologies. Towards this end, this paper throws light into the aforementioned aspects of IoT. With the emergence of smart sensors in many domains like healthcare with ability to deliver different kinds of applications without human intervention, there are possibilities that could not be imagined earlier. Machine to Machine (M2M) distributed technologies help in realizing IoT. With many enabling technologies IoT can result in new applications and business models. There will be unprecedented changes in the technology usage as IoT can bridge the gap between the physical and digital things in the real world. Smart homes, smart cities, intelligent transport systems and real time healthcare are some of the use cases of IoT. It promotes real time decision making systems. This paper presents an overview of IoT, its architecture, its components, standards, issues or challenges, applications and protocols. It covers identification techniques like RFID and NFC besides other communication technologies that can participate in IoT. The relation between IOT and other technologies like cloud computing and data analytics is studied. Different protocols and service oriented applications are also discussed.

Key words:

Internet of Things, IoT architecture, IoT applications, IoT components, IoT protocols

Implementation of Dc - Dc Boost converter with PIC Microcontroller for Electric vehicles

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Abstract:--

Battery fed electric drives are mostly used for Electric vehicle applications. Compared to Hybrid EV due to various advantages such as emission, it decrease the petroleum resources, waste oil dumping decreases, it provide good performance in acceleration and braking conditions. Electric vehicles it consists of Dc-Dc converter and electric motor drive system. It is operating in three modes (i) Acceleration mode (ii) normal steady state (iii) regenerative braking mode. In acceleration, the power flow from battery to electric motor. In normal steady state converter output maintains in steady state value. In regenerative braking mode the power flows from electric motor to battery. If any variations occurs in the battery and the motor side the converter output maintain in steady state it produce variable output voltage. In order to maintain in steady state value, PIC Microcontroller 16F877 connected across the converter circuit. To control the output voltage of the converter for driving the vehicle at desired speed to provide fast response with out oscillations, the PIC Microcontroller is used and it shows satisfactory result. It is used to generate the PWM signals to converter circuits.

Keywords:--

PIC16f877 Microcontroller, MOSFET Driver, Boost Converter.

Comparative Analysis of Image Enhancement Techniques applied to CT Liver Image

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Abstract:--

Computed Tomography (CT) is very much useful for doctors to analyze biological changes of internal organs. CT images of liver and lungs will have low contrast. So doctors cannot identify all types of diseases from CT images. Hence image processing techniques are used to enhance the CT images to help doctors for diagnosis has considerable interests now a day. In this paper, different methods of image enhancement for low contract liver CT images are studied.

Key words:

CT scan, Image Enhancement, image negative and image sharpening

A Novel Framework for detection and classification of Brain Hemorrhage

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Abstract:--

The proposed work focuses on detecting the correct location and type of the hemorrhage in MR Brain image. The Gradient Recalled Echo MR images are considered as the input image. Then a region and structure specific Multi level Set evolution algorithm is implemented to segment the hemorrhagic region. An enhanced Local Tetra pattern based feature extraction algorithm is used to extract sharpened tetra features and the features are optimized by applying an enhanced Grey Wolf Optimization algorithm. Finally, a Relevance Vector Machine based Classifier is designed to classify the types of the hemorrhages. The proposed framework is compared with the existing techniques on the scale of accuracy, sensitivity, specificity, precision, Jaccard, Dice and kappa coefficient and proved to be outperforming.

Key words:

Brain Hemorrhage, Multi-Level Set algorithm, Local Tetra Pattern, Grey Wolf Optimizer, Relevance Vector Machine.

Word n-gram based approach for word sense disambiguation in Telugu natural language processing

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Abstract:--

Telugu (తెలుగు) is one of the Dravidian languages which is morphologically rich. As in the other languages it too contains polysemous words which have different meanings in different contexts. There are several language models exist to solve the word sense disambiguation problem with respect to each language like English, Chinese, Hindi and Kannada etc. The proposed method gives a solution for the word sense disambiguation problem with the help of n-gram technique which has given good results in many other languages. The methodology mentioned in this paper finds the co-occurrence words of target polysemous word and we call them as n-grams. A Telugu corpus sent as input for training phase to find n-gram joint probabilities. By considering these joint probabilities the target polysemous word will be assigned a correct sense in testing phase. We evaluate the proposed method on some polysemous Telugu nouns and verbs. The methodology proposed gives the F-measure 0.94 when tested on Telugu corpus collected from CIIL, various news papers and story books .The present methodology can give better results with increase in size of training corpus and in future we plan to evaluate it on all words not only nouns and verbs.

Key words:

Joint probabilities, Machine translation, n-grams, Word Sense Disambiguation

Personal Privacy Preserving Data Publication in IoT : A Review

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Abstract:--

Internet of Things (IoT) collecting large amount of data from the people in many ways, at this time it is very crucial towards providing personal privacy to the generated data before available to the community for review or research point. Personal Privacy related research is growing very quickly all through the earlier period. Many techniques to put out the data without violating the personal privacy in different areas like social networks, trajectory data and IoT connected data etc., however it is a very challenging task to protect personal privacy in the age IoT where a volume of data is generated, because the existing techniques not much appropriate for providing the personal privacy to the data to be published. This paper is a review on several issues from the past few years in personal privacy. This paper discusses the research directions in personal privacy in IoT as well as human activity recognition (Computer Vision).

Keywords:

Personal Privacy, Attack, Accountability, Utility, Tradeoff.

Improving the safety of an uncontrolled Road Traffic Junction: A case study of Maisammaguda T-junction

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Abstract:--

Road traffic junctions are potential locations for accidents especially when they are not provided with signal and completely uncontrolled. In the present paper a T-junction located near Maisammaguda was identified as the study location. It was an uncontrolled road traffic junction with many conflicts and congestion, reducing the safety of students, faculty and other commuters. Near about ten professional colleges are located in this area, with heavy traffic flow during morning and evening peak hours. Traffic volume count was made as per IRC guidelines and signal timings were designed for the proposed signalized T Junction. Detailed phasing and timing plans were also arrived at separately for morning and evening peak hours. It is believed that the proposal if implemented will significantly reduce the number and severity of accidents at this location.

Key words:

Traffic volume, PCU, Saturation flow, signal timing.

Analysis of Selected Parking Spaces in Medium sized Cities of Tamil Nadu

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Abstract:--

The present study aims to analyze the conditions of identified parking lots in two medium sized cities of Tamil Nadu, namely Tiruchirapalli and Thanjavur, and suggest possible measures for improvement. Methods like parking space inventory survey, cordon count and parking usage control by patrol were used for data collection. The number of vehicles occupying the parking spaces at a specific period of time was determined. This count was taken at regular intervals over a time period spread over 9 am to 6 pm, in three sessions. The data collected was then analysed and peak values of the numbers of different types of vehicles was identified. Observations of the prevalent topographical conditions at the study locations were made and a few suggestions pertaining to maintenance, enhancement, improved efficiency and tariff were provided.

Keyword:

Parking Space Inventory, Tiruchirappalli, Thanjavur, strategies, patrol, tariff, parking lots.

Torque and Pitch Control for Wind Energy Conversion System Using Sliding Mode Approach

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Abstract:--

The integration of wind energy with the grid is one of the major challenges as the wind energy depends upon the most fluctuating wind speeds. Therefore it requires a stringent methodology to control and maintain the stability of power system. This paper presents the torque and pitch control of Wind Energy Conversion System (WECS) that implements the variable speed Doubly Fed Induction Generator (DFIG) using Sliding Mode (SM) approach. For the speeds above the rated wind velocity, pitch control technique has been implemented and below the base speed torque control technique has been applied. The limitations of pitch actuator are compensated by the torque control of induction generator. The modeling and simulation of WECS with sliding mode control (SMC) scheme is carried out using MATLAB SIMULINK environment. The performance parameters such as pitch angle, active power, reactive power and rotor speed are compared for the Proportional plus Integral (PI), Linear Parameter Varying (LPV) and SMC schemes. Simulation results confirm that the performance of SM control is superior in terms of pitch, speed, active and reactive power compared to PI and LPV controllers.

Keywords:--

DFIG, pitch control, SMC, torque control, WECS.

Qualitative Analysis of Grey Water around Jntua for Improvement of Water Reuse

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Abstract:--

Wastewater refers to the water of no further use, consisting 99% water and 1% waste. Grey water and black water, only types of Wastewater have separate method of treatment. Grey water can be more efficiently and widely used even with a minimal treatment than compared to its counterpart. Six Locations were taken into consideration at Jawaharlal Nehru Technological University, Ananthapuramu with around 3000 students. All the locations were selected as such that most of properties were covered of JNTUA for purpose of designing a treatment plant. Samples were collected and analysed for three seasons Rainy, Winter and Summer. A total of around 26 parameters like pH, COD, BOD, EC, Nitrates, Magnesium etc., Rainy and Winter grey water shown similar properties where summer parameters were a little different. Being a drought zone, there is a need for savage of Surface and Underground water. Water Quality Index, being a valuable and unique rating to depict the overall water quality status in a single term that is helpful for the selection of appropriate treatment technique to meet the concerned issues, shows the need for the basic treatment of this grey water.WQI results show that the most polluted water are of summer samples while the least were of the rainy season. Treated water can be used for the watering of plants, construction work and toilet flushes in and around the campus.

Keywords:

Ananthapuramu, Greywater, JNTU, Recycle, Reuse, Treatments and WQI.

Degradation of Municipal Wastewater Using Photocatalytic Silica Nano Particles

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Abstract:--

The main objective of this work is to degrade the wastewater by using photo catalytic nano particles. The photo catalytic nano particles works under UV light and degrade the organic compounds that are present in municipal wastewater. The commonly used photocatalytic nano particles are silicon dioxide, platinum, silver nanoparticles, zinc oxide etc. These nano particles are produced by different methods like sol-gel process, chemical vapor deposition etc. and are characterized by different characterization techniques like X-ray diffraction (XRD), Scanning Electron Microscopy (SEM), Energy Dispersive Studies (EDS), Transmission Electron Microscopy (TEM) etc. In the present study silicon dioxide (SiO2) nanoparticles were synthesized by sol gel technique and characterized using SEM and XRD. The nanoparticles synthesized were used for the treatment of municipal wastewater. The degradation of the wastewater is evaluated based on the parameters such as degradation temperature, wastewater concentration, amount of nano particle added and time of degradation. COD analysis was carried to estimate the percentage of degradation of wastewater. It has been confirmed that photocatalytic silica nano particles can be used for the degradation of municipal wastewater. It was also observed that a higher degradation percentage of was obtained by this method as compared to the activated sludge process of treatment.

Keywords:--

Degradation, photo catalysis, silicon dioxide nanoparticles, sol-gel, wastewater

Enhanced Feature Selection Clustering Algorithm for Attribute Similarity in High Dimensional Data

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Abstract:--

Data collection is aggressive concept in data mining which is based on various attributes from dissimilar data sets. For some real world data, real time dataset portioning with abnormal behavioral class label instances is expensive and impossible to data presentation. Through user preferences, now a day's data summarization based on clustering with different attributes is another aggressive concept. Traditionally clustering with multi-attribute framework was introduced to group multiple attributes to explore uncertain data for reliable data sets. In multi attribute similarity measure for uncertain data, feature selection is the factor to provide most matched and most useful features which produces compatible results from original set of features present in data sets. So feature selection algorithm is required to evaluate efficiency to form subset of features with respect to quality assurance for subset of features. In this paper, we proposed and implemented Enhanced Feature Selection based Clustering (EFSC) algorithm to evaluate above considerations. Our proposed method consists of two stages in implementation. In first stage, classify features into clusters using graph based theoretic approach. In second stage, identify most representative attribute which is most relate to selected attribute from each cluster to sub set of features. In this paper, we use Minimum spanning tree (MST) for effective clusters formation with respect to subset of features. EFSC is compare with some existing algorithms like FCBF, ReliefF, CFS, Consist, and FOCUS-SF with respect to chosen classifiers prior to and after feature selection from subset of features. Our experimental results performed on company statistical data with text, image orientated data, and EFSC produces small subset of features with high accuracy and less time efficiency for real time data sets.

Keywords:

Multi attribute clustering, minimum spanning tree, feature selection, theoretic graph clustering and sub set of features.

Investigations on Grid Connected PV System under Variable irradiation conditions

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M.Vijaya Kumar, Professor, JNTUA

Abstract:--

A solar photovoltaic panel or a solar PV module is a device, which is to be considered universality the basic constituent of a solar photovoltaic system and is a combination of series and parallel assembly of solar cells. The electrical performance of this solar photovoltaic module be contingent on different environmental situations like PV cells/module solar spectral (air mass), ambient temperature, solar irradiance, angle-of-incidence. With these dependent conditions, there will be a petite chance to operate at its maximum power point (MPP) Hence, a Perturb and Observe (P&O) MPP algorithm is employed which draws considerable power with the desired time response. In present work, the interfacing of Solar PV system with the utility grid system which is having 15kW based on the Voltage Oriented Control (VOC). The temperature of the individual photovoltaic cell and solar irradiation are to be considered as inputs for the simulation process, whereas the duty cycle of the DC-DC boost converter is an output of the P&O controller. Performance of this grid-connected PV system with VOC method is analyzed with the simulation results and %THD values of the voltage and current at coupling point is verified. The results show the superiority of VOC method and its high dynamic behavior under variable irradiation conditions.

Key Words:

DC/DC boost converter; P&O MPPT; Grid connected PV system; VOC; VSI.

BCD Divider Architecture for High Speed VLSI Application Using Vedic Mathematics

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Abstract:--

Power, delay, area and speed are the parameters on which the performance of any processor depends on in digital domain. These parameters (i.e power, area and delay) should be less in order to get an effective results. In all VLSI architecture, Division operation is always considered to be more complex, time consuming and bulky. Vedic Mathematics gives a new perspective to mathematics. In this paper we have implemented a BCD division architecture using Nikhilam Sutra a formula (sutra) from the vedic mathematics. Here division has been implemented with improved results of time delay using simple algorithms. The proposed division algorithm is coded in Verilog, synthesized and simulated using Cadence design suit 13.1. Simulated results for proposed Vedic BCD divider performed 29.9% faster than the conventional method.

Keywords:

BCD divider, Vedic Mathematics, Nikhilam Sutra.

Optimisation of Process Parameters in Hard Turning of Aisi 5150 Steel by Anova

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Abstract:--

In the present study, an attempt has been made to hard turn AISI 5150 steel using uncoated TiC inserts. Round bar stock of AISI 5150 steel was hardened to 48 HRC by oil quenching. Three different process parameters Speed, feed and depth cut were chosen at three different levels. The parameter combinations were chosen according to L9 orthogonal array to limit the number of experiments to nine instead of twenty seven. ANOVA is performed on the results of surface finish obtained for 9 experiments parameter combination chosen. The percentage contribution of the factor feed towards the response i.e., surface roughness is 51.19%, followed by depth of cut 24.07% and finally by speed 15.01%.The main effect plots for means were generated between process parameters and surface roughness an optimum process parameters were chosen and confirmation experiment was performed on the selected optimum process parameters

Keywords :

AISI 5150 steel, ANOVA, Hard turning, Surface roughness,

A Review report on Challenges and Opportunities of Edge, Fog and Cloud Computing by employing IoT Technology

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Abstract:--
In the future, various information and things will be connected to the network. People can now live more convenient and comfortable life where the things and information coordinated together. A world where things are connected to network is referred as IOT (Internet of Things). A huge amount of incomplete data is generated by IOT need to process and responded to very short time. This pose challenge of dealing with big data from many geometrically distributed data sources which are to be managed and processed. To achieve this objective, cloud computing is a treated as one of the popular choice due to its scalability, storage, computational and other capabilities. However current cloud models are not intended to handle the essentials of IOT– volume, variety, and velocity of data. Moreover, as the physical distance between cloud and user increases, transmission latency increases with it, increasing response time and stressing of the user. In addition to that, the processing speed in this environment is largely dependent on the performance of user device. The viable solution to these problems is identified as Edge Computing. The Edge Computing platform works by allowing some application processing to be performed by a small edge server position between the cloud and user, and crucially in a location physically closed to the user. This paper comprehensively presents various research trends that are available in Edge, Fog computing along with a comparison is made among Cloud. Particularly the architecture, characteristics, key technologies, potential applications, security issues and challenges of Edge, Fog and Cloud Computing are discussed and summarized.

Keywords:
IOT, Cloud Computing, Fog Computing, Edge Computing, Software Defined Networking(SDN), Network Function Virtualization(NFV), Content Distributed Networking(CDN)

Comparison of Different Feature Extraction Methods for the Analysis of Uterine Magnetomyography Signals to Predict Term Labor

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Abstract:--

The prediction of term labor by analyzing the uterine magnetomyographic signals attempted in this research. The existing works did not focus on the classification of the signals. Publicly available MIT-BIH database records were divided into term-labor and term-nonlabor groups. This research presents two methods for feature extraction, discrete wavelet transform and wavelet packet transform. Energy, standard deviation, variance, entropy and waveform length of transform coefficients used in the first method. The normalized logarithmic energy of wavelet coefficients from each packet of the total wavelet packet tree used as the feature space for the second method. The labor assessment done through the classification of the features by using five different classifiers for different mother wavelet families. Discrete wavelet transform features extracted using coif5 wavelet with random subspace classification gives the accuracy, precision and FPrates of 93.9286%, 94.2014% and 5.7986% respectively. Using sym8 wavelet for wavelet packet transform features classified with SVM classifier performed well with 95.8763% accuracy, 95.9719% precision and 4.0281% FPrate. The results obtained from the research will be helpful in term labor assessment and understanding the parturition process.

Keywords:--

Discrete wavelet transform, Labor prediction, Uterine magnetomyography, Wavelet packet transform.

Design and Implementation of AIS instruments using big data and AI Approaches

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Abstract:--

This paper present the theoretical aspect of inventing a new device which is called as an Artificial intelligence system (AIS) is a Automatic medical device is a self-detection diseseases machine to identify the trace element & recognizing the diseases and advising the patients to be aware of their health. A trace element is an element (e.g., lead, selenium, arsenic) that is present in a human body and it is very small, making it a challenge to measure them accurately. This research focus is on trace elements that are in the human body and the proposed to devise (now in theoretical aspect) a new medical device to identify all the trace elements in the human body and recognizing the diseases and checking the health of the people because they are essential for proper growth. All essential elements are for human nutrition. . It can be helpful to cure many diseases in future at home itself. The death ratio can also be reduced and human can live longer. The people can check their daily nutrition using this one.

Keywords:--

Elements, diseases, level, Artificial intelligence

Implementation of Crank Mechanism with Taguchi Optimisitation Using L12 Orthogonal Array

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K.Satish Babu, Principal, Ravindra College of Engineering for Women.
K. Hemachandra Reddy, Professor, Dept of Mech, JNTUA Ananthapuramu.

Abstract:--

Now a day's time delay management becoming big task for production industries, mechanisms has to implement to minimize time delay to achieve production rate within the economical criteria. Present research focus on the time delay optimization by optimizing present working mechanism. To promote new technique, as a part of research conveyor loop pneumatic assembly in industry taken as a case study with Taguchi as a tool to optimize. Present working crank mechanism optimized with S/N ratio mean as a primary part are evaluated at a rotational speed of 200rpm. This study targeted on the structural optimization of a flexure hinge by employing the Taguchi method, with the motive of maximizing the fatigue life of this mechanism. Kinematic equations and L12 orthogonal array formed to optimize actual means in present working machine assembly.

Keywords:

Taguchi technique, Kinematic behavior, crank mechanism

Correlation between carrier and space vector based Random PWM Techniques for Induction Motor Drive

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Abstract:--

Conventional pulse width modulation (PWM) techniques for voltage source inverter (VSI) generate high amount of harmonics at and around harmonics of switching frequencies. These causes acoustic noise and electron magnetic interference to the nearby electronic systems. In this paper different random PWM techniques were proposed for two-level VSI. The implementations of these PWM techniques were presented based on carrier comparison approach and digital space vector approach. Moreover correlations between these two methods were also presented.

Keywords:--

Constant switching frequency; Pulse Width Modulation (PWM); Space vector approach; Random PWM; Variable Switching frequency.

Removal of Reactive Yellow (Ry) Azo Dye Using Activated Carbon Synthesized From Fire Stick Wood

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Abstract:--

In the present work we synthesized activated carbon using fire stick wood. For the synthesis chemical activation method is employed using phosphoric acid. Various parameters which influence the adsorption process such as agitation time, adsorbent dosage, initial dye concentration, volume of RY dye solution and pH were studied. Studies showed that 40 mg of adsorbent with 240 micron size was found to remove around 96.76% of dye. Increase in adsorption with the increase in dosage of the adsorbent and decrease in size of the particle, initial concentration and increase in pH of the solution 3 to 6. The obtained results show that activated carbon synthesized from fire wood is effective in the removal of the dye from aqueous solution.

Key words:

Activated Carbon, Fire Stick, Wood, Reactive Yellow, Dye.

Some Fixed Point Theorems with Applications by Using a Concept of Altering Distances

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Abstract:--

We obtain common fixed point theorems with application for two self maps on a complete metric space by using a concept of altering distances. These are the generalizations of the results of the Jose R.Morales and Edixon Rojas[3].

Key words:

Complete metric space, contractive mappings, altering distances, common fixed points.

AMS Subject classification: 47H10, 54H25.

A Probability Relevance Classification Approach for Service Information Discovery using Semantic Domain Knowledge

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Abstract:--

The intense growth of information systems and domain services has made it difficult to provide accurate and relevant information in relation to queries and domain service needs. Conventional domain service categorization facilitates searching for related services and helps to determine classification with defined domain service knowledge and taxonomy, but it fails to relate the service which is conceptually related as such. The nonexistence of any automated mechanism for domain knowledge and taxonomy enhancement causing a high number of irrelevant services information discovery for a requested query. This paper proposes a Probability Relevance Classification (PRC) approach to overcoming the constraint of automatic classification and conceptual knowledge enhancement through constructing relevance domain knowledge semantically in support of Domain Ontology Model (DOM). The proposed PRC approach classifies the information in support of a customized Naive Bayes method and Semantic Terms Similarity method in association to DOM constructed. The experimental assessment of the recommended approach shows an improvement in the service classification and achieves better relevance results in related to the service query request. The classification accuracy in comparison with the existing classifiers shows an improvisation of the proposal.

Keywords:

Information Discovery, Classification, Probability Relevance, Domain Knowledge.

Simulation and Analysis of Perturb and Observe MPP Tracking algorithm under uniform and non-uniform irradiation

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Abstract:--

The PV array generating power is always directly affected by various conditions such as angle of inclination, temperature, irradiation of sun, shading effect, and solar array configuration. In practice, PV arrays are commonly partially shaded by trees, clouds, nearby buildings, bird droppings and other utilities which leads to multiple peaks appear in the P-V curve, a global maximum and one or several local peaks. In this paper, the "perturb and observe" (P&O) maximum power point tracking (MPPT) algorithm employed for tracking the maximum power point under uniform and non-uniform irradiation conditions. Initially, this paper presents the P and O algorithm operation, later the boost converter performance details and finally the combination of a boost converter with P and O algorithm. The evaluation process has been carried systematically for the uniform and non-uniform solar irradiance and finally, the results are analyzed.

Keywords:--

Solar Photovoltaic array (PV); Uniform and non Uniform irradiation; Partial shading; Maximum Power Point tracking (MPPT); Perturb and Observe (P&O); Boost Converter.

Study on Mechanical Behaviour of Hybrid Composites

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Abstract:--

Composite containing more than one type of fiber is known as hybrid composites. Hybrid composites can be made from natural fibers, artificial fibers and with a combination of both fibers. Hybrid composites can help us to achieve a better combination of properties than fiber reinforced composites. The constituent fibers in a hybrid composite can be altered in a number of ways leading to variation in its properties. The different fibers were reinforced with suitable matrix for preparing the hybrid composites using various manufacturing methodology. The hybrid composite has wider applications across industries such as aerospace, automobiles, Marine etc.

In the paper, fabrication of hybrid composites is done manually using hand layup method. It is then subjected to a compressive load for thorough distribution of resin in respective lamina. The fabricated composite is tested for its tensile and flexural properties. The results obtained are further analyzed for the study of the material fabricated.

Keywords:

Hybrid composites, Natural fibers, artificial fibers, fabrication, Tensile, Flexural.

Applications of Green Materials for the Preparation of Eco-Friendly Bricks and Pavers

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Abstract:--

The most basic and primary building material for construction of houses is the conventional brick. The rapid growth in today's construction industry has obliged the civil engineers in searching for more efficient and durable alternatives far beyond the limitations of the conventional brick production [1,2]. A number of studies have been made and serious steps have been taken in manufacturing of bricks from several waste materials. However, the traditional mean of bricks production which has brought hazardous impacts to the context has not yet been changed or replaced by more efficient and sustainable one[3,4]. Most of the researches went through enhancing the clay brick quality and properties by mixing the clay with various recycled wastes as foundry sand, granite sawing waste, harbour sediments, perlite, sugarcane, baggase ash, clay waste and fine waste of boron, sewage sludge, waste glass from structural wall and other different wastes. Compile this state of the art work of manufacturing bricks in the past and the current trend in the bricks industry with respect to the raw materials, ways of manufacturing and the out- comings.

This project presents an experimental study on the utilization of waste materials which replaces clay with (Plastic covers, Ceramic Powder, Egg Shell Powder, GGBS, Silica Fume, Rice Husk Ash and Lime Powder) and Fine Aggregate with (Recycled glass, Dry Grass, Dead Leaves, Tree barks powder, Sugar cane powder, crumbed rubber) to produce eco-friendly Bricks. This project is an attempt to fill the gap of the past studies and suggest more sustainable and sophisticated methods of brick manufacturing in the future. 40 percent replacement of fine aggregate with crumbled rubber and dry grass in mortar bricks have given encouraging results, also the replacement of cement by egg shell powder at 20% has given a considerable result.

Keywords:--

Eco Friendly Materials, Waste Plastic, Ceramic Powder, crumbed rubber, sugar cane powder, Dry Grass, Dead Leaves etc.

Study of Filler Wires Effect on Weld Characteristics of Aluminium Alloy (6351) during Gas Tungsten Arc Welding (GTAW)

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G. Vanya sree, Assistant Professor, CVRCE.

Abstract:--

Gas tungsten arc welding (GTAW) is an electric arc welding process that produces an arc between a nonconsumable electrode and the work to be welded. This paper details the study of the mechanical properties of the weldments of Aluminum Alloy during Gas Tungsten Arc Welding(GTAW) process with Non-Pulsed and Pulsed Current Welding at different frequencies. During this process voltage, gas flow rate and weld speed are kept constant. The weld beads were given post weld heat treatment. The mechanical properties like Tensile Strength, % Elongation, 0.2% Yield Strength of Aluminum Alloy have been studied. The main objectives of the work are to study the effects of filler materials and welding current, penetration of weld beads, tensile properties and the microstructural characteristics of weld beads. Non-destructive and Destructive tests have been conducted on the weldments of Aluminum Alloy. These results have been compared with other specimens, which are welded at Non-pulsed and at different pulsed current welding. To improve the mechanical integrity of the weldments, the Microstructures of the weld Fusion zone (FZ) and Heat Affected Zone (HAZ) are studied and are compared at various currents.

Keywords:

Pulsed Current, Tensile properties, Microstructure, Fusion Zone and heat Affected Zone

Comparative Study of Single and Multiple Feature Data Clustering Algorithms for Microarray Image Analysis with Image Enhancement

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Abstract:--

By using Microarray Technology, in a single experiment one can study the function of thousands of genes in parallel. Microarrays are used in various applications like disease diagnosis, drug discovery and bio-medical research. A Microarray image contains thousands of spots and each of the spot contains multiple copies of single DNA sequence. The analysis of microarray image is done in three stages: gridding, segmentation and information extraction. The microarray image analysis takes the spot intensity data as input and produces the spot metrics as output which are used in classification and identification of differently expressed genes. The intensity of each spot indicates the expression level of the particular gene. This paper presents multiple feature clustering algorithms which extend the single feature (pixel intensity) clustering algorithms for segmentation of microarray image. The qualitative and quantitative results shows that multiple feature clustering algorithms are more efficient than single feature clustering algorithms in segmenting the spot area, thus producing more accurate expression-ratio.

Keywords: --

Microarray, Image Processing, Image Segmentation, Clustering Algorithms

Attendance Management System Using Face Recognition

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Abstract:--

The genus Hypericum is a large genus of herbs or shrubs with more than 450 species dispersed worldwide. The plants grow generally in temperate regions and are used in traditional medicine in many parts of the world. In this study, antioxidant activity of petroleum ether, benzene, ethyl acetate, methanol and ethanol extract of bark of Hypericum mysorense was determined. Antioxidant activity was evaluated using four different reactive oxygen species (ROS) scavenging assays containing DPPH (1,1-diphenyl-2-pricrylhydrazyl) free radical, hydroxyl radical, superoxide anion, ABTS radical and reducing power assay. Ethanol extract of Hypericum mysorense (800µg/ml) exhibited the maximum DPPH (113.64%) and Superoxide (113.27%) radical scavenging activity. Methanol extracts showed higher Hydroxyl (106.31%) and ABTS (116.22%) radical scavenging activity. It also exhibited higher reducing activity. Hence, these extracts could be considered as natural antioxidants and may be useful for treating diseases arising from oxidative deterioration.

Keywords:

Hypericum mysorense bark, DPPH, free radical, reducing power.

State Estimation for Diode-Clamped Multi-level Inverter Fed Induction Motor Drive Using Discrete-time Extended Kalman Filter

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Abstract:--

Three phase induction motors are extensively used in industrial applications. Now-a-days, energy efficient high power rated electrical drives are attracted by industries. Multi-level inverter fed induction motor drives provide a good solution for energy efficient drives. In multi-level inverters due complexity of switching patterns, there is more chance of fault occurring situations. For incipient fault detection, model based methods are gaining importance now-a days. In this paper, state estimation for Diode-clamped five-level inverter fed induction motor using derivative-free extended Kalman filter is presented. With ready available current sensors, the proposed method is very effective for estimating dynamic behaviour of the induction motor drive. The proposed method is very effective for accurate fault detection. Computer simulations are carried out for 5 hp four-pole squirrel-cage induction motor using Matlab/Simulink. The results show the advantage of the proposed technique in realistic applications.

Key Words:

Extended Kalman filter (EKF), multi-level inverter, induction motor (IM).

Real Time Implementation and Validation of Lean Implementation Model for Sustainability (LIMS) in Medium Scale Industry

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Abstract:--

Lean manufacturing is a strategic tool, which is used to cut down waste and to improve the efficiency of an organization and helps the organization to sustain in the competitive environment. Implementation of lean systems in organization results in reduce energy consumption, waste generation, and hazardous materials used while also building the companies' images as socially responsible organizations. Several research efforts discussed in the literature indicate that lean companies show significant environmental improvements by being more resource and energy efficient. Lean systems are associated with waste reduction techniques. In foreign, many industries have started implementing these concepts and they are getting good results. In India, companies are facing problems in implementing lean concept. Critical success factors for lean system implementation in Indian medium scale manufacturing industries has been identified to overcome it. The factors are grouped into different levels by Interpretive Structural Modelling (ISM). A lean implementation model has been developed for medium scale industry and named as 'LIMS'. This paper investigates the implementation and validation of the LIMS through the real time implementation in a medium scale industry.

Keywords:--

Lean manufacturing, ISM, LIMS, Critical Success Factor (CSF).

Oscillatory convection in a rotating fluid layer under gravity modulation

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Abstract:--

A study of thermal instability driven by buoyancy force is carried out in an initially quiescent infinitely extended horizontal rotating fluid layer. The time periodic gravity field is considered and its effect on the system has been investigated. A weakly nonlinear stability analysis is performed for the oscillatory mode of convection, and heat transport in terms of the Nusselt number, which is governed by the complex non-autonomous Ginzburg-Landau equation, is calculated. The influence of external controlling parameters like amplitude and frequency of modulation on heat transfer has been investigated. For lower values of Pr<1 oscillatory mode of instabilities are possible. The duel effect of rotation on the system for oscillatory mode of convection either is to stabilize or destabilize the system has been found. Further, the study establishes that the heat transport can be controlled effectively by a mechanism that is external to the system. Finally oscillatory mode of convection strengthen the heat transfer rather than stationary mode.

Keywords:--

Oscillatory convection; Gravity modulation; Weak nonlinear stability; Rotating fluid layer.

Influence of Boundary Layer Separation in Pervaporation Separation Systems: Modelling and Simulation

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Abstract:--

The rapid industrialization over the decades has resulted in environmental pollution. Water pollution is one of the major challenges that is being encountered globally. So the treatment of wastewater has gained major attention as water is one the primary requirements for life. The water coming from the chemical industries contains the volatile organic compounds (Toluene, Phenol, ether etc.,) which is contaminating even the ground waters. Removal of volatile organic compounds (VOCs) using conventional technologies like air stripping and adsorption with activated carbon are not economically viable. Removal of VOCs using membrane separation processes has grabbed more attention. The mathematical model was formulated to simulate the performance of hollow fiber module for pervaporative separation of toluene and 1,1,1-trichloroethane. The performance equation for the entire module was derived by simplifying the mass, momentum and energy balance on both the feed and the permeate sides. So the present work focuses on influence of boundary layer separation in pervaporation separation system of toluene and 1,1,1-trichloroethane.From the results it was found that for all VOCs are resisted at the liquid phase boundary layer only.

Keywords:

VOCs, Pervaporation, hydrophobic membrane.

Hardware Realization of Dvr with 27 Level Multi Carrier Pwm Based Mli

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Abstract:--

The quality of the electrical power delivered to consumers is heavily affected by the power electronics based controllers, introduced in both domestic and industrial sectors which in turn results in malfunctioning of equipment or eventual damage. Series compensators, Shunt compensators and series-shunt compensators are some of the strategies applied to address the power quality issues effectively. In this work a series compensating device, viz. 27 level cascaded multilevel inverter based Dynamic Voltage Restorer (DVR) with multicarrier SPWM technique is proposed to mitigate voltage swells and voltage sags. The PWM technique used in this work is Alternate Phase Opposition PWM (APODPWM), which is one of the vertical arrangement multicarrier sinusoidal pulse width modulation techniques, to control the cascaded H-bridge inverter. The single-phase version of the proposed system is simulated to verify the effectiveness in addressing voltage issues and it is found that the obtained simulation results are satisfactory. The THD is found to be 3.40%, which is well below IEEE standards apart from considerable improvement in response time. The prototype of the proposed model is developed and the pic-microcontroller PIC16F887 is employed to implement the APODPWM. The experimental results obtained from the prototype are compared with the respective simulation results and they match with reasonable accuracy.

Keywords:--

Multi Level Inverter (MLI), Alternate Phase Opposition Disposition Pulse Width Modulation (APODPWM), Dynamic Voltage Restorer (DVR), Sinusoidal Pulse Width Modulation (SPWM).

Heat transport in a porous medium saturated with variable Viscosity under the effects of thermal modulation and internal heating

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Abstract:--

The effects of temperature dependent viscosity, internal heat source, temperature modulation and thermo-mechanical anisotropy on heat transport in a low-porosity medium are studied using the Ginzburg-Landau model. The amplitudes of temperature modulation at both the boundaries are considered to be very small and the disturbances are expanded in terms of power series of amplitude of convection. A weak non$-$linear stability analysis has been performed for the stationary mode of convection, and heat transport in terms of the Nusselt number, which is governed by the non$-$autonomous Ginzburg-Landau equation, is calculated. The effects of thermo-rheological parameter, internal Rayleigh number, amplitude and frequency of modulation, thermo$-$mechanical anisotropies and Darcy-Prandtl number on heat transport have been analyzed and depicted graphically. It is found that increments in the values of thermorheological parameter and internal Rayleigh number result in enhancement of heat transport in the system. Further, temperature modulation can be used to controlled the heat transport effectively by a mechanism that is external to the system.

Keywords:--

Ginzburg-Landau model, Temperature modulation, Anisotropic Porous media Temperature-dependent viscosity, Internal heating.

A Contemplate Report on Clustering Evaluation and Nonlinear Clustering in High-Dimensional data

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Abstract:--

Every day people use large volumes of data, for future purpose data can be classified into different categories such as clusters. The main intension of the cluster is to divide unlabeled finite dataset in to different set of structures. Distribution of clusters classified into linearly independent clustering and non- linearly independent clustering. Non-linear independent clustering means at least one group with rounded boundaries or of arbitary figures. Many clustering algorithms don't calculate approximately interior clusters. Several indexes used and planned for different Scenarios. There is no combining procedure for cluster assessment. We reconsider the existing clustering quality process and measure is difficult context designed for high-dimensional clustering. Dimensionality affect dissimilar clustering value indexes in dissimilar modes; few are preferred, to establish clustering quality in several ways. We are discuss in this paper, clustering evaluation, internal criteria, cluster quality indices, comparison of various clustering algorithms, problems in analyzing high dimensional data, clustering techniques for high dimensional data and perspectives and future directions.

Keywords:

Linear clustering, Non- linear clustering, high-dimensional data, hubness, data clustering, cluster indexes, internal indices, external indices, distance concentration.

Survey on Multi Channel Schemes in Wireless Body Area Network

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Abstract:--

The evolution and empowerment of Wireless Body Area Network (WBAN) is achieved through the rapid advancement in the wireless communication technologies. The use of different kinds of sensors which are utilized in the health care applications for patient monitoring are helped for diagnosis of life threatening disease which can be improved by using WBAN. These wearable systems help in controlling the life of patient's as they play essential role to save patient's life. In recent past, the system architecture is constructed for WBAN for monitoring of health care application and enhancing the technical requirements in a WBAN network. Although, Wireless Body Area Networks (WBAN) is one of the emanate technology which utilizes the patient health condition for monitoring in real time, several issues that are faced by WBAN are Quality of Service (QoS), security, data loss, authentication, channel issues and energy efficiency. Most of the WBANs utilizes wireless channel for process of communication in which these typical sensors with single transceiver device transmits the information with low power by utilizing a single channel using Medium Access Control (MAC) layer in WBAN. However, the degradation in performance of these devices is high when the sensors density is increased. The solution to overcome this performance degradation is carried out by making use of multiple channels, due to which the channels are optimally utilized and the cooperation among the sensor nodes is achieved. In this paper, the survey of different protocols used for WBAN under different channel conditions is discussed in WBANs with its merits.

Keywords:

WBAN, QoS, MAC, BSN, EMRS, DES.

Code-Smells Identification by using PSO Approach

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Abstract:--

Code-smell defines the smells which arise in coding part of the software development life cycle. It is very crucial to detect smells in software projects. If smells are detected earlier then the possibility of occurrence of errors, faults will be reduced. Hence, quality of the software is improved. The existing work used Bayesian approaches, manual approaches and search-based approaches to detect smells. These approaches lack in getting optimization solutions in detecting process. So, paper makes use of one of the popular optimization technique called Particle Swarm Optimization (PSO) for detecting the smells in programming part. The technique shows how intelligently the smells are detected and mainly concentrated on five types of smells namely Long Methods, Long Parameters, Large Classes, Duplicated Codes, and Primitive Obsessions. Implementation of this technique is, considering source-code of any software applications or programs and injecting PSO technique into the system. Here, PSO has trained to detect five types of smells whenever their appear in the source-code. Detecting the smells in initial stages of the project gives best performance of the software, and in other hand quality of the software is achieved. Experimental results are shown by using PSO technique, where searching time will be less consumed and accuracy of the system is gained.

Keywords:-

Code-Smells, Duplicated Codes, Software Quality, PSO.

Varying Operating Frequency of Concentric Circular Ring Patch Antenna using High Impedance Surface

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Abstract:--

in this paper, we design a concentric circular patch antenna excited by microstrip feed and operates at 5.4269 GHz and 6.9419 GHz. After designing the antenna we would like to tune the frequency without changing antenna size. For that purpose we use high impedance surface structure to tune the antenna at two different frequencies. A simple mushroom like structure is used as high impedance surface. We will analyze antenna parameters like return loss, gain, directivity, radiation patterns, efficiency, proposed antenna with and without high impedance surfaces and compare the results.

Keywords—

Metasurfaces,tuning, concentric circular ring patch,strip feed

Evaluation of Pitch Estimation in Clean and Noisy Speech

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Abstract:--

Every human being has a distinct voice due to pitch association and it is almost like a finger print. Pitch is one of the important parameter which is used in many speech processing applications. In reality speech is a complex combination of both voiced and unvoiced sounds and cannot be separated subjectively. For the voiced speech, pitch is defined as the rate of change of vocal folds vibrations. In practice, pitch is a subjective quantity and cannot be measured directly from the voice. It is a non-linear quantity, depends upon the spectral and temporal content of the signal. Many pitch estimation methods have been developed but none can work efficiently in the presence of additive noise. It is very essential to understand the effect of noise on the pitch estimation in dealing effectively with many speech processing applications. Speech processing systems should be robust enough to counter the presence of noise to produce good quality sounds. In non-intrusive speech quality measurement algorithms, pitch is one of the quality parameter for speech assessment. The accuracy of this feature in noisy speech is correlated with the subjective quality of speech. In this paper we have been evaluated the performance of auto-correlation and cepstrum algorithms for pitch estimation and tracking.

Keywords:

Auto-correlation, Cepstrum, Pitch, Speech Processing.

An Efficient Low-Bit Rate CELP Speech Coding Algorithm

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Abstract:--

Voice communication is one of the easiest and natural methods of communication between human beings. In recent times it became popular because of mobile communications. It contains information as well as personal information such as age, identity, emotions etc. The requirement for efficient coding method is still a research topic for noise environment. Speech coding technique reduces the bandwidth requirements and storage space for speech data. Efficient coding method helps to reduce the bit rate and at the same time keep the speech quality and intelligibility at reasonable rate. Many speech coders have been developed to compress effectively and to ensure optimized performance to the human ear. Service providers of mobile phone communications are looking for low bit rate coders to allocate more number of users in limited bandwidth. In this paper a mixed coding method i.e. Code Exited Linear Prediction (CELP) is implemented on noise free speech signals using MATLAB. With this more exact modeling of spectral zeros is possible compared to the linear predictive coding (LPC). Subjective tests indicated that the coder at 16kbps and 9.6kbps achieves a significant improvement in performance over LPC coder under the same coding framework and bit allocation.

Key words:

Linear Prediction, Code-Exited Linear Prediction, Speech Coding, Bit-Rate.

Multipurpose Watermarking Based on Hybrid Strategies

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Abstract:--

Dual digital watermarking has emerged as a successful solution for copyright protection, tamper detection and localization. However, several problems related to the robustness, capacity, tampered area detection still mystifying. This paper presents a high capacity dual watermarking mechanism for digital colour images. An invisible robust watermark is embedded in the Green component of the host image by using a hybrid combination of Stationary Wavelet Transform (SWT) and Singular Value Decomposition (SVD) for copyright protection. A fragile invisible watermark based on the Least Significant Bit (LSB) replacement approach is embedded in the Blue composition of the image for tamper detection and localization. The proposed technique focuses on robustness and imperceptibility while maximizing embedding capacity that makes this technique a multipurpose watermarking scheme.

Keywords:

Digital Watermarking, Stationary Wavelet Transform (SWT), Singular Value Decomposition (SVD), the Least Significant Bit (LSB).

Design of Plastic Component Using Reverse Engineering Approach

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Abstract:--

The Reverse Engineering (RE) technique for the design of plastic components of money counting machine using articulated laser scanner and CatiaV5 is presented. Initially it is physically digitized to generate point cloud data with the help of a scanner through scanning and is exported to CAD software CatiaV5. Thus, this paper describes the processes of RE of plastic component from object digitization and analyze the error to reconstruct the CAD model. To study the behaviour of the component, the analysis has been performed with stress distribution, factor of safety and displacement of modified plastic component with existing one at minimum to maximum loads.

Keywords—

Reverse Engineering, plastic component, laser scanner.

Novel Design of Multiplexer and Demultiplexer Using Reversible Logic Gates

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Abstract:--

In recent years reversibility is gaining more importance due to its low heat dissipation. In this paper a new reversible gate is proposed, and named as RAMESH gate. The gate is used in the demultiplexer design. The multiplexer is designed using QCA gate and SAM gate. These designs are implemented and simulated using Xilinx ISE 12.1 and mentor graphics tool. The results show that the proposed designs are more efficient in terms of gate count, quantum cost and power consumption.

Keywords:--

Reversible Logic Gates, Multiplexer, De-Multiplexer, Quantum Cost, VLSI)

Microstrip Feed Monopole Circle to Circle Fractal Antenna for Multiband Applications

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V R Anitha, Professor, Rayalaseema University.

Abstract:--

In this paper, introduced monopole circle to circle fractal based antenna for multiband applications fed by microstrip line. The FR-4 substrate and copper material used in this proposed design. This is operated in between the 6-20GHz frequency band and achieves 8 resonant frequencies and also used for C/X/Ku/K band applications i.e., multiband applications. The Computer simulation technology software is used for design and discussed the general results of antenna-like reflection coefficient, VSWR, Gain, Radiation Pattern and efficiencies and dimensions of a proposed structure is 26mm x30mm x1.6mm.

Index Terms:--

CST software, Fractal antenna, Microstrip, Multiband applications.

A Liquid Core ARROW Waveguide Structures for Biomedical Application

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Abstract:--

A liquid Core Anti Resonant Reflecting Optical Waveguide (ARROW) based devices are innovative equipment's in the Lab-On-a-Chip (LOC) applications. An ARROW is used to guide the light with low optical loss and using the concept of thin film interference technology. The study and simulation of ARROW structure is discussed in this paper. The advantage of ARROW waveguide compared to conventional waveguide makes the structure as fundamental element in the development of opto-fluidic biosensor. The simulated waveguide structure yields low loss at fundamental mode for 635nm wavelength, further these simulated devices can be fabricated and used as sensor in biomedical application.

Keywords:

ARROW, Lab-On-a-Chip (LOC), Liquid core ARROW (LCA) structure, thin film, refractive index

GA Based Lossless and Robust Image Watermarking Using NBP-IWT-DCT-SVD Transforms

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Abstract:--

To enhance the robustness and imperceptibility, this paper introduces image watermarking algorithm using hybrid transforms (NBP-IWT-DCT-SVD). In this scheme the singular values of watermark are embedded into the singular values of host image and the Normalization process (NBP) is used to obtain the invariant features. After it is subjected to IWT followed by DCT and SVD for effectively resisting the attacks.GA is used to select the scaling factor for embedding and extraction. This approach used Integer Wavelet Transform (IWT) instead of conventional transform like DWT to avoid round of error while compression. Several experiments are conducted over the proposed approach to test the performance. The obtained results gives that the proposed approach is better than the conventional approach and is able to provide efficient resistance over Gaussian noise, Speckle noise, median filtering, salt & pepper noise, rotation, cropping, shifting, JPEG compression and histogram equalization attacks.

Keywords:--

Image watermarking, IWT, DCT, SVD, GA, PSNR, NC.

High Performance Multilayer Transformer for RF Applications

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Abstract:--

In this paper, multilayer on-chip transformer is proposed to enhance the operation of device in terms of primary quality factor, primary inductance, coupling coefficient and self-resonant frequency. Multilayer transformer is designed by considering the multilevel fabrication concept in RF-VLSI. The demand for miniature on-chip passive components is increased due to the advancement in RF-VLSI design process. The proposed multilayer on-chip transformer is simulated using High Frequency Structural Simulator and the results are compared with conventional planar transformer. The proposed multilayer transformer shows 40% improvement in terms of primary quality factor, 15% improvement in terms of primary inductance and 20% improvement in terms of coupling coefficient when compared to conventional planar transformer. Proposed transformer performance is validated by scaling up the dimensions of transformer from μm scale to mm scale and fabricating the transformer on FR4 substrate using PCB fabrication techniques. Measurements of fabricated transformer are carried out using vector network analyser 8719A. Simulated results and experimental results are in good agreement in terms of quality factor, inductance and coupling coefficient. The proposed multilayer transformer is designed using 0.18 μm RF-VLSI technology and has an on-chip area of 100 μm × 100 μm making it compatible for RF integrated circuit (RFIC).

Keywords:

Coupling Coefficient, Inductance, On-chip inductor, Quality factor, RFICs.

Iot Based Advanced Black Box with Accident Detection And Location Tracing with Engine Auto Engine Turn Off

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Abstract:--

In this system, Intelligent method to collect the accident or safety information using the widespread black box system. Conventionally, when information is needed after an accident or crime happened, investigators seek for possible clues non-systematically by hand. We propose a systematic method of gathering that information using an intelligent black box system which analyzes and gathers information while driving. In addition to this, whenever the vehicle meets with accident, the accident switch attached to the controller gates pressed and immediately sends location of the vehicle with longitude and latitude to the registered phone numbers of family which are feed in the system. This helps in taking immediate action when accident occurs. The location of the vehicle traced through GPS and the traced data is saved in the SD card where this system acts as block box for a vehicle as well as. A user can find his vehicle location just by sending SMS to it if it got theft, the user ca turn off the engine anywhere from the world just by sending SMS using preferred match word. This Entire data can be monitored using NODEMCU on the webpage.

Keywords:--

AVR , GSM, GPS, LCD, SD card, Accident switch, Node MC

Merit Factor Analysis of Polyphase Sequences using Cyclic Algorithm-New with Good Correlation Properties

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Abstract:--

Polyphase sequences such as Pn (n=1, 2, 3, 4, x), Golomb, Frank, and the Chu are with good correlation properties, lower sidelobe levels and large merit factor values are helpful in applications like radar, sonar and channel estimation and communications. The goodness of a sequence obtained from merit factor. The transmitted and received signal may not be the same due to noise. The correlation function of given sequence is expressed by ISL (Integrated Sidelobe Level) by minimizing the ISL metrics the performance parameter merit factor gets improved. To make this possible the ISL metric is expressed in the frequency domain and minimized to its most recent values and fixing at their most recent value until the predefined threshold satisfied. Because of FFT operations, the Cyclic Algorithm New applied to very long length sequences say $N\sim10^6$. In this paper, the Merit factor and correlation levels compared with standard, and cyclic algorithm new initialized with Polyphase sequences for lengths $10^2\sim10^4$. Moreover, the observations made for four consecutive even and odd integer lengths say 16^2, 17^2, 18^2, and 19^2. CAN (P3) exhibits merit factor improvement of 3.77%. All design metrics for standard and Cyclic Algorithm-New implemented on MATLAB.

Keywords:--

Polyphase sequences, Merit Factor, correlation level, Cyclic Algorithm-New, Integrated Sidelobe Level.

Effective approach to crawl Web Interfaces using A Two Stage Framework of Crawler

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Abstract:--

Nowadays, internet is important part of our life. User can explore answer to different queries according to his requirement using internet. The nature of these web resources is dynamic and they are present in huge amount. So it becomes challenge to search quality results of required query efficiently as well as personalized search is also a major challenge in Information retrieval. To handle these challenges, a two-stage framework of web crawler is proposed. In first stage, crawler performs "Reverse searching" that matches user searched query with the URL of link from site database. In second stage, crawler performs "Incremental prioritizing" that matches the searched query content with web document. Then crawler classifies relevant and irrelevant pages according to match frequency of searched keyword and ranks these pages. Proposed crawler performs searching through personalized searching according to user point of interest which is based on profession profile of user. The crawler performs the domain classification which helps user to know the contribution of standard resources of searched query. A separate log file is maintained by crawler considering the issue of searching time. While entering cursor in search box, user will get pre-query result based on past search results. Our objective is to design a Focused Crawler to effectively search the site database and provide quality result to the user.

Keywords:--

Focused Crawler, Incremental prioritizing, Information Retrieval, Reverse searching, Web Crawler.

ECBP: An Energy Efficient Cross layer Cluster Based Routing Protocol for Improved Multimedia Data Dissemination in VANETs

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Abstract:--

Vehicular Ad hoc network (VANET) is an infrastructure less decentralized dynamic network, offers safety and multimedia applications. To strengthen these services, VANET demands networking of high data packets among fast moving vehicles with less link breaks. In this paper, "An Energy Efficient Cross layer Cluster Based Routing Protocol (ECBP) for Improved Multimedia Data Dissemination in VANETs" is proposed. Design of ECBP with energy efficient is achieved by considering (i) mobility metrics such as Residual distance and Relative velocity to group the vehicles into clusters reduces unnecessary flooding of control beacons (ii) Neighborhood knowledge, identifies adaptive relay vehicle reduces delay. Simulation results using Network Simulator (NS) -2.34 indicate that the proposed ECBP improves throughput of multimedia data with reduced energy consumption for different vehicle density in comparison with existing VANET cross layer based routing approach.

Key words:

VANETS, Cross Layer, Multimedia applications, Reliability.

Analysis of time overruns in roads and highways sector in India using using AHP ranking technique

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Ankur Mittal, University of Petroleum and Energy Studies (UPES), Dehradun - India

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Abstract:--

In today's scenario there will be a competition exists among various construction firm, so the risk management come into picture to assess the various risk related to project. Assigning the right severity factor as per the possibility of occurrence will impart the success of organization as well as success will impart the growth of nation with increase in G.D.P. In construction of road the assessment of right severity factor, will be considered as strength to lower down the delay of time over run. Tremendous amount of effort are applied in quantitative and qualitative manner for assessment of risk severity factor. However, many criteria for risk severity factor enable the decision making methods facilitate the process of finding a solution and enable decision makers to reach the right decisions. Decision-making problems require systematic approach to evaluate alternatives using both quantitative and non quantitative factors. Standard methods to solve problems lack considerations of non-quantitative factors, in which numeric value is difficult to assign. Different techniques like, Analytic Hierarchy Process (AHP), Multi Criteria Decision and Fuzzy set theory Making are presently being used in risk severity factor. These techniques take many factors with concrete values or vague values. This research provides solution to a risk severity factor of budget allocation problem, to allocate funds to deserving and competing organizations by using integrated AHP, MCDM and Fuzzy techniques. Weights are calculated using Fuzzy set theory and AHP. Fuzzy set takes subjective values like preferred, strongly preferred etc. and AHP technique evaluates relative importance of factors by forming pair wise comparison matrix. Experts in this domain were consulted to give their opinion. The evaluation technique will help in ranking of various severity factors according to their possibility of occurrence after assigning weights to decision making factor.

Key words:

AHP (Analytical Hierarchy process), MCDM (multi criteria decision making approach), Ranking and Severity analysis.

Review on Authentication Mechanisms in Cloud Computing

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Abstract:--

Cloud computing is one of the most significant revolutionary technologies that provide services from computing infrastructures, applications, and platforms to customers for their personal coalition whenever and wherever needed. Security is considered to be the most important key component in the challenges of cloud computing field. This work discusses about the first level key challenges of security-Authentication. Many authentication schemes have been proposed earlier. But all those schemes work as an entry level for service requisition. When the consumers face any problems during the service availability, then both the consumers and service providers need a quick outlook to the SLA. Based on the severity level of the issue, the service providers need permission to access the service area rented by the consumer. This work provides the critics and reviews of authentication mechanisms that have been carried out earlier. In addition, it also provides an overview of authentication mechanisms carried out by service providers and a comparison of various authentication mechanisms has been discussed.

keywords-

Authentication mechanisms, cloud computing , Mutual Authentication scheme, security issues

Geotechnical and Geological Investigation of Landslide in Western Ghat of Maharashtra, India

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Abstract:--

The problem of landslide is severe in Western ghat of Maharashtra mostly due to the topography, human interference, heavy rainfall etc. Upland region of Deccan Volcanic Provinces (DVP) is considered as a most vulnerable region for landslides activity in Maharashtra state of India. The area shows thick flows of the Deccan Trap basalt of Upper Cretaceous to Eocene age. State Highway -70 is the lifeline of the Pune District and Raigarh District of Konkan. The part of the highway between Bhor and Mahad is highly landslide prone and frequently blocked during rainy season. Considering the importance of SH-70, landslide susceptibility zonation studies along SH-70 between Bhor and Mahad were carried out. The landslide susceptibility study gives an overall idea of the stability condition of the slopes of hill so it can be used for planning any further construction activity and remedial measures. A detailed exploration was carried out along the road section started from Bhor city, and it extended up to the Mahad, in Konkan region. Paper discusses the geological, geotechnical investigation of the area. The remedial measures are suggested to minimize the severity of landslide.

Keywords:--

Deccan Trap, Geotechnical, Konkan, Landslide, Western Ghat.

Realization and Synthesis of 4 - bit Universal Shift register using Logical Reversible Computation in Xilinx

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Abstract:--

Reversible Logic is the dominating field of research in low power VLSI. In recent times reversible logic has gained special attention in order to reduce power consumption mainly in concern to digital logic design. The main aim of this paper is to realize and synthesize universal shift register using reversible logic. Universal shift register is a sequential circuit that performs all the shift operations depending upon the selection lines. Different shifting operations performed using universal shift register are Shift left operation, shift right operation, parallel loading operation and no change operation. These operations are performed by the intervention of multiplexer circuit which helps to select the mode of operation to be performed. Hence a multiplexer is also designed using reversible logic to reduce power dissipation. Shift registers has their applications in data conversions like serial to parallel and parallel to serial conversions. A Boolean function f(i_1, i_2, i_3,……, in) having 'n' inputs and 'm' outputs is said to be logically reversible if the number of inputs are equal to the number of outputs(i.e. n = m) and the input pattern maps uniquely to the output pattern. Few reversible logic gates present in the literature are NOT gate, Feynman Gate (CNOT gate), Double Feynman Gate, Peres Gate, TR gate, Seynman Gate etc. The reversible gate must run both forward and backward directions such that the inputs can be retrieved with the knowledge of outputs. The two limitations of logical reversibility is Fan-out and Feed-back are not allowed. Signals from required output lines are duplicated to desired lines using additional reversible combinational circuits to overcome the Fan out limitation. Reversible Logic has applications in various fields like Quantum Computing, Optical Computing, Nano-technology, Computer Graphics, low power VLSI etc., Reversible logic has gained essence in recent years largely due to its property of low power consumption and low power dissipation. In this paper, shift registers like shift right register, shift left register and universal shift registers which has less heat dissipation and low power consumption is proposed. The designed circuit is analyzed in terms of quantum cost, garbage outputs and number of gates. The Circuit has been designed and simulated using Xilinx software.

Key words:

Reversible logic, shift registers, universal shift registers, quantum cost, garbage outputs.

Modified Merit Factor Analysis of Polyphase sequences using Weighted Cyclic Algorithm New (WeCAN) with Good Correlation Properties

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P Rajesh Kumar, Professor and Chairman BoS, Department of ECE, AUCE(A), Andhra University, Visakhapatnam, India.

Abstract:--

In radar, sonar, channel estimation, and communications Polyphase sequences Pn (n=1, 2, 3, 4, x), Golomb, Frank, and the Chu are with good correlation properties and having lower sidelobe levels and large MF (merit factor) or MMF(modified merit factor) values are helpful. MMF is same as MF but when weights are applied. The goodness of a sequence estimated from MF or MMF. The transmitted and received signal may not be the same due to noise. The correlation function of a given sequence is expressed by ISL (Integrated Sidelobe Level-in case of MF) by minimizing the ISL metrics the MF gets improved. However, WISL can reduce the correlation levels for a region of interest. To make this possible the WISL metric is expressed in the frequency domain and minimized to its most recent values and fixing at their most recent value until the predefined threshold satisfied.. In this paper, the MMF and correlation levels are compared with standard, and Weighted cyclic algorithm New (WeCAN) initialized with Polyphase sequences for lengths 102~104. Moreover, the observations are made for four consecutive even and odd integer lengths say 162, 172, 182, and 192. Because of FFT operations, the Weighted Cyclic Algorithm New initialized with Polyphase sequences exhibit the excellent MMF values. All the implementation is done on MATLAB.

Keywords:

Polyphase sequences, Merit factor, correlation level, Weighted Cyclic Algorithm-New, Integrated sidelobe level.

Ergodic Sum Rate of Transmitting Antenna Selection in Non-orthogonal Multiple Access in Modern Systems

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Abstract:--

Wireless systems hiring multiple antennas at the transmitter side used for the transmission of the high capacity information through the channels making the system more complex and costlier. To overcome these problems, the multiple antennas at the transmitter side must be reduced and the performance should retained with reduced antennas as earlier. This can be achieved by using the algorithm Transmitting Antenna Selection (TAS) which is carried out by considering the transmission of the information through the channels using the Non- Orthogonal Multiple Access (NOMA). The NOMA algorithm is used to provide the high throughput using the heterogeneous demands in which there is no interference between the transmitted signals from the multiple antennas equipped in a single base station. TAS-NOMA algorithm is proposed in this paper for selecting the best transmitting antenna out of multiple antennas equipped in the base station by using the Ergodic sum rate which is measured at the transmitter side considering the average of the channels capacity.

Keywords:--

TAS-NOMA, Ergodic sum rate, channel capacity, multiple antennas.

Study on Effect of Thermal Cycles on Strength Properties of SCC

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Abstract:--

The effect of sustained temperature on the properties of concrete is important for fire resistance studies. The fire remains one of the most serious potentials hazardous to any building. The main objective of this study was to conduct an exploratory work towards the development of a suitable SCC mix design using local aggregates and to evaluate the performance of the selected SCC mix under thermal variations. Trials mixes using Okamura method of mix design were carried out for the 4 different mix proportions to achieve the final mixes which satisfy all the workability properties. The specimens were cast and cured for 7 & 28 days. Considering the specimens cured for 7 & 28 days as a reference, specimens were subjected to the requisite number of thermal cycles at two different temperatures as 1000C & 1200C. Variation in weight of the specimen after the requisite number of thermal cycles was recorded, then the compressive strength & split tensile strength of thermally treated concrete specimens was determined. The result shows a relative decrease in the strength of thermally treated each specimen as compared to its original strength before heating. The replacement of ordinary Portland cement by mineral admixtures in concrete caused an increase in strength as compared to control mix. The replacements of OPC by Micro Silica have shown the highest strength and fly ash mix shown least strength in this experimental work.

Keywords:--

Self Compacting Concrete, Fly Ash, GGBS, Micro Silica, Elevated Temperature, Compressive Strength, Split Tensile strength.

A Versatile Communication Approach between Autonomous Vehicles in Dynamic Environment.

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Abstract:--

The current state-of-the-art in wireless communication technology is within vehicles as well as between vehicles.Different concepts associated with radio frequency bands and wave propagation simulations are applied to inter-vehicle communication analysis. The Medium Access Control (MAC) layer protocols used for routing in inter-vehicle communication. Security issues associated with inter-vehicle communication are reviewed.In Proposed communication techniques The push buttons switches are arranged inside the car where the driver presses the buttons, which notify whether the route is busy or not. This data is broadcasted over the internet using node MCU to the other available driver in the next route whether to choose this road are not. In this system ambulance can directly communicate with other vehicles on its route. Within the range of ten meter, ambulance sends the signal to nearest vehicles make drivers to be alert and give the possible way to the ambulance. Communication between the ambulance and vehicles takes place using RF with Microcontroller which is helpful to driver to check the best route, and avoids the Accidental Area.The proposed technique is simulated in keil Micro vision software and implemented on ATMEGA 328.

Keywords:--

AVR, Node MCU, Push buttons, RF Transmitter, RF Receiver

JANANEE JANMABHOOMISCHA: ICT Solutions for Pronational Digital Society

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Abstract:--

'Personality Development', 'Social Development', 'National Development', 'National Spirit', 'National Amity', 'Nation Building Character', 'National Consciousness', 'National Solidarity', 'National Awareness', 'National Integration', 'National Sovereignty', 'National Integrity', and 'National Unity' are the diminishing ideas among the citizens of a country now-a-days. Opportunities for cybercrimes worsen this situation further by luring the people with bad motivations, some who justify the cybercrimes somehow and some to perpetrate the cybercrimes. As the public authorities are not capable enough to handle cybercrime cases well as of now or due to lacunae in cyber laws, cyber criminals are evading and sweeping under the carpet. The societal status, may it be progressive or perishable depends on the kind of information that is provided to the people of society. If society is input with right information, the society will progress, develop positively and on the other hand the society will perish with the wrong or garbage information. In this context, Right-To-Information (RTI) Act 2005 plays a vital role by providing 'Right Information' through 'Information Transparency'. We found out an organization named JNTUHJAC (offline) with its website with URL- www.jntuhjac.com (online) running from so many years, committed three or more cybercrimes against the Union of India. We considered this online and offline organization for our case study and for discussions of our solutions for these cybercrimes. In this paper, we proposed a research methodology based on Information and Communication Technology (ICT) approaches to prevent the conversion of Cybercrime or Ill-Informed Society into perishable society and hence hope to succeed in transforming Cybercrime or Ill-Informed Society into Well-Informed Society and hence into a "Progressive Society/Knowledge Society/Digital Society".

Keywords:--

Government-of-Telangana (GoT), State Emblem of India (Prohibition of Improper Use) Act 2005 (SEIPIUA), Fake Government-of-Telangana (FGoT), Cheating Government-of-Telangana (CGoT), Seditious Government-of-Telangana (SGoT), GoT whose appointed day is 2Jun 2014 after the Parliament passed the A.P. Reorganization Bill (PGoT), Cybercrime, Information and Communication Technologies (ICTs), Public Information Authority (PIO), Right-To-Information (RTI) Act 2005.

A Study on Effect of Process Parameters on Quality using Low Cost 3D Printer

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Abstract:--

Fused deposition modeling is a type of layered additive manufacturing technology in which parts are built by heating a thermoplastic filament above its melting point. The modern low cost 3D printers are based on this technology. This paper examines the effect of process parameters on the quality of parts produced using ABS (Acrylonitrile-Butadiene Styrene) material. A statistical design of experiments approach, using the central composite design, was used with the process parameters of layer thickness, speed of deposition and extrusion temperature, to quantitatively model their effect on the quality of the resulting parts produced. It was found that layer thickness and speed of deposition had significant effect on quality of parts produced.

Keywords:--

Acrylonitrile-Butadiene Styrene (ABS), Central Composite Design (CCD), Extrusion temperature, Fused Deposition Modeling (FDM), Rapid Prototyping, 3D Printer, Layer thickness, Speed of Deposition.

Energy Management on Grid Connected Hybrid Renewable Energy Sources Using Fuzzy Logic

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Abstract:--
Renewable energy, such as wind, solar energy, is desirable for power generation due to their unlimited existence and environmental friendly nature. This paper deals with system integration and fuzzy logic based controller design for power management of a grid connection hybrid renewable energy source, (HRES). The hybrid system is the combination of photovoltaic (PV) array, wind turbines, and battery storage via a common current source interface multiple input dc convertor. This convertor is used to integrate the renewable energy sources to the utility grid.A two level control system is implemented, comprising a Fuzzy logic Controller, which ensures the power management.

Keywords
Renewable energy, Photovoltaic, Fuzzy logic controller, hybrid renewable energy source, power management

"Wear and Compression Behavior Study of Carbon Nanotube in Aluminium Nanocomposites"

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Abstract:--

In this study, carbon nanotube (CNT) reinforced in aluminium (Al) matrix for different weight percentages were fabricated by powder metallurgy (PM). A mechanical mixing process i.e. ball milling which employs mechanical alloying technique and results in effective dispersion of CNTs in aluminium powder was employed and two different ball materials namely tungsten ball and aluminium oxide ball was used for same composition of CNT/Al composites in order to understand different mill ball material effects on mechanical properties of CNT/Al composites. The powder mixtures were consolidated by microwave sintering. The microstructural analysis of both ball milled powder and sintered specimen were carried out where in case of powder samples effective dispersion of CNTs in aluminium powder was observed and in case of solid sintered samples the grain boundaries and bonding between the particles was observed. The wear test, the compression test of CNT and Al composites was carried out. The considered weight percentages varied from 0.5% to 1.3% for both alumina ball milled and tungsten ball milled specimens. The alumina ball milled specimens was observed to have high compressive strength and improved wear behaviour compared to tungsten ball milled specimens but in both cases 1.3 wt. % CNT reinforced samples showed best results. With CNT reinforcement Al grains were refined under the pinning effect of CNTs at grain boundaries. The results proved that the alumina ball milled samples with 1.3 wt. % CNT reinforced composites had improved compression and wear behavior.

Keywords:

MMC's, Aluminium, CNT, Microwave technology, Tribology etc...

Redevelopment of Buildings in Mumbai City: Risks and Challenges

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Abstract:--

In most cities of developing countries, old buildings always tend to undergo redevelopment. There are one or more than one reasons for this. Such as buildings which are in dilapidated condition or uneconomic to repair or tenants are in a need of more usable floor area. This activity of building redevelopment is much visible in Mumbai city for past decade and half. On account of various constraints and considerations, this process of projects of building redevelopment is quite complex. It takes considerable efforts and time to accomplish the projects. If a proper and time bound process is not followed, or if the risks, uncertainties and challenges are not handled properly, even a seemingly simple project can fail, thereby causing great anguish and hardship to the stake holders. Sometimes this may lead to prolonged litigation.

There is a need to identify risks and challenges involved in the process of building redevelopment projects. The aim of researchers is to interact with all the stake holders of building development projects of housing societies and identify various risks and challenges visa-a-vis gains. The study has also revealed various pitfalls and uncertainties related to these projects. This will enable concerned stakeholders to prepare to address these.

Key words:

Challenges, Housing societies, Redevelopment, Risks.

Artificial Neural Network Model Based Optimal Control of a Semi-Batch Copolymerization Reactor

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Abstract:--

Optimal control of polymerization reactors is of immense interest due to the need for operating these reactors optimally to produce a polymer with the desired properties. Most studies on optimal control of polymerization reactors are based on mechanistic models derived from physical theory and the knowledge of polymerization reaction mechanism. However, development of a detailed mechanistic model for a polymerization reactor is difficult due to the complexity of several polymerization reactions, large number of kinetic parameters and poor understanding of the chemical and physical properties of polymer mixtures. To avoid the excessive effort and time associated with the development of detailed mechanistic models, data based models which possess the capability to sufficiently represent the underlying system characteristics with an acceptable accuracy are found promising alternatives to mechanistic models. This work presents artificial neural network (ANN) model based global optimization strategy for optimal control of polymerization reactors. In this strategy, first ANN is configured to represent the dynamic behavior of the polymerization reactor and its performance is validated against the mechanistic model of the reactor. Further, tabu search (TS), a metaheuristic global optimizer via ANN model is designed and implemented to compute the optimal control policies for temperature and monomer addition rate to achieve the desired product quality parameters of a semi-batch styrene-acrylonitrile (SAN) copolymerization reactor. The results are further compared with the ANN model based iterative dynamic programming (IDP) strategy. The comparison of the results demonstrate the better performance of ANN model based TS strategy over ANN model based IDP strategy for optimal control of (SAN) copolymerization reactor.

Index Terms—

Optimal control, polymerization reactor, Tabu search, Iterative dynamic programming

An FPGA Based Autonomous Robot Navigation in Unknown Environment using Grid mapping

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Abstract:--

Assistive robotics can be designed to support the physically disabled persons in numerous ways. They are trying to reinstate human capabilities which has been condensed or lost by accident, at old age or disease. But physically disabled persons facing some troubles in their moments with the existing assisted devices. To give the support for Old age and disabled persons by developing an intelligent Robotic wheel chair, to improve the complex navigation techniques in mobile robotics replacing the existing assisted devices like wheelchair with the automated one. A new algorithm is developed depend onbetter reality which replaces the existing system and improves effective localization with high accuracy.This technique is mainly developed by blob analysis, pattern and color matching. We designed the total prototype on national instruments Robotic starterkit2.0. It is important to design a robot in such a way which avoids obstacles automatically when collision takes place. These types of robotic wheel chairs are very efficient and enable the user to move around easily and also gives the independence to one who have motor disability can easily move without others help.

Keywords:

Intelligent Robot, Blob Analysis, FPGA, Robotic starterkit2.0.

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, 12th & 13th, July 2018

Smart Traffic Management System with Real Time Analysis

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Abstract:--

This paper aims to overcome traffic congestion caused by ineffective traffic management systems that are outdated and work on a predefined countdown. These traditional systems allot timings irrespective of the actual density in traffic on a specific road thereby causing large red light delays. The system we propose ensures traffic lights respond to real time values of traffic, thereby allowing proper management of time and resources. In order to do this we first calculate the density of traffic which is determined using a combination of ultrasonic sensors and image processing techniques. This information is processed by a Raspberry Pi, which in turn controls the traffic light indicators. In addition to that, the data that is collected is sent to the cloud, and can be used to monitor traffic flow at periodic intervals. In case of sensor system failure, the values stored in the cloud will also be useful in predicting the density of traffic based on long term periodic analysis.

Keywords:

Cloud, Image Processing, Raspberry Pi, Traffic Congestion, Ultrasonic Sensors.

When Music and Emotions Meet Machine

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Abstract:--

Perception about music varies person to person. But, what most of them love listening to, is music. The discussion that's exciting is, emotion and cognition go hand in hand in music.Genres like classical, jazz, rock, blues, country, no matter what, people listen, feel and enjoy the essence of it.Surprisingly we can relate music and emotions. Every piece of music is created to convey certain emotions and that is why emotion has been considered a powerful way for accessing music information. Large collection of music is being created and accessed today. To make the user's choice easier, the (MIR) music informational retrieval community has made an effort to train a machine (like computer) to detect the emotion of a music signal. Making a machine identify the emotion of music leads to better interaction between the machine and the user. It is possible to play the music according to the user's mood by detecting the psychological or facial cues. Also, this can be used to sort user's music collection according to their mood with an adjective described. Intensity and quality of musical emotions change overtime.Therefore, various discussions and debates led to research and proposal of data model training and result set according to the user's emotion.

Keywords:--

Music Cognition, Emotions, MIR (Music Information Retrieval) System, Smart Places

Brain MRI Image Segmentation Using Improved Sobel Method

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Abstract:--

Health care applications need correct segmentation on medical images which helps for correct diagnosis. Good quality segmentation can be done only by an efficient method. In this paper we have studied and evaluated three different segmentation techniques. We have presented an improved edge segmentation method for brain MRI images. The improved sobel algorithm makes use of sobel method with closed contour algorithm which will combinely help in maintaining uniformity in the regions. Image dependent method of thresholding helps in closed contour to fix up clear boundaries of different regions in an image. The algorithm is implemented in Matlab and performance is measured subjectively as well as objectively. For comparative analysis, we have used entrophy, correlation and energy of the three segmentations which show improved sobel method is better compared to watershed segmentation and sobel segmentation.

Keywords:

Sobel segmentation, Watershed Segmentation, Improved Sobel Segmentation

Design of RF LNA with Resistive feedback and Gain Peaking for Multi-standard Application

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Abstract:--

Low Noise Amplifier (LNA) for 2.4 GHz is the leading block in RF to enhance the performance of the receiver. LNA used in video applications, satellite communications at RF front end of the receiver. Linearity is one of the key requirements for designing LNA, because LNA must exhibit linear operation in the presence of large interfering signals. Some of the existing techniques which improves linearity are Noise cancellation, Derivative superposition, Modified DS technique, body biasing, optimum gate biasing, MGTR, feed forward. The existing challenge in designing a LNA circuit is to achieve high gain, low noise figure and with low power usage without affecting its linearity. This paper analyses variety of linearization techniques that are used for CMOS Low Noise Amplifier (LNA). The LNA methods include (1) single ended LNA (2) PD-LNA (3) capacitive feedback (4) Current-Reuse. We also proposed a Resistive feedback & Gain Peaking technique for LNA using gated inductor at transistor to obtain high gain with low power consumption. Using variety of linearization techniques, the LNA circuits had been designed at 90nm CMOS technology in cadence virtuoso. The resistive feedback and gain peaking LNA gives a gain of 25.4dB with low power consumption of 3.4mv which is better compared to other existing linearization techniques.

Keywords:--

Low noise amplifier (LNA), noise figure (NF), single ended LNA, resistive feedback, capacitive feedback, post distortion linearization technique (PD-LNA),current reuse technique.

FPGA based Implementation and Verification of H.264/AVC Encoder

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Abstract:--

FPGA prototyping in video processing is extremely essential as it verifies the functionality of the design. The Proposed architecture of H.264/AVC encoder for motion estimation is simulated, synthesized with the vivado Xilinx nexys4 DDR XC7A100TCSG324-2 field programmable gate array device hardware platform. The implemented architecture also compares with the Xilinx zynq-7000 system-on-chip (SOC) with a clock frequency of 100MHz on a vivado Xilinx Artix-7 FPGA connected with DDR3 memory which is compatible for real time encoding for HDTV applications. This is suitable for high definition television applications, providing up to 60 frames 720p with PSNR around 34 db.

Keywords:

FPGA Prototyping, Architecture, H.264/AVC, motion estimation, HDTV.

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, 12th & 13th, July 2018

High Data Rate OFDM Receiver Design using Adaptive Channel Coding Techniques for Underwater Communication

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Dr. Mrinal Sarvagya, Professor, REVA University

Abstract:--

In the Underwater acoustic channels, achieving the high data rate, an high throughput and low latency which is a very challenging objective because the channel is time varying multipath in nature. We have designed an OFDM Receiver system in this work which is more suitable for underwater acoustic communication to increase the data rate. To achieve more data rate at the OFDM receiver we have used efficient modulation techniques such as DPSK, QPSK and 16-QAM which are best suited for adaptive method based on the SNR value of the Rayleigh fading channel and channel coding schemes like Turbo codes and LDPC codes for UWA communication to minimize the error in the communication. The simulation results show that the performance of the OFDM system with the use of Adaptive modulation, Adaptive channel coding is better when compared to the OFDM system without these schemes. The simulation results also prove that these modulation schemes and channel coding schemes are the best suited to achieve high data rate for underwater acoustic communication

Keywords:

Underwater acoustic communication, LDPC, Turbo codes, Adaptive channel coding.

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, 12th & 13th, July 2018

Analysis of Heterogeneous Traffic Volume Studies and Optimization of Signal Cycle length by VISSIM Software

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G. Sridevi, Professor, BVRIT

Abstract:--

Now –a-days the design of traffic signal has become an important factor for controlling traffic movement at intersection in towns and cities. Traffic signals not only reduce the accidents but also enable the road safety to users for an effective use of road at intersection.

In the following studies the traffic volume at a particular junction is taken and simulation technique is adopted to reduce the delays, congestion etc. Traffic volume is considered in hourly basis for a week classifying the vehicles into different types and the maximum Peak hour volume is taken and the signal time is designed for the maximum peak hour volume. Signal time can be calculated by Webster's method in which green time, cycle time can be known, and the obtained results are simulated in VISSIM software which gives a total delay occurring at junction by which signal time at a particular leg may be optimized.

Keywords:

Cycle length, Signal, Webster method, Peak hour volume, VISSIM.

Design of Uniform and Nonuniform Circular Arrays Comparison with FFA and RLS

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Abstract:--

Multiple antennas can be arranged in various geometrical configurations to form antenna array with high directive radiation pattern. Linear antennas are limited in their steering capability. The circular arrays have become popular in recent years over other array geometries because they have the capability to perform the scan in all the directions without a considerable change in the beam pattern and provide 3600 azimuth coverage. Circular arrays are less sensitive to mutual coupling as compared to linear and rectangular arrays since they do not have edge elements. They can be used for beam forming in the azimuth plane for example at the base stations of the mobile radio communication systems as the components for signal processing. FFA design method of circular apertures for narrow beam width and low side lobes has been reported by Taylor. It includes the development of continuous circular aperture distributions, which contain only two independent parameters, A and , where A is related to the design of side lobe level and is a number controlling the degree of uniformity of the side lobes.A realized radiation pattern is expressed in the integral form. They are compared with a line source and circular aperture.

Keywords:--

UniformCircular array,RLS,FFA,Array

Influence of Boundary Layer Separation in Pervaporation Separation Systems: Modelling and Simulation

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Abstract:--

The rapid industrialization over the decades has resulted in environmental pollution. Water pollution is one of the major challenges that is being encountered globally. So the treatment of wastewater has gained major attention as water is one the primary requirements for life. The water coming from the chemical industries contains the volatile organic compounds (Toluene, Phenol etc.,) which is contaminating even the ground waters. Removal of volatile organic compounds (VOCs) using conventional technologies like air stripping and adsorption with activated carbon are not economically viable. Removal of VOCs using membrane separation processes has grabbed more attention. The mathematical model was formulated to simulate the performance of hollow fiber module for pervaporative separation of toluene and 1,1,1-trichloroethane. The performance equation for the entire module was derived by simplifying the mass, momentum and energy balance on both the feed and the permeate sides. The present work focuses on influence of boundary layer separation in pervaporation separation system of toluene and 1,1,1-trichloroethane. From the results it was found that for all VOCs are resisted at the liquid phase boundary layer only.

Keywords:

VOCs, Pervaporation, hydrophobic membrane, influence of boundary layer.

Congestion Control and Routing Optimization by using On Demand Routing protocol of Second Order Approach

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Abstract:--

Now a days the main problem is routing optimization and distributed joint congestion control. The Routing optimization has received a significant role recently. Most of the existing methods follow idea called back pressure algorithm (BPA) which results in slow convergence and poor delay execution. To overcome slow convergence, poor delay

And to achieve perfect routing optimization by using On Demand routing protocol that offers optimality of utility, fatly calculation of path with low delay. Our contribution in this paper is to overcome the drawbacks in the second order distributed approach, they are:

1) On-demand routing protocol to decrease time delay.
2) Only the efficient or needed nodes are covered avoiding unnecessary nodes.
3) Improper optimization is avoided in this method.

Keywords:

On Demand Routing Protocol, delay Performance, second order distribution Approach.

Synthesis and Characterization of Amorphous Silica from Rice Husk Ash (RHA)

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Abstract:--

A high purity amorphous nano silica powder was synthesized from the rice husk ash using alkali extraction followed by acid precipitation method. Rice husk ash is a by-product of combustion process of the rice husk to generate energy in process industries and is rich in silica (almost 75 – 90%) and carbon apart from small amounts of other constituents. This present study aims to extract maximum amount of silica from the rice husk ash and its characterization. The composition, phase, morphology, size, surface area and the surface charge of the obtained silica, can be investigated by using XRD, FTIR, Particle size analyzer, SEM and BET surface area analyzer. The high purity nano silica obtained by digestion of rice husk ash using alkali solution i.e., NaOH. Almost 75% percent of silica was obtained at 3M NaOH. The obtained silica nano particles was confirmed amorphous in nature by the X-Ray powder diffraction at the angle $2\theta = 23$ degrees. And high amount of silica presence was confirmed from the EDS test. FTIR band at 1063 confirms the presence of Si-O-Si which is symmetric stretching of silica and oxygen which confirms the presence of silica. Size of the silica nano particles are ranged from 240-300 nm and surface charge was -17 mV was confirmed from the particle size analyser. The results showed that it is possible to produce high purity silica from the RHA using simple methods. The treatments that afforded the best results were acid leaching followed by thermal treatment at 800ºC, and alkaline extraction at low temperature, with silica purity of 99.3% and 99.6%, respectively.

Key words:

Rice Husk Ash, Nano Silica, Amorphous.

Preparation and Characterization of Graphene Oxide Nanoparticles

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Abstract:--

Separation of liquid mixtures by conventional separation processes is energy intensive and at times hazardous. So membrane separation processes gained more attention from past few decades as they are economical, safer and green. In this regard membrane should possess high thermal, mechanical and structural strength. Polymer matrix composite with Graphene oxide (GO) reinforcement membrane expected to have excellent membrane characteristics and offer huge potential for real applications. Earlier mixed matrix membranes with GO were used for gaseous mixture separation. Therefore, the present study explores to synthesize GO via the modified Hummer method and its characterization by using XRD, FT-IR spectroscopy, SEM, BET etc. Further the synthesized GO will be used to prepare mixed matrix membranes and the membranes will be used for separation of liquid mixtures.

Key words:

Graphene oxide (GO), Mixed matrix membrane, Pervaporation.

Synthesis and Characterization of ZnO nanoparticles and its Application in Waste Water treatment

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Abstract:--

Water is the largest part of essential substances for all existence on earth and a source of evolution of human civilization. Now a days waste water is a major problem which comes from industries etc.There are different methods for purification of water but these water treatment techniques require large area, high capital investment, operation and maintenance cost. However the use of nano materials to overcome this problem because nano materials are promising tools in water remediation due to their large surface area and unique properties to bulky materials.

In my present investigation, the metal oxide semiconductor like ZnO having high surface area, high thermal stability and low cost so ZnO nanoparticles are environment friendly as they are compatible with organisms which makes them suitable for waste water treatment. These particles are synthesized by chemical precipitation method. The obtained ZnO nanoparticles were characterized by using XRD, FTIR, SEM, Particle size analyzer and BET surface analyzer. After synthesis, ZnO nanoparticles are used for waste water treatment and analyze the different parameters.

Keywords:--

Chemical precipitation method, nano particles, ZnO, XRD, FTIR, waste water treatment.

Synthesis and Characterization of TiO_2 Nanoparticles Used For Dye -Sensitized Solar Cells

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Dr.D.Subba Rao, JNTUA College of Engineering, Ananthapuramu.

Abstract:--

Photovoltaics are an efficient way to directly convert solar energy into electricity. Dye Sensitized Solar Cell (DSSC) is the new generation in solar cells which attracts researchers due to their potential low-cost manufacturing process and environmentally friendly. The significant recent development of the DSSC technology has demonstrated its promise for future renewable solar electricity generation. The performance of dye sensitized solar cells (DSSC) has been investigated as a function of wide band gap semiconductor, electrolyte and dye sensitizer.

In the present research work, TiO_2 nanoparticles were synthesized using sol-gel method. The synthesized nanoparticles were characterized by using X-ray diffractometer (XRD), UV-Vis spectrophotometer, Scanning Electron Microscope (SEM) integrated with Energy Dispersive X-ray Spectroscopy (EDS) analysis. A reasonably good yield of nanoparticles was obtained. So these nanoparticles potentially used as photo anodes in DSSCs.

Keywords:--

Photovoltaics, Dye Sensitized Solar Cell (DSSC), TiO2 nanoparticles , photo anode.

An Efficient Image Denoising Algorithm Based on Double Density Dual Tree Discrete Wavelet Transform for Wireless Sensor Network

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P.Samundiswary, Pondicherry University.

Abstract:--

Generally, the input images are unavoidably corrupted by Gaussian noise during process of sensing, transmitting and retrieval of images over Wireless Sensor Network (WSN). To suppress the noise and enhance the input image quality, the wavelet based image denoising methods has shown better results in the field of WSN. However, these methods affect the quality of the denoised image due to the poor selection of thresholding technique and the number of decomposition levels. In order to overcome the above mentioned problems and to reduce the impact of Gaussian noise over WSN images, this research work concentrated on the hybrid of double density wavelet and DTCWT based wavelet called Double Density Dual Tree Discrete Wavelet Transform(DDDTDWT). The proposed work is discussed in form of two parts. The first part explains about the simple DDDTDWT based image denoising technique. The second part describes about the proposed DDDTDWT with the combination of Fast Non Local Means Filter (FNLMF). Further, to verify the effectiveness of the proposed image denoising algorithms, two thresholding methods such as hard thresholding using median absolute deviation and bivariate thresholding using adaptive method are utilized. Furthermore, the performance comparison of the existing and the proposed image denoising methods developed for WSN are examined through the simulation results using MATLAB.

Keyword:

Image Denoising, Fast Non Local Means Filter, Double Density Wavelets, Hard Thresholding, Bivariate Thresholding, Wireless Sensor Network.

Performance Analysis of Integrated WLAN-WiMAX-UMTS Networks for Multimedia Applications

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Sivasindhu M, Research Scholar, Department of Electronics Engineering, Pondicherry University

Abstract:--

Next Generation Wireless networks (NGWN) are the integration of different types of available wireless networks. These integrated networks will provide seamless connectivity for multimedia user applications. Among various wireless networks, the networks such as Wireless Local Area network (WLAN), Worldwide Interoperability for Microwave Access (WiMAX) and Universal Mobile Telecommunications System (UMTS) have their own unique characteristics and support for wide range of multimedia user applications. So, the integration of these networks and their performance analysis in respect of Quality of Service (QoS) is a major concern nowadays. Hence, this paper deals with the integration of WLAN, WiMAX and UMTS networks by considering QoS parameter. Further, the integration of these networks are analyzed with loose coupling and tight coupling architecture along with and without QoS. Furthermore, the performance analysis of the above mentioned integrated network for multimedia applications is also done. The simulation is performed through Opnet simulator.

Keywords:--

HetNets, IP QoS, WLAN, WiMAX, UMTS.

Synthesis of Cu-CuO nanocomposite in microreactor and its application to Photocatalytic degradation

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Abstract:--

The Nano composite of Cu-CuO is effectively arranged by means of controlled oxidation of Cu nanoparticles synthesized by fluid stage decrease in a micro reactor. The molecule's morphology, estimate, and essential creations have been explored. Exploratory outcomes exhibit that copper nanoparticles are circular fit as a fiddle, with great scattering and limited molecule measure conveyance. The surface of Cu nanoparticles was oxidized to CuO, and the span of Cu-CuO composites crystallites was around 10 nm, predictable with the measure of copper nanoparticles. The readied Cu-CuO Nano composite alongside the nearness of H_2O_2 displays phenomenal photo catalytic movement for debasement of methylene blue (MB) under UV illumination. A general corruption of 98.5% could be accomplished with 10 mg of Cu-CuO Nano composite alongside 1 mL of H_2O_2, inside term of 50 min light. The MB debasement energy was seen to take after first request.

Key words:--

Microreactor, Cu-CuO, Dye Degradation.

Performance Evaluation of GaAs Photonic Crystal based Directional Coupler All Optical Switch

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Abstract:--

In future, the telecommunication systems will be totally based upon the photonic integrated circuits and components for the transmission of optical signals. Since optical signals offer high speed, less delay and higher efficiency. This introduces a new research area for photonic crystal based optical components like optical switch, multiplexer, optical filters etc. Among these devices, the optical switch draws more attention due to its primary switching operation. Hence, this paper deals with the modified design structure of GaAs photonic crystal based directional coupler all optical switch which operates at the wavelength of 1500nm. Further the switching performance evaluation of this device is made for both electro optic effect and non-linear optical effect. The design and simulation of the optical switch is done through Comsol Multiphysics software.

Keywords:

Directional Coupler, linear state, Non-linear state, Electro-optic effect, Non-linear optical effect.

Comparative Strength of I Section Pavement Blocks Made of PCC Mixed with Rice Husk Ash

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Abstract:--

Originally, pavement solid blocks mold by raw products of brick like clay, fly ash or lime etc. from decades, the solid blocks are commonly casted for getting the keen ambiance for footpath ways. The dismantled solid blocks are reusable in a cost effective way without any pre existing mark.

Now-a-days updated technology is giving us a chance to enhance methods in various aspects related to execution of field works like pavements etc.

This study determine the comparative strength of I section pavement blocks are casted in 2 ways. They are i) 100% pure PCC which contains cement, fines (FA) and coarse (CA) and ii)PCC mix proportion which is shared a part % of organic additive like rice husk ash added to identify the variation of characteristic strength.

The organic supplement is added with PCC in terms of % proportions like 5%, 10% and 15%, to find out the properties of strength for 3,7,14 and 28 days of casted curing blocks. Based on study we noticed that compacting factor test reduces the % with organic additive RHA which improves the strength in a cost effective manner.

This paper indicates the organic additive plays a key role to attain high strength of concrete and it indicates clearly the downfall towards self weight to measure the strength with respect to pure PCC.

Keywords:

PCC, Rice Husk Ash, UTM.

A super wideband circular-shaped fractal antenna loaded with concentric hexagonal slots

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Abstract:--

This article presents a super wideband (SWB) circular-shaped fourth iterative fractal antenna loaded with concentric hexagonal slots. A tapered microstrip feed and a partial ground plane is used. It has a total size of 40 × 27 × 1.6 mm^3. Numerical results of the antenna show that it provides a bandwidth from 1.43 GHz to more than 40 GHz (percentage bandwidth greater than 186%) with a bandwidth ratio of approximately greater than 28:1 for S_{11} < -10 dB. A prototype of the proposed antenna has been fabricated and its performances are measured up to 15 GHz. A good agreement is achieved between the numerical and experimental reflection coefficient, VSWR and input impedance. Measured radiation patterns at different frequencies and simulated peak gain are presented and discussed. It has the advantages of super wide bandwidth and compact size. The developed antenna is suitable for various wireless communications such as GPS, GSM, UMTS, ISM and UWB.

Key words:

Circular radiating patch; fractal antenna; hexagonal slot; microstrip feedline; SWB applications; tapered feeding.

Qualitative analysis of grey water around jntua for improvement of water reuse.

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Abstract:--

Wastewater refers to the water of no further use, consisting 99% water and 1% waste. Grey water and black water, only types of Wastewater have separate method of treatment. Grey water can be more efficiently and widely used even with a minimal treatment than compared to its counterpart. Six Locations were taken into consideration at Jawaharlal Nehru Technological University, Ananthapuramu. All the locations were selected as such that most of properties were covered of JNTUA for purpose of designing a treatment plant. Samples were collected and analysed for three seasons Rainy, Winter and Summer. A total of around 26 parameters like pH, COD, BOD, EC, Nitrates, Magnesium etc., Rainy and Winter grey water shown similar properties where summer parameters were a little different. All these parameters should be considered for designing of treatment plant. Being a drought zone, there is a need for savage of Surface and Underground water. Water Quality Index shows the need for the basic treatment of this grey water and can be used for the watering of plants, construction work and toilet flushes in and around the campus.

Keywords:--

Greywater, recycle, reuse, WQI, treatments, JNTU, Ananthapuramu.

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, 12th & 13th, July 2018

Automatic Modulation Recognition in Cognitive Radio Receivers using Multi-Order Cumulants and Decision Trees

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Abstract:--

Design of intelligent receiver is a major footstep in the implementation of Cognitive Radio (CR). Automatic Modulation Recognition (AMR) of the received signal decides the performance of the intelligent receiver. This paper proposes new classification algorithms for AMR using supervised Decision Tree (DT). DT Classifiers (DTC's) are non-parametric classifiers which provide high speed and low complex solutions in classification. Fine Tree (FT), Medium Tree (MT) and Coarse Tree (CT) classifiers are implemented in this paper which is trained with multi-order cumulants to achieve optimum classification accuracy. Performance of DTC's is compared with other classifiers stated in literature to prove their superiority in modulation classification.

Key words:

Modulation Classification, Cognitive Radio, Moments, Cumulants, Binary Trees

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, 12th & 13th, July 2018

Analysis of Transformation Methods for Mathematical Modeling of wind Resource

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Abstract:--

In the current global renewable source summit environmental policy, wind power industry has been growing six times fast in recent years. This paper describes and compares the techniques of modeling the wind speed while assessing the wind energy potential of the geographic location of the region. The probability density functions are discussed to designate the wind speed density functions. Transformation method proposed to obtain a wind power density model and its statistical properties are discussed particularly from three pdfs. The wind power density and cumulative density functions are derived using the transformation method. The parameters of those distributions are estimated using the maximum likelihood method. The quality of the goodness of fit is analyzed and compared using the Kolmogorov-Smirnov test. An application of the mathematical model is demonstrated by a case study that involves wind speed data from several stations in India. Also, the descriptive statistics such as mean, standard deviation, skewness and kurtosis of the wind speeds of the different stations are deliberated which provides better intuition about the characteristics and properties of power density. Among the discussed distribution functions, the Burr probability density function appears to be the most reliable statistical distribution for the stations taken for the analysis.

Key words:

Burr probability density function, transformation, mathematical modeling, statistical properties

Kinetic studies for the esterification process with ionic resin catalyst: Optimization using response surface methodology

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Abstract:--

The esterification reaction between acetic acid and methanol was studied in a batch reactor with solid catalyst. The temperature range applied was 323.15 K to 353.15 K. Experiments with feed mole ratios ranging from 1:1 to 1:4 were conducted. The influence of temperature, catalyst loading, initial reactant mole ratio, and the reaction time on the conversion of acetic acid has been investigated. The response surface methodology based on central composite design optimization method was used to design the experiments. A regression model has been developed for the conversion of acetic acid. The model correlates the acetic acid conversion and four significant independent variables. The four most significant variables are reaction temperature, mole ratio of reactants, catalyst loading and reaction time. From the statistical tests it has been established that the model truly represents the experimental data. There is a good agreement between experimental data and model predictions at optimum conditions for acetic acid conversion.

Key words:

Esterification, kinetics, solid ionic resin catalyst, response surface method.

Representation of knowledge through Ontology for swine flu disease

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Abstract:--

The practice of using ontologies in medicine is mainly focussed on the representation and re-organization of medical terminologies. Physicians developed their own specialized languages and lexicons to help them store and communicate general medical knowledge and patient-related information efficiently. Such terminologies, optimized for human processing, are characterized by a substantial amount of implicit knowledge. Medical information systems, on the other hand, need to be able to communicate complex and detailed medical concepts unambiguously. This is noticeably a complex task and requires a intense analysis of the composition and concepts of medical terminologies. But it can be accomplished by fabricating medical domain ontologies for demonstrating medical terminology systems. Moreover, there are limited ontologies available in the domain of pulmonary diseases and as such tropical diseases like swine-flu(H1N1) are yet unexplored. Swine-flu is rapidly spreading disease and the information for it available from books, newspaper articles and internet which is unmanageable and unorganized. Therefore, in this paper, we propose to develop a medical ontology based information system for Swine-flu. We have implemented this system using Protégé 4.1 Beta Software and then hosted it onto Apache Tomcat Server. The deployed version can be viewed in XML and RDF formats and DL query can be used where user can get answers to their queries when questioned. Finally, to evaluate the performance functional testing with Fact++ Reasoner is used with ontology browser.

Key Words:

Ontology, Swine-flu, Protégé, Fact ++ Reasoner.

OFDM Receiver Design using Adaptive Modulation and Channel Estimation based on Kalman filter Variations for Underwater Acoustic Communication

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Mrinal Sarvagya, Professor, REVA University

Abstract:--

This paper deals with data rate enhancement in OFDM systems using Adaptive modulation and Channel estimation for Underwater Acoustic Communication (UAC). The accurate knowledge of the channel aids equalization and symbol detection. Since the Kalman filter is an optimal estimator in nature, is proposed to address the problem of channel tracking in fading environment. The random data bits are modulated using QPSK, DPSK and 16-QAM and transmitted over the channel. Pilot bits and cyclic prefix are used for channel estimation and to protect from the Inter symbol interference (ISI) respectively. The channels under consideration in this work are AWGN, Ricean and Rayleigh. The Kalman filter operates over the data bits to estimate the channel. At the receiver end demodulation and symbol detection is performed and the same model is implemented in MATLAB. The simulation results for OFDM system are compared based on the BER and MMSE for the three mentioned channels. The simulation results shows that Adaptive modulation yields better result compared to individual modulation schemes and the simulation results also prove that the Kalman filter is an excellent estimator and predictor which finds its application in channel estimation in OFDM systems.

Key words:

OFDM, Underwater Acoustic Communication, Adaptive modulation, Kalman filter, Channel estimation

Authentication for Cloud Services using Steganography

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Abstract:--

The issue of anchoring access to the data stored in remote is intense obtain data to financial balances, wellbeing files, protected innovation and data are made by just a couple of snaps, paying little mind to geographic area. In the meantime, more of these get to are produced using handsets. Distributed computing is prominently appropriate for tending to issues identified with constrained customer assets, as calculation from customers and offers dynamic accessibility of process assets. Validation of the organizations clients to the cloud benefit is required in light of the fact that thusly it is disposed of the assaults dangers to go into the Cloud administrations. A reasonable verification is required for associations that need to get to the Cloud administrations. Our answer respects expanding security in Cloud Computing and it is in truth a solid half and half client verification arrangement in light of utilizing picture joined with content keeping in mind the end goal to stay away from the shortcoming of straightforward client and secret key answer for validation. A two factor watchword picture based validation strategy used for cloud authentication. This verification approach is utilized without extra equipment included and exhibits the benefits of use as far as security and ease of use. Each time when the client will be requested to give his/her character, a shape for each picture incorporated into the photograph will be recorded. The client should recollect the mystery code for each image and to precisely present them in the structures. The worldwide cloud get to arrangement will be founded on our cross breed proposed content picture based arrangement, and will be finished by the X.509 endorsements.

Keywords:

verification, multi factor secret key validation, solid confirmation, image based, IaaS, PaaS, SaaS.

MRF: Multivariate Data Clustering using Heuristic Data Intensive Computing and Relevance Feedback Learning approach

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Abstract:--

Most of the problems in the real world are multivariate i.e., involves many variables. Multivariate data comprises of several datasets with more than one variable. Multivariate datasets has power to change the use of data dramatically as database size increases and it shows adequate results on predicting the effect on change in one variable will have on other variable. These datasets consist of transitive and intrinsic hidden relationships among the variables such as analyzing a variable is influenced by other process variables and preferences. It is the situation where efficient multivariate data analysis techniques exhaustively needed to catalog the given type of data. In the literature several techniques are proposed and analyzed; one such technique is multivariate data clustering.

This paper will present a unified framework of multivariate data clustering using heuristic data intensive computing and relevance feedback learning. The implementation starts with formalizing a heuristic data intensive computing (HDIC) which have the ability to handle data flows. Clustering the data is performed with proposed Relevance feedback learning algorithm with consensus functions. These functions are selected as the change in the cluster ensemble selection, combine and reduction. In this proposed approach we have used a new kind of distance functions such as Camberra, Chi-square and Cityblock. The empirical analysis shows that, the proposed approach attains better cluster ensembles on various multivariate datasets taken from UCI and out performs with k-nearest neighbour (KNN) in different settings. The performance of the proposed approach is assessed with Accuracy and F1-measure.

Key words:

Multivariate data, clustering, consensus functions, cluster ensembles, k-nearest neighbour (KNN).

Design of Piezoelectric Shoe for Women's Safety

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Abstract:--

This article describes the design of piezo defense shoe which is intended for the women's safety keeping in mind the tragedies which has been occurring. It is study of how the piezo plates on the applied mechanical stress could produce an electrical energy. This electrical energy production would drive the piezo defense shoe which is responsible for the production of the electrical current from the electrode present which on double tap would enable the electrode to come out and numb the person for sometimes that is produce the shock.

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, 12th & 13th, July 2018

Sentiment Extraction and Analysis using Machine Learning Tools-Survey

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Abstract:--

Sentiment search is clearly abstract cornerstone and essential administer in identifying user's importance preferences. To get the quality of the product, position in evaluations is precondition. Normally, if item's studys express constructive idea, the produce perhaps with bigger rating to some populous qualification. By analyzing the user considerations, their sentiments suggest unique experts to some target user in agreement the user culture. LDA is truly a Bayesian approach represented particularly to create the unification of studies, topics and discussions. In this paper, we have discussed about various machine learning tools and techniques for the better understanding of the concepts and efficient processing of sentiments from the huge data sets.

Key words:

Ratings, sentiment distribution, item reputation, Reviews, Rating prediction, Recommender system, Sentiment influence, User sentiment

Security Protocol Using ECDSA for WSBNs

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Vindya Gandam, CSE Department, B. V. Raju Institute of Technology

Abstract:--

The execution of security traditions inside Wireless Body Sensor Network (WBSN) makes chances for more observations in the reason for execution valuation. The energy of such traditions can be developed by formalizing its fragments using diverse frameworks. In addition, impersonating the security tradition can give learning into a couple of blueprint parameters, for instance, response to wellsprings of data, and help changing these arrangement parameters. In this endeavour, we give a framework to repeating security traditions inside WBSN with a particular true objective to favour that such tradition meets fundamental security essentials. With the arrangement to deal with issues indicated, we need to sign an automated mark, as certifiable, to secure the benefits of each other. Modernized imprints are some colossal numbers, for instance, a long string of 1024 bits. It can be sent by sender, others can't fake it. Once get gain the stamp, sender can't deny transmitting it. If others fake the stamp, authority can consider it by getting the message respectability. By using this procedure we have separated the execution of the framework. The results exhibits that the proposed structure performed better the extent that essentialness efficiency, distribute, made packs, got packages, package transport extent and throughput of the framework..

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, 12th & 13th, July 2018

Energy Efficient Cluster Based Hybrid Signature Generation for WSBNs

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Vindya Gandam, CSE Department, B. V. Raju Institute of Technology
V. Sankiran, CSE Department, B. V. Raju Institute of Technology

Abstract:--

The rule point of convergence of the present a very long time in Wireless Body sensor Networks was to develop the framework with insignificant exertion and low power. There are piles of progressions which are checked absolutely in light of the remote body sensor frameworks. Unquestionably the most crucial domains are natural watching, movement control application, atmosphere checking, and typicality checking of the temperature. In a remote body sensor compose (WBSN), how to spare the confined power resources of sensors to extend the framework lifetime of the WBSN to the extent may be achievable while playing out the recognizing and distinguished information proclaiming errands, is the most major issue in the structure plan. In WBSN, the correspondence is done between the source and the objective by multi-hopping process. The widely appealing ricochet centers are tenaciously working for the data transmission so those centers will quickly drain out their battery imperativeness and truncate the framework lifetime of the WBSN.

To avoid this issues the clever thought called Energy Efficient Clustering based creamer stamp age is displayed. It is a beneficial framework lifetime extension procedure, which refuses eating up too much battery essentialness for a specific social affair of sensor center points. The proposed part uses information related to the waiting battery essentialness of sensor center points to adaptively change the transmission extent of sensor centers. This tradition has four crucial parts. They are Advanced Clustering, Cluster head decision, gather game plan and twofold hashing with signature age.

Secure Full-Text Retrieval on Cloud

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Abstract:--

Cloud Computing is a present day technology that effectively support the client oriented services. These days we are mostly using applications that consumes the cloud storage for storing and retrieving information. In such case that data management and privacy preservation cryptographic technique the data is converted to unreadable format. Due to this full text retrieval on encrypted data on cloud of required information becomes complex. Therefore in this paper we proposed bit slice indexing method on Elliptic-Curve-Diffie-Hellman for providing some security to cloud.

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, 12th & 13th, July 2018

Zero Knowledge Proof for Secure Data Sharing in Cloud Storage

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Abstract:--

Cloud computing is rapidly growing due to the elastic, flexible, and on-demand storage and computing services for users. In cloud based storage concept, data owner does not have full control over own data because data controlled by the third party called cloud service providers (CSP). Data security is challenging problem when data owner shares own data to another known as data sharer on cloud. Many researchers have addressed this issue by cryptography with different encryption schemes that provides secure data sharing on cloud. Here, we propose system model for secure data sharing on cloud with intension to provides data confidentiality, access control of share data, removes the burden of key management and file encryption/decryption by users, support dynamically changes of users permissions (Read, Write), owner not be always online when the user wants to access the data. In this paper we extend the notion of zero knowledge proofs of membership (which reveal one bit of information) to zero knowledge proofs of knowledge (which reveal no information whatsoever). Because it is a common weakness among traditional communication protocols to be vulnerable to impersonation attacks. Every time this sort of protocol is executed, the system degrades because of the threat of an eavesdropper listening in on the communication. The objective is to obtain a system in which it is possible for a prover to convince a verifier of his knowledge of a certain secret without disclosing any information except the validity of his claim.

Key Words:

Cloud computing, storage, security, secure sharing, cryptography, access control.

Comparative Analysis of Metallic Particle Trajectory for 145kV Gas Insulated Busduct

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M. Suryakalavathy, Dept of EEE, JNTU Hyderabad
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Abstract:--

This paper presents the analysis of a metallic particle trajectory in 145kV common enclosure Gas Insulated Bus duct (GIB) using various numerical methods which is compared with segregated GIB. A Gas insulated Substation (GIS) is a modulated design equivalent of a conventional substation (Air Insulated substation). All the equipment is housed inside an airtight enclosure filled with a dielectric medium. The dielectric strength of the insulating medium is severely impacted by the presence of metal particles in it. CIGRE group in one of its study on GIS systems has stated that of all the insulation failure cases of a GIS, metallic particle contamination has been the cause of the failure in more than 20% of the cases. Therefore there is a need to study the trajectories of metallic particles in GIB. In this paper, the movement of metallic particles in a common enclosure configuration of GIS has been simulated for a 145 kV GIS up to withstand voltage of 275 kV. Trajectory of Al and Cu particles has been simulated by using Analytical method, Charge Simulation method and Finite Element method. These results are presented, compared and analysed.

Keywords:--

Maximum Radial Movement, Gas insulated bus duct (GIB), Metallic Particle, Common enclosure.

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, 12th & 13th, July 2018

Power Analysis of Single Precision Floating Point Multiplication using Vedic with Proposed Techniques

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Abstract:--

In design of arithmetic circuits low power consumption is one of the basic requirements in recent years. The speed of the device depends on the supply voltage degradation. In this work, a floating-point multiplication for single precision numbers using vedic with different existing techniques like full adder, 4x1 multiplexer, 3:2 compressors and proposed techniques such as modified 2x1 multiplexer moel1 and model2, modified 4:2 compressor logics XOR-MUX and XNOR-XOR-MUX logics are analyzed. The main block involved in the implementation of floating-point multiplication is 24-bit mantissa multiplier block. Further, the optimized techniques are introduced multiplier block to reduce the power dissipation. The proposed techniques such as 2x1 multiplexers, 3:2 compressor with XOR-MUX and XNOR-XOR-MUX logics and 4:2 compressor with XOR-MUX and XNOR-XOR-MUX logics for single precision floating-point multiplication provides better solution in terms of power related issues. The power analysis of single precision floating point multiplication is done and compared with the existing and modified. in terms of Power. Further, the performance metrics of vedic multiplier are analyzed for both existing and proposed techniques are compared. These floating point modules are programmed using Verilog and synthesized using Xilinx Vivado Simulator. From the simulation results, it is concluded that 4:2 compressor with XNOR-XOR-Mux logic achieves better response in terms of power.

Keywords:--

Vedic, Compressor, Multiplexer, Verilog.

Effect of Polyethylene Glycol on the Properties of Self-Curing Concrete

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Abstract:--

Hydration of Portland cement directly effects the development of engineering properties of concrete. It is reported that for sufficient hydration to take place, the relative humidity in the pores needs to be maintained above 80%. It is very important to minimize the loss of moisture from concrete. Curing is the method of controlling the rate and extent of moisture loss from concrete during cement hydration. The objective of this paper is to study the effect of polyethylene glycol as internal curing agent, on the properties of self-cured concrete of M20, M40 and M60 grades. Compressive, split-tensile and flexural strength properties of self-curing concrete mixes are evaluated and assessment of the quality, structural integrity and compressive strength are made on internally and externally self-cured concrete. The optimum dosage of polyethylene glycol (PEG) (expressed in percentage by weight of cement) adopted for M20, M40 and M60 grades self-cured concrete are 1%, 0.5% and 0.5% respectively. There is a significant increase in the compressive, split-tensile and flexural strength properties self-curing concrete mixes at all ages of curing when compared to normal externally cured concrete mixes of about 5-20% for all the grades considered for study. This improvement may be attributed to the continuation of the hydration process as a result of incessant availability of water resulting in lower voids and pores, and greater bond between the cement paste and aggregate. Non-destruction evaluation studies reveal that all grades of self-curing agent induced concrete are classified as 'excellent' concretes in terms of strength and durability point of view due to improved pore structure of concrete through enhanced hydration and strengthening of interface transition zone.

Keywords:

Self-curing concrete, internal curing, Polyethylene Glycol, Self-desiccation, Non-destructive tests

Performance Investigation of 3Z Buck Boost Converter for Renewable Applications

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Abstract:--

In case of renewable generation systems like Solar, Wind and Fuel cell it is required to use DC-DC converter to increase the voltage levels to meet demand. In such case the operating efficiency of dc-dc converter plays a vital role in energy conversion generally lie in the range of 60-80 percent. In this paper a 3-Z cascaded network is proposed for the renewable energy applications operating at higher efficiency. A comparison is made between conventional dc-dc buck boost converter with the proposed 3-Z cascaded network and analyzed its performance with lighting load. Simulation analysis is also performed to validate the proposed converter behavior.

Keywords:

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

ICT Approach to Defuse the Cybercriminal Sedition Dimension of Telangana Movement

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Abstract:--

Cybercrime refers to Internet usage involving any illegal activity. Cybercrimes are becoming galore throughout the length and breadth of the world owing to the increased Internet usage and the human capital involved in the usage. In India also, the same phenomenon is found as the nation has vast population. Undesirably, cybercrimes are percolating into some university academic environments. In our earlier work, we presented many facets of multiple cybercrimes in the JNTUH academic environment. The cybercrimes perpetrated, in the context of the Telangana Movement, w.r.t. the violations of State Emblem of India (Prevention of Improper Usage) Act 2005, u/s 66C-ITA2000-2008 were registered with FIRs. The cybercrime of sedition is not registered yet. Our research work explored in this regard.

Under the cybercriminal Government of Telangana (CGoT) has been purportedly prevalent the JNTUHJAC, during 2011–2014 approx., as indicated in the website, http://jntuhjac.com, traceable through the cyber forensic web crawler tool wayback machine. Note worthily, the crime got registered against identity theft under Sec. 66-C under IT Act 2000-2008 whereas the complaint was against Sedition crime. The culprit website of JNTUHJAC organization under CGoT was operational in the JNTUH University before the enactment of Andhra Pradesh Reorganization Act 2014 and through that approx. 2000 registrations were obtained for the organizations. We present, in the case study, the many facets of the moot cybercrime issues related to the JNTUH University academic environment and how they are handled by means of the RTI Act 2005 for an empirical approach for impact on the law enforcement agencies to get alert and register the crime under sedition law violation in order to ensure that recurrence of such situations is prevented.

Key words:

ICT Information and Communication Technologies, CGOT Criminal Government of Telangana, JNTUHJAC Jawaharlal Nehru Technological University Joint Action Committee.

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Narsapur, Telangana, 12th & 13th, July 2018

Comparative Analysis of Scalar Based SVPWM Techniques for Open End Winding Induction Motor Drive

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Abstract:--

In this work, scalar based SVPWM techniques are implemented for dual inverter fed open end winding induction motor (IM) drive with single DC source and separate DC sources. To reduce the common mode voltage and to reduce the switching loss in conventional two level three phase voltage source inverter (VSI), scalar based SVPWM techniques are implemented for dual inverter configuration. By using this scalar based approach various discontinuous or Non-Centric PWM techniques are obtained with the addition of zero sequence signal to the reference phase voltage .Where as in conventional SVPWM technique, it requires calculation of sector identification and look up tables which is cumbersome. In Non-centric PWM techniques each phase is clamped to at most 120 degrees for every fundamental voltage cycle, which helps in reducing the switching losses. To validate the proposed work numerous simulations have been performed on both proposed configurations using MATLAB/SIMULINK environment and simulation results are presented and compared for both proposed models.

Keywords:--

Induction Motor (IM), Non-Centric PWM (NCPWM), Space Vector Pulse Width Modulation (SVPWM), Voltage Source Inverter (VSI).

Hybrid Classification Approach for Domain Services Classification Using Semantic and Domain Ontology Knowledge

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Abstract:--

Nowadays, the extreme growth of the web information usage and its domain services facing high challenges in providing accurate and relevant information needs of a user's query. The existing domain service classification approaches assists in the relevant service retrieval and helps in the classification decisions with predefined domain knowledge and taxonomies. Lack of any automatic mechanism in this web domain leads to irrelevant and additional services in return for a requested query, and obtaining a desired web service is a cumbersome issue. In this paper, a Hybrid Classification Approach (HCA) and Enhanced Naive Bayes Classification Approach (ENBCA) are proposed for web domain services classification using semantic and domain ontology knowledge. HCA defines a concept similarity method for domain ontology knowledge construction and it is utilized for runtime semantic classification. Enhanced Naive Bayes classification approach measures the probability of relevancy. Experiment results of the proposed approaches shows the enhancements in domain service classification and achieved a better matching with the relevant services requests. However, these two approaches are integrated it results in high relevant and accurate classifications.

Key words:

Ontology, Domain Services, Semantic Classification, Enhanced Naive Bayes Classification, Hybrid Classification Approach

Implementation of an Area Efficient and High Speed VLSI Architecture for HEVC

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Abstract:--

In ITU-T video coding experts group High Efficiency Video Coding (HEVC) is currently being prepares as the modern video coding standard of the ITU-T .VLSI Architecture is proposed for the HEVC encoder. The VLSI architecture is based on signed bit transform (SBT) matrix which contains only 0,1 or -1. These SBT matrices are very simple and have lower bit width and reduce number of addition operations because it contains many zero elements. So here adder reuse strategy is used. Hence power consumption and area consumption are reduced. So the VLSI architecture can be synthesised with proper area and high speed. The proposed transform hardware architecture can process video data with higher speed and reduced area.

Keywords:

High Efficiency Video Coding, Signed Bit Tansform, High Efficiency Video Coding.

Experimental Studies on Reactive Distillation on Propionic Acid with N-Butonol as Entrainer

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Abstract:--

Reactive distillation is a cost effective chemical engineering process intensification method which involves the reaction and separation simultaneously in a single unit. In the present work the system selected was Propionic acid and n-butanol which undergoes esterification reaction to form butyl propionate. Propionic acid is an important raw material from a biodegradable polymer. The experiments were done in both conventional batch distillation and reactive distillation. In conventional batch distillation no catalyst were used were as in reactive distillation amberlite catalyst used with various weight percentage. several experiments performed by varying the initial concentration(i.e. 0.1,0.2,0.4,0.6,0.8,0.99) of Propionic acid, mole ratios of Propionic acid & n-butanol(that is 1:1 ,1:1.5 ,1:2 And amberlite catalyst weight percent (i.e. 1,2 and 3).the conventional batch distillation and reactive distillation were compared. it is found that maximum conversion obtained in conventional distillation process is 81% and in reactive distillation is 95.1% at the optimum conditions are at initial concentration 0.6 ,mole ratio 1:2 And amberlite catalyst weight percentage 3 .And the recovery of water is more in reactive distillation as compared with the conventional batch distillation .So reactive distillation process is better than conventional distillation.

Keywords:--

Reactive distillation, propionic acid, process intensification-butanol

Performance of Decoupled and Nearest Sub Hexagonal Center Random PWM Techniques for Open-end winding Induction Motor Drive

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Abstract:--

This article proposes the space vector decoupled random PWM (SVDRPWM) and nearest sub-hexagonal center random PWM ((NSHCRPWM) techniques for two 2-level inverters fed on either side of OEWIM drive. In this work, simple digital logic along with instantaneous reference sinusoids is used to obtain the random control signals for two inverters in decoupled approach. Whereas in second method randomizing the modulated signal for generating the control signals for two inverters. Both the proposed techniques use the constant switching frequency. To explore the experimental results for the proposed work 1Hp asynchronous motor is used.

Keywords:

Common-Mode Voltage (CMV), Nearest Sub-Hexagonal Center Random PWM (NSHCRPWM), Open-end winding Induction Motor Drive (OEWIMD), Space Vector Decoupled Random PWM (SVDRPWM)

Implementation of Level shifted PWM and Bee Algorithm for Cascaded Multilevel Inverters

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Abstract:--

This paper presents different modulation techniques to convert DC to AC voltage in multilevel inverter. In present scenario availability of fossil fuels are decaying day by day so importance of renewable energy sources are increasing for electric power generation. Solar energy is abandon in nature. The standalone solar PV system is used for water pumping system in Indian villages, where grid lines are not available.

Cascaded H-bridge inverter (CHB) is suitable for renewable energy sources as it contains separate DC sources. The output voltage consists of predominant lower order harmonics. The various Sinusoidal PWM Techniques such as PD, POD and APOD were used to minimize the THD, it is a high switching frequency technique. Due to high switching frequency, high switching losses are occurred so filter requirement is more. To avoid this problem low switching frequency technique is used. The Selective Harmonic Elimination-Pulse Width Modulation (SHE-PWM) technique is utilised to eliminate the lower order harmonics and also to reduce the THD in multilevel inverters by solving the nonlinear equations. The non linear equations are solved by determining the proper switching angles using Bee algorithm. Bee algorithm is a metaheuristic nature inspired algorithm, based on the foraging behavior of honey bees. Simulation is carried out by using the MATLAB/SIMULINKK software for 5&7-levels.

Keywords:

Cascaded H-Bridge (CHB); SPWM; SHE-PWM; THD; Bee Algorithm (BA); Phase Disposition (PD); Phase Opposition Disposition (POD); Alternate Phse Opposition Disposition (APOD).

Bi-Wheel Rescue Robot with Semg Powered Robotic Gripper over Iot Framework in Emergency and Rescue Operations

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Abstract:--

In this paper, we will deliberate two different techniques of maneuvering a bi-wheel rescue robot with robotic gripper (BRRRG) to precisely mandate the positioning of the robot using sEMG and android mobile application over the IoT framework. The Electromyogram of a subject is captured non-invasively, amplified, rectified, filtered and quantified to precisely control the robotic gripper based on set prehensile patterns. The signals of interest are acquired from two different muscles of the upper forearm namely Flexor Carpi Radialis and Flexor Carpi Ulnaris. Android based mobile application is designed to appropriately position the chassis of the robot from anywhere in the world. It is observed that with set prehensile patterns every subject's muscle contraction varies and hence the study presents the variation in threshold voltage for each test subject based on the gender, age and muscle buildup. The proposed system is designed such that the threshold voltage can be easily programmed and the uniformity with which a subject can control the robotic grip is studied.

Key Words:

sEMG- Surface Electromyography, IOT – Internet of things, WiFi - Wireless Fidelity, Robotic Gripper, Forearm muscles

A Survey on Predictive Healthcare Informatics using Deep Learning- Big Data Approach

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Abstract:--

Big data technologies are increasingly used for biomedical and health-care informatics research. Large amounts of biological and clinical data have been generated and collected at an exceptional speed and scale. For example, the new generation of sequencing technologies enables the processing of billions of DNA sequence data per day, and the application of electronic health records (EHRs) is documenting large amounts of patient data. The cost of acquiring and analyzing biomedical data is expected to decrease dramatically with the help of technology upgrades, such as the emergence of new deep learning approaches, the development of novel hardware and software for parallel computing, and the extensive expansion of EHRs. This paper aims to build a common platform for single point of communication towards health information processing using deep learning approaches and also builds an expert system to analyze and predict the disease severity.

Detection of Cancer Cells Using Microscopic Images of Blood Sample

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Abstract:--

Identification of Blood disorders is practiced by visualization of the blood sample through a microscope by the naked eye of a human. In this project a computerized technique has been developed to help the doctor in identifying different types of Leukemia. Initially the RGB image is converted to L*a*b colour space and is segmented using K-Mean clustering. To this clustered image the features are extracted and is classified into different types of leukemia. The required code is developed using MATLAB. A graphical user interface has been developed for better understanding of the procedure. This technique is used to identify the diseases and diagnose them at an early stage. Images are used as inputs, as they are cheap and do not need any kind of expensive testing nor lab equipment's. The project will be using features in the microscopic images and examine any kind of changes on color, texture, geometry and statistical analysis of the images. The changes that are found in these features will be used as our classifier input.

Binary Gravitational Search Algorithm (BGSA) For Solving Feature Selection Problem

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Abstract:--
In previous years, dierent Lateral thinking optimiza tion techniques have been developed based on evolutionary computation. Many of these methods are inspired by spill out behaviors in nature. In this Paper, a new optimization algorithm based on the law of gravity and mass interactions named as Gravitational Search Algorithm (GSA) is discussed for solving feature selection. In GSA, the searcher agents are a collection of masses which will interact with each other based on the law of motion and Newtonian gravity which gives the binary evolutionary optimized high performance. The detailed feature selection has been discussed in this paper and The GSA method has been compared with some wellknown optimized search methods such as GA (Genetic Algorithm), PSO(Particle Swarm Optimization).

Keywords:--
Gravitational search algorithm, Evolutionary algorithms, Law of Gravity, Optimization.

A Comprehensive Review of the Pigeon-Inspired Optimization Algorithm

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Abstract:--

Optimization is the essence of most of the decisions one has to make, whether it is some complex engineering design or just be a simple holiday planning. The researchers these days are mainly focusing on optimizing time, money and resources which are limited. Nature has greatly inspired and motivated in finding solutions to various optimization problems. Swarm Intelligence is one such nature inspired optimization technique based on social organisms such as bacteria, bees, ants, fireflies etc., for finding solutions to optimization problems. This paper mainly focuses on reviewing a newly developed bio-inspired optimization approach, namely, Pigeon Inspired Optimization (PIO) algorithm. Homing pigeons can easily find their homes by using three homing tools: magnetic field, sun and landmarks. Studies show that pigeons seem to have a system in which signals from magnetic particles are carried from the nose to the brain by the trigeminal nerve. Evidence that the sun is also involved in pigeon navigation has been interpreted, either partly or entirely, in terms of the pigeon's ability to distinguish differences in altitude between the sun at the home base and at the point of release.

Keywords:

Pigeon Inspired Optimization, Optimization, Nature Inspired Algorithm, Swarm Intelligence.

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Narsapur, Telangana, 12th & 13th, July 2018

Performance Comparison between ZSI and SL-ZSI based Axial Flux Permanent Magnet Synchronous Generator Wind Energy Conversion System for different Wind Speeds with different PWM methods

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Abstract:--

In this paper the performance comparison between Impedance source Inverter(ZSI) and Switched Inductor Impedance Source Inverter(SL ZSI)based Axial Flux Permanent Magnet Synchronous Generator(AFPMSG) wind energy conversion system for different wind speeds with different PWM methods are discussed. This system generates different voltage values for different wind speeds. Switched Inductor Z-Source Inverter performance is analyzed for various values of AFPMSG generated Voltages. This is done to predict suitable inverter for Wind Energy Conversion System and reduce the conversion stages. For comparison analysis voltage gain, Switching stress and Total Harmonic Distortion (THD) are taken into consideration. Axial Flux Permanent Magnet Machines are characterized by short axial length and high power to weight ratio facilitate direct compact integration with the wind turbine, the high efficiency, high power density, elimination of gearbox and fast dynamic response make this kind of machines very attractive for Wind application. By connecting more number of inductors and diodes to the classical Z-Source inverter bridge we can form Switched Inductor Z-Source Inverter, and it can boost more voltage nearly two times with same shoot through duty ratio as used in classical Z-Source inverter so we can reduce the switching stress on the Z capacitors and inverter bridge. As a result, we can concluded that the proposed topology require less power electronic switches, and more reliable under short circuits . The simulation readings are compared for different wind speeds and for all three PWM methods, from this we can identified that Maximum Constant Boost PWM using THI is best control strategy for reduction of the harmonic distortion in the output waveform.

Keywords:

Wind Energy Conversion System (WECS), Axial Flux Permanent Magnet Synchronous Generator (AFPMSG). Switched Inductor Z-Source Inverter (SL ZSI),Simple Boost PWM, Maximum Constant PWM and Maximum Constant Boost PWM using THI.

Scalar based Common mode voltage reduction PWM Techniques for Dual inverter fed open end winding Five-Phase Induction Motor Drives

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M.Vijay Kumar, Prof,JNTU Anantapuramu

Abstract:--

This paper presents a simplified approach for common mode voltage (CMV) reduction for the dual inverter fed open end winding five-phase induction motor drives. This paper presents the simplified PWM techniques for three-level and four-level topologies of open end winding five-phase induction motor drive. In this method reference voltage signals are synthesized by injecting the zero sequence signals. Through these proposed methods, a reduction of 66.6% in three-level topology and 40% in four-level topology is observed in peak to peak voltage of common mode voltage when compared to conventional space vector PWM technique. Number of levels in common mode voltage is reduced from 5 levels to 2 levels in three-level topology and 6 levels to 3 levels in four-level topology when compared to a conventional space vector PWM technique. Simulation studies are performed to validate the proposed simplified methods.

Keywords:

Common mode voltage, open end winding, Multi-phase machines, scalar PWM, dual inverter operation.

Recovery of Copper Ore by Using Flotation Techniques and microbe- mineral surface interaction

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Abstract:--

In this study, the recovery of copper from a high grade ore was attempted employing a chemolithotrophic micro organism, a bacteria named Acidithiobacillus ferrooxidans.The aim of the present study is to understand the changes in Copper ore beneficiation based on surface chemical properties of bacteria during adaptation to high grade copper minerals and the projected consequences in flotation and bio-flotation processes .The utility of bio processing in the beneficiation of Copper ore through bio-flotation is demonstrated in this work. An autotroph Thiobacillus ferroxidans bacteria is adapted to high grade mixed copper ore sample, which was supplied from HCL Malanjkhand Copper Plant, Open cast mines .The first step in the procedure was the collection and activation of the bacterial strains of Acidithiobacillus ferrooxidans.The bacteria were raised in a culture of 9K media supplied with adequate calculated amount of nutrients and were shaken continuously in a shaker cum incubator to fully activate them at room temperature. Copper sample was adapted by repeated subcultures of bacteria. The surface characteristics were studied Zeta Potential by analysis at different Ph values and different time intervals. After that the samples were analyzed by Chemical Analysis in the Laboratory for the percentage of the Copper recovered from each sample and also calculated rate constant (k) by using Flotation kinetics. From the studies it was observed that the mineral adapted cells became more hydrophobic as compared to unadapted cells during bio-flotation .It was also noticed that there was no significant changes in the surface charge of bacteria before and after adaption. Higher is the activity of the bacteria, more is the extraction of Copper.

Key words:--

Recovery, Culture preparation, Bio processing, flotation, Bio-flotation, Zeta Potential studies.

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, 12th & 13th, July 2018

Comparison of SVM classifier and Wishart Classifier on L- Band ALOS-Palsar-2 data over Metropolitan Area

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L. Anjaneyulu., NIT Warangal

Abstract:--

For every country, quantitative assessment of the Land Use and Land Cover (LULC) is essential for proper planning and proper utilization of the resources nearby. Land cover change is related to global change due to its interaction with climate, ecosystem and from human-made activities. This paper focuses on Land cover classification of L band ALOS PALSAR Dual Pol data over the Metropolitan City Hyderabad. Longer wavelengths have more penetration capability. Therefore, L band is opted for this study. The dataset is multilooked (5 looks in range and 1 looks in azimuth direction) and filtered with boxcar filter. To understand the scattering mechanism H/A/ decomposition was performed on the dataset. In this study, we have compared the classification accuracy with two well know supervised classifiers VIZ Support Vector Machine (SVM) and Wishart Classifier. SVM classifier gave an overall accuracy of 91.088%, and Wishart classifier gave an overall accuracy of 91.076%.

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Optimal Design of CMOS Analog Circuit Using Enhanced Grey Wolf Optimization Algorithm

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Abstract:--

An enhanced version of Grey Wolf Optimization Algorithm (GWO) named Enhanced Grey Wolf Optimization Algorithm (EGWO) is presented in this paper to optimally design one of the most commonly used analog circuits i.e., Complementary metal-oxide semiconductor (CMOS) differential amplifier circuit. The conventional GWO algorithm is the mathematical modelling of social hierarchy and hunting behavior observed in grey wolves. The EGWO algorithm enhances the exploration ability of conventional GWO algorithm by incorporating the non-linearity and randomness in the process of position update. Firstly, the EGWO algorithm is applied to obtain the transistor sizes of the above-said circuit to reduce the area occupied by the transistors and simultaneously maintaining the performance metrics, in MATLAB. The validation of the parameters obtained is done using the CADENCE. The simulation results and convergence plots demonstrate the superiority of EGWO over few of the other competing algorithms from the recent state of the art.

Exploring the capability of C- band Sentinel 1B data for Land cover classification water body mapping and oil spill detection

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Abstract:--

In this study, we have explored the capability of latest C band Synthetic Aperture Radar (SAR) SENTINEL 1B data for land cover application, waterbody mapping and oil spill detection in the southern coastal corridor of Andhra Pradesh. From this study, we can know the importance and selection of co polarization and cross polarization channels both for land and ocean applications. The Co polarization (VV) channel enables better results for ocean applications, and similarly, Cross polarization (VH) enables better results for land application. SAR has different backscattered values for different targets, using those values we can perform water body mapping and oil spill detection. We have used Lee filter for speckle filtering with 5x5 as window size. We have used SVM classifier for classification, and the results were satisfactory. The accuracy assessment was performed using confusion matrix with Overall Accuracy of 83.3% , and validation was performed using Google Earth and Sentinel 2A optical data.

Keywords:--

Sentinel 1B, Land Cover classification, Water Body Mapping, Oil Spill detection, SVM.

0.603pJ/bit On Die Termination using current mode logic in 130nm CMOS for 10Gb/s Backplane Channel

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Abstract:--

On die termination plays a pi-vital role in reducing the reflection loss across the transceiver circuitry. Inter symbol interference is caused by the band limiting nature of the channel. A circuit which reduces the effect of channel loss meeting the power budget specifications is needed. The proposed circuitry is designed in current mode logic design with open drain configuration. The designed circuitry has power efficiency of 0.603pJ/bit in 130nm CMOS technology.

Baseline Wander Correction in ECG using EEMD

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T.V.K. Hanumantha Rao, Associate Professor, Department of Electronics and Communication Engineering, National Institute of Technology, Warangal, Telangana, India.

Abstract:--

The electrocardiogram (ECG) is a noninvasive method which represents graphically an electrical activity of heart. It is often contaminated with various artifacts/noises such as muscle contraction noise, power-line interference, baseline wander (BW) etc., therefore, the removal of artifacts is vital for proper diagnosis and detection of heart diseases. In this paper, Ensemble Empirical Mode Decomposition (EEMD) is presented for denoising ECG signal. Its predecessor Empirical Mode Decomposition (EMD) has a mode mixing problem that is same oscillation are appears in different mode or widely distinct scale are originate in one mode. This problem is solved by EEMD which is noise-assisted scheme. In this work baseline correction for ECG signal have been proposed for several arrhythmia and normal sinus rhythm database. The experimental outcomes show that EEMD based scheme outperforms better compare to other in quantitative as well as restoring the ECG morphology with less distortion.

Keywords:--

ECG, EMD, EEMD, Baseline Wander.

Particle Filter based Neural Activity Tracking

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Abstract:--

Tracking of a neural activity is useful for better understanding of the cerebrum. It is monitored through Electroencephalography (EEG) taking into account the dipolar sources inside the brain. Neural action tracking systems have enhanced the comprehension and treatment of genuine neurological issues like epilepsy and Parkinson's diseases. In particular, these strategies are utilized to recognize various types of seizures that takes into consideration the location and orientation of the seizure foci. These methods proposed and implemented offer enhancement of results of epilepsy surgery. In this paper we used Particle filter to track the location of dipole sources. Thus introduced the role of resampling schemes in the particle filters and their performance comparison with the maiden process.

Keywords:--

EEG, Particle filter, resampling, localization, inverse problems.

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, 12th & 13th, July 2018

Colour Image Security and Data Hiding Using Dwt-Svd Transforms and Ecc Encryption

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Abstract:--

Two types of data hiding techniques are most popular in today's world, they are cryptography and steganography. Where cryptography is science of writing secret code and steganography is science art and of hiding the secret code. In cryptography data is converted to unreadable format, so that unauthorized users cannot access the secret data. Where in steganography the secret data is hidden into digital media like video, image and audio. The combination of steganography and cryptography techniques will provide the higher security while communicating on the open channel. In the proposed system Elliptic curve cryptography (ECC) technique is used for data encryption and steganography uses DWT-SVD method to hide the encrypted data. These two techniques will provide higher security and the system yields high quality image, less memory utilization, more complexity and higher embedded capacity.

Keywords:--

Cryptography, Steganography, ECC, DWT-SVD.

Paser for Airborne Mesh Networks Using Bloom Filters

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Abstract:--

Squat-altitude unmanned in-flight vehicle (UAVs) blend through WLAN system networks (WSNs) has facilitate the coming out of airborne community- assisted correspondence. In devastation remedy, they may be key solutions for 1) on-call for ubiquitous network get right of access to and 2) a pair of inexperienced exploration of sized regions. Contemporary protection standards, which includes the IEEE 802.11i and the safety mechanisms of the IEEE 802.11s mesh good sized, are prone (exposing routing attacker) to routing assaults as we experimentally confirmed in previous works, where in it is well-known, at ease routing protocol ARAN, without making restrictive assumptions. Therefore, at ease routing protocol is vital for making viable the deployment of UAV-WMN. As an extended way we realize, not one of the winning research techniques have acquired popularity in exercise because of their excessive overhead or sturdy assumptions. Here, we present the vicinity-aware, relaxed, and inexperienced mesh routing technique (PASER) with the extension of Bloom Filters. PASER achieves comparable regular overall performance results because of the nicely-set up, non-secure routing protocol HWMP (Hybrid wireless mesh protocol) combined with the IEEE 802.11s safety mechanisms. We implemented BLOOM FILTERs instead of HMAC.

Keywords:--

Routing Protocol, UAV's, UAV-WMN, Bloom Filters

Application of Directional Bat Algorithm to Combined Economic and Emission Dispatch problems

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Abstract:--

In this paper, the Directional Bat Algorithm (DBA) has been proposed to find the better solution for Combined Economic and Emission Dispatch (CEED) problems. The main objective of the CEED is to minimization of generation cost and emission levels, while satisfying the required load demand along with equality and inequality constraints. The production of electricity from the fossil fuel power plants releases large containments of oxides of Nitrogen (NOx), Sulphur (SOx) and Carbon (COx) into the atmosphere. Standard Bat algorithm (SBA) depends on swarm intelligence and motivation from echolocation behavior of micro bats. SBA is utilized echolocation procedure to find the local/global optimal solution, but SBA has less exploration ability, so premature convergence can occur. To avoid this drawback, an investigative approach based on the capability of directional echolocation characteristics of micro-bats is introduced to the SBA to improve its exploration and exploitation capabilities. The DBA has been executed on four different test cases, having transmission losses including valve point effects. In order to show the effectiveness of DBA, it has been compared with other algorithms in the literature. Results show that the DBA is more powerful than other algorithms.

Hydrodynamic studies comparison by simulation with experimental results of reverse fluidized bed

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Abstract:--

In present days we are much believed computer aided (simulation) results much more than our experimental results even though time consumption, low-cost processes and we can get the efficient results when compare to experimental results. In this task I compared my experimental results with simulation results (Ansys fluent version 17.2) in the solid liquid reverse fluidized bed system. In this I did this comparison using Gidaspow drag model and remaining parameters were same the particle diameter was changed. I found that the hydrodynamic behavior by experimentally and by simulation those were bed height profile, pressure drop profile and Voidage profile by changing the velocity profile

Key words:--

Reverse fluidization, Simulation, Hydrodynamics

Soil Conservation Impacts in Musi Project Using InVEST Model

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Abstract:--

Soil erosion is one of the most serious problems ascending from agricultural growth, land degradation and other human activities. Assessing the soil erosion is useful in scheduling and preservation activities in a watershed or basin. Modelling is useful in providing a quantitative and steady approach in the approximation soil loss and sediment yield under a wide range of conditions. In this investigation, the silt conveyance proportion demonstrate, Revised Universal Soil Loss Equation (RUSLE) acclimatized with GIS has been utilized to gauge residue conveyance and maintenance in the Musi Project situated in the southeastern piece of Telangana district. The Musi Project is a tropical damp zone having a development of 10741 km2 up to the Musi dam.

Key words:--

Rainfall Erosivity, Soil Erodibility, Land use and Land cover, Drainage layer, Watershed, Biophysical tables.

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, 12th & 13th, July 2018

Material Components and Techniques used in Green Buildings - A Review

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Abstract:--

The term "green building" is used to describe buildings that are designed, constructed, and operated, to have a minimum impact on the environment, both indoor and outdoor. In this highly polluted world, there aren't many places where we can find zero toxic gases and polluting substances. Since many decades, many people have been trying to reduce this pollution. But the emission of new pollutants is making the effort null and void. So, instead of trying to eradicate the pollution, people have learned to try and reduce it by coming up with the idea of green buildings. An overview of those Green Buildings is discussed in this paper. It also explains how Green Buildings counteract the effect of urban and rural development on the environment. Along with the components inside a Green Building, this paper also includes different procedures and techniques used to achieve a perfect environmental friendly Green Building. Also, you can find different case studies of Green Buildings like Green Building Movement in India, Existing Green Buildings, New Green Buildings, Green Pro-Green Product Certification, and studies on Green Building Materials their types, advantages and disadvantages.

International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies

Narsapur, Telangana, 12th & 13th, July 2018

A Comparative Study on Temperature Variance and Compact Heat Exchanger Performance by Using Different Fluid Blends

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Abstract:--

Compact heat exchangers are the critical cryogenic components which are characterized on its heat transfer which is enhanced as per the transfer rate per unit volume surface area of the exchanger. The design can be varied and authorized based on the flow (counter) which is fabricated for industrial and future applications. The performance of the exchanger is found by obtaining difference in mass flow rates. In this research we have taken blends of three different fluids which are mixed up with water to find the temperature variance and performance during different time with varying different flow rates and temperatures. Here in such cases the pressure is kept constant for both hot and cold sides. Due to variance in different temperatures and flows the mass flow rates according the time variance which gradually increases. Various working fluids considerations have been done for minimizing the pressure losses that are presented or obtained. The fluid blends like IPEX coolant, Castrol, Shell Diala S4ZX-1 has taken as blends with 2% and 4% blend mixtures with distilled water. The temperatures are varied two times during the flow that is 600c and 800c and each fluid is enhanced at both these temperatures. Finally we can obtain the better flow rate for the mixtures taken for all the fluids. Temperature variance is shown for all the blends with respect to the time intervals taken that is for 600sec and the values is authorized for each 60sec. with this we have present the best blend percentage mixture among the fluid blends taken with respect mixed proportions.

Keywords:--

Compact heat exchanger, temperature variance, IPEX coolant, Castrol, Shell Diala S4ZX-1.

Current Challenges in Electrical Power Systems

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Abstract:--

This work presents evolution of old-fashioned power systems from its minor magnitude to the current state that integrate renewables, distributed energy resources, demand-side management, smart grid, micro grid and electric market deregulation and restructuring. There has been a greater magnitude of complexity and challenges resulted in as it evolved in terms of operational aspects, analysis of various important features such as management and control. This work also presents the challenges that are faced in the process of analysis due to huge amount data involved. Additionally, computational techniques used in power systems such as parallel processing, distributed computing and grid computing are discussed together with the state-of-the-art cloud computing and its applications for efficient and reliable management of the power systems along with an appropriate conclusion on the current scenario and future requirements.

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978-81-937041-9-6