



**International conference on Recent Advancements in
Engineering and Technology**

**Hyderabad, Telangana
15th & 16th March, 2019**

**Organized by:
Siddhartha Institute of Technology & Sciences
and
Institute For Engineering Research and Publication (IFERP)**

From Director's Desk



Rudra Bhanu Satpathy.,

Director,

Institute For Engineering Research and Publication.

On behalf of *Institute For Engineering Research and Publications (IFERP)* and in association with *Siddhartha Institute of Technology & Sciences*, Hyderabad, Telangana. I am delighted to welcome all the delegates and participants around the globe to *G Siddhartha Institute of Technology & Sciences, Hyderabad, Telangana* for the “*International conference on Recents Advancements in Engineering and Technology (ICRAET-19)*” Which will take place from *15th - 16th January'19*

Transforming the importance of Engineering, the theme of this conference is “*International conference on Recents Advancements in Engineering and Technology (ICRAET-19)*”

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, coordinator (**IFERP & SITS**) 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 *Hyderabad, Telangana*.

Sincerely,



Rudra Bhanu Satpathy

Preface

The “*International conference on Recents Advancements in Engineering and Technology*” is being organized by *Siddhartha Institute of Technology & Sciences*, Hyderabad, Telangana in association with *IFERP-Institute for Engineering Research and Publications* on the 15th – 16th March, 2019.

Siddhartha Institute of Technology & Sciences has a sprawling student –friendly campus with modern infrastructure and facilities which complements the sanctity and serenity of the major city of Hyderabad in Telangana.

The “*International conference on Recents Advancements in Engineering and Technology*” 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 “**Engineering and Technology**” which were given international values by *Institute for Engineering Research and Publication (IFERP)*.

The International Conference attracted over 113 submissions. Through rigorous peer reviews 62 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.

ICRAET-2019

Shri. C.R.Jagadish,

**President, Siddhartha Institute of Technology & Sciences,
Hyderabad, Telangana**



President Message

It gives me immense pleasure to pen that Siddhartha Institute of Technology & Sciences is organizing an **International conference on Recents Advancements in Engineering and Technology (ICRAET-19)** in association with the Institute For engineering research and publication (IFERP) on 15th and 16th March 2019. The applications of any advances Engineering & Technology is to facilitate the nation for its development.

The conference is aimed to serve as a premier venue for the dissemination of leading edge research in **Engineering & Technology**.

I hope that this conference would certainly light up innovative ideas by paving way to new inventions and integrate new technologies in the Engineering & Technology sector and the deliberations in the conference will help researchers from academia, industry and the conference will provide a platform for initiating collaborative research projects.

All the best.

(Shri. C.R.Jagadish)

Dr.M.Anwarullah,

**Principal, Siddhartha Institute of Technology & Sciences,
Hyderabad, Telangana**



Principal Message

I congratulate Siddhartha Institute of Technology & Sciences for holding this **International conference on Recents Advancements in Engineering and Technology (ICRAET-19)** on 15th – 16th March 2019. This international conference that is being organized in the institute. I am sure about the conference that it will serve an effective platform for the technocrats to share their ideas and research. I always encourage to such type of event, which eventually make the society technology aware.

I wish every success to the conference.

(Dr.M.Anwarullah)

Dr.Velmani Ramasamy,

**HOD / ECE, Siddhartha Institute of Technology & Sciences,
Hyderabad, Telangana**



HOD Message

It is a great pleasure for me that our Siddhartha Institute of Technology and Sciences is conducting a international conference on "Recent Advances in Engineering and Technology" (ICRAET -19).

Today, the world is undergoing vast changes in technological revolution, population growth and environmental concerns. All these changes create unique challenges for engineers.

The purpose of this conference is to bring together academia, researchers, experts from industry, and other interested organizations to meet, exchange information and ideas in developments in engineering applications.

Invited contributions from experts on various topics with separate divisions on Electronics & Communications, Computer Science, Electrical & Electronics, Civil, and Mechanical are presented in the proceedings.

This conference also provides a platform to our students to exhibit their inherent talents both as participants and organizers.

I place on records with appreciation the hard work, involvement and effort taken by the team of staff and students in organizing this conference.

I hope this conference ICRAET-19 will be memorable, enjoyable, and creative for all participants and looking forward to the technical innovations that result from your grouping and discussions.

I take this opportunity to record my heartfelt appreciation and gratitude to all the authors, delegates, conference organizers, management and all others participating.

I congratulate all the concerned with gratitude and wish the conference a grand success.

Sincerely, and best wishes,

(Dr.Velmani Ramasamy)

Dr.G.Sudhagar ME PhD,
Professor/ECE , Siddhartha Institute of Technology & Sciences,
Hyderabad, Telangana



Organising Chair Message

It is a great pleasure for me that our It feels proud to the Siddhartha Institute of Technology & Sciences is organizing “International conference on Recent Advancements in Engineering and Technology” (ICRAET-19)

The conference is a meeting and information exchange between the end user, the development and the research communities. The purpose of this conference is to bring together researchers, experts from industry, academia, and other interested organizations to meet, exchange information and ideas in developments in the field of Electronics and Communication Engineering. It brings together the newest developments in new technologies; engineering solutions, and academic research results. The conference program has been designed to provide ample opportunities to researchers to network and to share ideas and information about the Electronics and Communication Engineering.

I hope this conference ICRAET-19 will be enjoyable, memorable, and productive for participants and looking forward to the technological innovations that result from your networking and discussions.

I wish lots of success to the conference.

Thanking you

(Dr.G.Sudhagar)

ICRAET-19

*International conference on Recent
Advancements in Engineering and
Technology*

Keynote Speakers



Dr. Ande Murali Varaprasad
Professor & Director CIGS

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. Vijay Tharad.,

Director Operations at Corporate Professional Academy
Technical Training & Career Development
Mechanical or Industrial Engineering

BIOGRAPHY

Dr. Vijay Tharad is currently Director Operations at Corporate Professional Academy for Technical Training and Career Development and caters to the Technical Training needs of employees of corporate world and provides consultancy services to Universities and Engineering Colleges for Career development of engineering students for smooth switch over from Academic world to corporate culture and work ethics. He has recently retired from Multinational Company Caterpillar India Private Limited after serving them for over 25 years where he was Chief Technical Training consultant for Cat products mainly Diesel Engine, Generator sets and Heavy Earth Moving Machines.

Vijay Tharad has an extensive background in diesel engine, modern electronic controlled diesel engine and latest after treatment technology since 1989. He was involved with training thousands of Cat employees and other corporate employees on emission control systems to help diesel and alternative combustion engines meet future regulated limits. He has authored training material on Diesel Emissions and Their Control, a comprehensive handout, and continues to present seminars in diesel engine technology, selective catalytic reduction for diesel engines, and exhaust gas recirculation.

(Dr. Vijay Tharad)

ICRAET -19

International Conference on Advances in Signal Processing, Power, Embedded, Soft Computing, Communication and Control Systems

Hyderabad, Telangana, March 15th - 16th, 2019

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Organising Chair

Dr.G.Sudhagar, Professor/ECE , Siddhartha Institute of Technology & Sciences, Hyderabad,
Telangana

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ICRAET-19

**International conference on Recent
Advancements in Engineering and
Technology**

**Hyderabad, Telangana
15th & 16th March, 2019**

ABSTRACTS

ICRAET-19

Organized by

**GSiddhartha Institute of Technology & Sciences
and
Institute For Engineering Research and Publication (IFERP)**

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

A Comprehensive review on Video Imaging Techniques

Farooq Sunar Mahammad., School of Computing Science and Engineering, VIT University, Vellore, INDIA

Karthik Balasubramanian., Karthik Balasubramanian, Process and equipment Engineer, MSAO Pvt.Ltd, Singapore

T. Sudhakar Babu., Department of Electrical and Electronics Engineering, G.Pullaiah college of Engineering and Technology, INDIA

V.MadhuViswanatham., School of Computing Science and Engineering, VIT University, Vellore, INDIA

Abstract:--

In today's world, Video imaging techniques are extremely important due to its manifold advantages as they contribute extensively to connectivity of people from one part of the world to another. In this constrain the authors focused to emphasize the numerous technologies available for video image process, highlights of the significant research works carried out in Video imaging techniques has been represented as a review article. Further the article will give the more information about latest techniques; it also summarizes the features of all works with respect to video imaging processing techniques. Hence, the objective of this work is to benefit scientists and new entrants in the field of Video imaging to get overview of the technologies.

Keywords:--

P2P Video Streaming, Real time video streaming, Non-Real time video streaming.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recent Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Detection of Power Theft using GSM

K. Kruthi Sai Amulya., Department of Electrical and Electronics Engineering , Velagapudi Ramakrishna Siddhartha Engineering College (Affiliated to JNTUK) Vijayawada, India

B.V Surya Pavan., Department of Electrical and Electronics Engineering , Velagapudi Ramakrishna Siddhartha Engineering College (Affiliated to JNTUK), Vijayawada, India

J.Ramesh., Associate Professor ,Department of Electrical and Electronics Engineering , Velagapudi Ramakrishna Siddhartha Engineering College (Affiliated to JNTUK) Vijayawada, India

Abstract:--

At present energy theft is a serious problem in the developing countries like India, Pakistan, Srilanka, etc. If the electricity is illegally used it effects the economic status of the country. In real time application it is very difficult to verify theft occurred and solve it at individual level. Various kinds of energy theft comprised of meter tampering, bypassing the energy meter, direct hooking from line, etc. This paper proposes the detection of energy theft using Arduino and GSM module. LCD is provided to display the data of power usage and also the power being theft i.e., the difference between the consumers load and the theft load which is sent to the GSM module. Further this information is sent to the electricity board and also to the consumer as a message which embodies the distribution transformer details. The power is fed from the transformer to the Arduino which is being stepped down. The major advantage of this paper is when compared to the existing system, it detects the power theft and sends the information of the corresponding feeder using GSM module to electricity board directly without manually filing a complaint and also in case of power failure, the message is sent without any interruption as Arduino is facilitated with power backup.

Keywords:--

Arduino, GSM, Energy theft, Current transformer.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

A Review on the Impacts of Differently Abled Human Computer Interactions and their Quality of Life

K.Venkatesh Sharma., Professor, Department of CSE, CVR College of Engineering, Hyderabad, India.

D.Sasikala., Professor, Department of CSE, CVR College of Engineering, Hyderabad, India

Abstract:--

Human-computer interaction (HCI) consultants recommend methods aimed at construction of the interfaces to software purposes. These highlights evolving an inherent interpretation of user features and errands. As significant as HCI is for constructing plug-ins worked out via the common people, yet it is further vital if the focus onlookers are differently abled humans (DAHs). Amending the existing designed software is under process headed for improving the quality of life for DAHs and their assisting analysts is ensured. Analysis, review and a detailed study were performed that includes inferred advices from counselors/analysts and DAHs in and around our living circumstances to enhance the DAHCI artefact. The responses of all stakeholders are considered for the efficacious devising of this system by means of the rigorous needs noted from the exploration of this research.

Keywords:--

Human-computer interaction (HCI), Differently Abled Humans (DAHs), Differently Abled Human-computer interaction (DAHCI), Quality of Life, effectiveness, efficiency.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Wireless Power Transmission

Korabandi Surya., Department of Electrical and Electronics Engineering, Velagapudi Rama Krishna Siddhartha Engineering College, Vijayawada, Andhra Pradesh 520007, INDIA

Kumba Praneeth Paul., Department of Electrical and Electronics Engineering, Velagapudi Rama Krishna Siddhartha Engineering College, Vijayawada, Andhra Pradesh 520007, INDIA

Dr.J Ramesh., Department of Electrical and Electronics Engineering, Velagapudi Rama Krishna Siddhartha Engineering College, Vijayawada, Andhra Pradesh 520007, INDIA

Abstract:--

In this paper, design of High Frequency Wireless power transfer (HFWPT) system is to be proposed. HFWPT technology will be the next generation technology due to its vast applications. Scientists are mainly showing interest on improving the efficiency of magnetic link section. This work is to be concerned with the design of coils, driving converters and creating resonance. Design of HFWPT system is to be operated at resonance frequency of 50khz. It is to expect that the high frequency resonance coupling will improve the efficiency of transmission allowing one to transmit at lesser frequency nearly in a few kHz range . The total proposed work is to be designed in order to maintain the output voltage as required by changing the coupling coefficient.

Keywords:--

Wireless Power Transmission, Resonance, Efficient power transmission, High Frequency, Design of winding.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Design of Suspension Energy Regeneration System

M. Raju., Assistant Professor, Mechanical Engineering Department, ACE Engineering College, Hyderabad, Telangana, India

Mohd. Hasham Ali., Assistant Professor, Mechanical Engineering Department, MJCET, Hyderabad, Telangana, India

S. Irfan Sadaq., Assistant Professor, Mechanical Engineering Department, MJCET, Hyderabad, Telangana, India.

Abstract:--

Two wheeler vehicles and heavy vehicles use shock absorbers to prevent them from vibrations on rough roads. Heat energy is dissipated by conventional shock absorbers. Shock absorbers energy can be is dissipated by mean of kinetic energy recovering systems. The present works aims in influential the efficiency of efficiently converting the heat energy into electrical power by optimizing the design of regenerative electromechanical structure. Thereby electrical power may be able to be used to boost batteries or supplementary efficient storage energy devices slightly than survive dissolute.

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Hyderabad, Telangana, 15th – 16th March 2019

Implementation of Pmbldc Motor Driven Electric Vehicle Powered By Solar

M. V. Ramesh., Associate Professor, PVP Siddhartha Institute of Technology, Vijayawada

M. Ravi Kumar., Assistant Professor, PVP Siddhartha Institute of Technology, Vijayawada

T. Srinivasa Rao., Assistant Professor, PVP Siddhartha Institute of Technology, Vijayawada

Abstract:--

In the recent years the awareness on the global warming effect leads to the interest in development of electric vehicle technology for all the stakeholders. The technology is growing rapidly. With more concern on our environment Solar PV system is being introduced. The aim of this paper is to present application of solar PV system to electric vehicle along with its design aspects. The driven system to the electric vehicle is through PMBLDC motor drive. The input to the PMBLDC motor is taken from the battery bank. The battery bank is employed for the storage of the power. The power generated by the PV system is to be transmitted through MPPT charge controller, battery bank and PMBLDC motor.

Keywords:--

Solar PV system; MPPT; Battery bank; PMBLDC motor; Electric Vehicle.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Design of Brake Disc with Radial Grooves and its Efficient Cooling System Analysis by Computational Fluid Dynamics Software CFX

Md Sadiq Mohiuddin., Research Scholar, Mewar University, 2. Research Supervisor, Mewar University, India

G.M.Sayeed Ahmed, Research Scholar, Mewar University, 2. Research Supervisor, Mewar University, India

Abstract:--

Braking system performance is an important vital element in an automobile. During the rotation of the disc brake it has to experience sudden change in temperatures while braking and again releasing the brake for attaining speed of the vehicle therefore the amount of heat generated and must dissipates from the brake elements during a small span of time. The absorbed and dissipated heat must be effective in order to attain desirable performance of the braking system. If heat dissipation from the brake disc surface not properly controlled then the excessive surface temperatures within the disc brake become too high and might cause excessive damage to disc surface and also leads to brake pad wear. In scenario of the demand of effective braking applications the radially grooved vanes are incorporated in the brake disc for enhancing the heat dissipation. In order to evaluate and quantifying the application of radial grooves the heat transfer analysis the procedures of Computational fluid Dynamics analysis is applied for obtaining better comparative results of with and without radial grooves. The analysis of domain has been done by using computational fluid dynamics based software CFX. An attempt has been made in this paper is to research the temperature field analysis and air flow characteristics of brake disc with radial grooves. The CFD code CFX was applied to simulate the temperature distribution in the radial grooves domain. A substantial enhancement has been achieved after incorporating radial grooves in the disc surface and the simulations results are confirmed that radial grooves would increase heat dissipation from the brake disc surface.

Keywords:--

Disc Brake, Surface temperatures, CFD, Rotor, CFX, Radial Grooves

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Analysis of Two Bladed Vertical Axis Wind Turbine Using CFD

Mohd. Hasham Ali., Assistant Professor, MED, MJCET, Hyderabad, Telangana

S. Irfan Sadaq., Assistant Professor, MED, MJCET, Hyderabad, Telangana

Dr. Syed Nawazish Mehdi., Professor, MED, MJCET, Hyderabad, Telangana

Abstract:--

A vertical axis wind turbine (VAWT) is able to agreeable to fulfill the requirements of human needs. In adding up to life form eco-friendly, it is relatively very cheaper than as compared with conventional schemes of electricity generation at present. Kinetic energy i.e. wind velocity is used to generate electricity by converting the mechanical energy, which is accessible in profusion and unlimited. By using this kind of systems there are has no negative effects on the environment. As the maintenance cost and operating cost are negligible which is better than other conventional methods. The work aims in evaluating the performance of savonius vertical axis wind turbine at various speeds from 1m/s to 5m/s on NACA 8420 aerofoil profile blade and deflection of air flow as per the change of velocity (in rpm) with a blade angle 0o and curvature of the blade at 15o. The flow rate of air can be determined based on the streamlines.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Architectural Framework on Bigdata Analysis

R.Venkateswara Gandhi., Research Scholar, University of Technology, Vatika, Jaipur.

Abstract:--

Enterprise Architecture (EA) Implementation Methodologies have turned into a critical piece of EA projects. Several implementation methodologies have been proposed, as a hypothetical and down to earth approach, to encourage and bolster the advancement of EA within an enterprise. The significant question when facing the starting of EA implementation is to decide which methodology is to be implemented. This paper discusses the implementation of enterprise architecture in Big Data. Several criteria's like EAP,TOGAP are being revised. In this paper we discuss the Enterprise architecture for Big Data. The Hadoop eco system is being discussed.

Keywords:—

Enterprise Architecture, Big Data,Hadoop,Spark,Flume.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Review Spam Detection Using Xgboost Algorithm

S Kranthi Reddy., Assistant Professor, Department of Computer Science & Engineering, Vignan Institute of Technology and Science

Siddhartha Choudhary., B.Tech (CSE), Vignan Institute of Technology and Science

R Pranavi., B.Tech (CSE), Vignan Institute of Technology and Science

Sameer Younus., B.Tech (CSE), Vignan Institute of Technology and Science

A Koushik., B.Tech (CSE), Vignan Institute of Technology and Science

Abstract:--

A formal assessment of a service or product is called a review. A spam review is one that misrepresents either the relationship of the reviewer to the business, misrepresents the nature of the interaction the reviewer had with the business, or breaks a guideline. Almost every website requests it user to post their reviews for other people to get an idea about their product and service. Online reviews composed collaboratively by many independent internet reviewers can help consumers make purchase decisions and enable enterprises to improve their business strategies. As customers are being deceived this way, recognizing and removing fake reviews is of great importance. There are three types of review spam: Untruthful opinion, Reviews on brands only and non- reviews.

Keywords:—

User behaviour, feature engineering, classification, fake reviews.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Evaluation of Interfacial Fractured Surface in Aluminum– Brass Joint by Friction welding process through Image Processing Technique.

Syed Sibghatullah Hussaini Quadri., Research Scholar, Mewar University

G.M. Sayeed Ahmed., Research Supervisor, Mewar University

Abstract:--

Welded Interfacial cracks in the friction welding of dissimilar metals are most important aspect for assessment of welding quality and welding strength. Manual inspection of the friction welded joint is purely depends on the skilled operators observations and experience in evaluating porosities, irregularities, cracks, and voids. The defects are traced by manual inspection based on experts experience and knowledge with respect to the combination of two dissimilar metals and their compatibility. In this research, an attempt has been made to apply the effectively technique for image assessment of the welded surface known as Image segmentation technique (IST) in determining the welded surface quality of dissimilar joint by friction welding. The weld bonding quality between dissimilar metals in friction welding is dependent on coefficient of friction between the welding surfaces. In order to explore the capabilities of the image segmentation technique friction welding experiments were conducted with various factors such as Coefficient of friction, Friction time, Friction pressure, speed, Torque of rotating work piece. Experiments were validated with the image processing results and claimed that the proposed image processing technique is an effective method in the assessment of fractured surfaces. Image processing technique is found to be easier in interfacial crack detection, reducing the computation cost, high-speed method with more accuracy in tracing welded defects. This method has a significant improvement in the quantification of fractured surface, crack detection and non-welded areas detection in terms of segment Pixels at the desired welded region and easy when compared to conventional detection techniques by using operator's decisions.

Keywords:—

Friction Welding, Aluminum, Brass, Dissimilar Joint, Image Processing Technique.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Modeling of Energy Saving Circuit for House hold Appliances

Tejaswini .K., Department of Electrical and Electronics Engineering, Velagapudi Ramakrishna Siddhartha Engineering College ,
Vijayawada, Andhra Pradesh, 520007, India

Sai Kumar .T., Department of Electrical and Electronics Engineering, Velagapudi Ramakrishna Siddhartha Engineering College ,
Vijayawada, Andhra Pradesh, 520007, India

Ramesh .J., Department of Electrical and Electronics Engineering, Velagapudi Ramakrishna Siddhartha Engineering College ,
Vijayawada, Andhra Pradesh, 520007, India

Abstract:--

In the present day scenario due to the limited availability and depletion of conventional energy sources relying on non- conventional energy source is the best alternative for this problem .On the other hand better utilisation of non-conventional energy sources has to be made to bring down the power consumption cost .In this prototype a relevant solution is being made by automatic transfer switch and it can be implemented for household appliances. The automatic transfer switch is microcontroller based platform where the switching between utility service and solar PV system is made to power up the devices in such a way that cost of power consumption decreases. In this prototype Arduino platform based Atmega 328 p-pu microcontroller is used to control the switching operation .According to the voltages of utility and solar the switching action takes place. So in order to measure the voltages of utility service and solar powered batteries voltage divider circuits are being used and these analog values are given to microcontroller and upon comparison of these two values the switching i.e powering up of devices takes place in such a way that the electricity bill decreases as compared to conventional processes such as off-grid system. In this project the switching of devices is done using basic components in order to minimize the cost and one other hand meet the aim with accuracy.

Index Terms:—

Hybrid grid system, off-grid system, arduino, priority loading.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Development of Mathematical Model to Predict the Co Efficient Of Performance in a Vapour Compression Refrigeration System Working With R404a

Dr.SP.Arunkumar., Professor, Department of Mechanical Engineering, Siddhartha Institute of Technology and Sciences, Narapally, Telangana – 501301, India

C.Prabha., Assistant Professor, School of Mechanical Engineering, Karunya University, Coimbatore, Tamilnadu – 641 114, India

Dr.Naveen Kumar., Professor, Department of Mechanical Engineering, Siddhartha Institute of Technology and Sciences, Narapally, Telangana – 501301, India

Abstract:--

This paper presents a systematic approach to develop the mathematical model for predicting the coefficient of performance of R 404a which is an eco friendly refrigerant and widely used in refrigeration and airconditioning industries. The process parameters are coil diameter, coil pitch and coil length. Response surface methodology (RSM) is employed to develop the mathematical model. Analysis of Variance (ANOVA) technique is used to check the adequacy of the developed model. The developed mathematical model can be used effectively at 95% confidence level. The coefficient of performance of R404a in a vapour compression refrigeration system has been analyzed in detail.

Index Terms:—

ANOVA, Vapour Compression Refrigeration, R404a, Coil dia, Coil Pitch, Capillary Tube

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Keyword Search over Distributed Graphs with Compressed Signature

Dr. Srihari CH., Professor, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

A.Manasa., Assist. Prof, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

G.Pavani., Assist. Prof, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Abstract:--

Graph keyword search has drawn many research interests, since graph models can generally represent both structured and unstructured databases and keyword searches can extract valuable information for users without the knowledge of the underlying schema and query language. In practice, data graphs can be extremely large, e.g., a Web-scale graph containing billions of vertices. The state-of-the-art approaches employ centralized algorithms to process graph keyword searches, and thus they are infeasible for such large graphs, due to the limited computational power and storage space of a centralized server. To address this problem, we investigate keyword search for Web-scale graphs deployed in a distributed environment. We first give a naive search algorithm to answer the query efficiently. However, the naive search algorithm uses a flooding search strategy that incurs large time and network overhead. To remedy this shortcoming, we then propose a signature-based search algorithm. Specifically, we design a vertex signature that encodes the shortest-path distance from a vertex to any given keyword in the graph. As a result, we can find query answers by exploring fewer paths, so that the time and communication costs are low. Moreover, we reorganize the graph data in the cluster after its initial random partitioning so that the signature-based techniques are more effective. Finally, our experimental results demonstrate the feasibility of our proposed approach in performing keyword searches over Web-scale graph data.

Keywords:—

Keyword search, Search problems, Algorithm design and analysis, Servers, Partitioning algorithms, Distributed databases, Resource description framework.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Query Reorganization Algorithms for Efficient Boolean Information Filtering

Dr.Shashi Bhanu., Professor, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

T.Harikrishnan., Assist. Prof, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

D. Sammaiah., Assist. Prof, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Abstract:--

In the information filtering paradigm, clients subscribe to a server with continuous queries that express their information needs and get notified every time appropriate information is published. To perform this task in an efficient way, servers employ indexing schemes that support fast matches of the incoming information with the query database. Such indexing schemes involve (i) main-memory trie-based data structures that cluster similar queries by capturing common elements between them and (ii) efficient filtering mechanisms that exploit this clustering to achieve high throughput and low filtering times. However, state-of-the-art indexing schemes are sensitive to the query insertion order and cannot adopt to an evolving query workload, degrading the filtering performance over time. In this paper, we present an adaptive trie-based algorithm that outperforms current methods by relying on query statistics to reorganise the query database. Contrary to previous approaches, we show that the nature of the constructed tries, rather than their compactness, is the determining factor for efficient filtering performance. Our algorithm does not depend on the order of insertion of queries in the database, manages to cluster queries even when clustering possibilities are limited, and achieves more than 96% filtering time improvement over its state-of-the-art competitors. Finally, we demonstrate that our solution is easily extensible to multi-core machines.

Keywords:—

Indexing, Clustering algorithms, Servers, Data models, Vegetation, information filtering, query processing.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

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Institute For Engineering Research and Publication (IFERP)

International conference on Recent Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Spectral Ensemble Clustering Via Weighted K-Means: Theoretical and Practical Evidence

T.Upendel., Assist. Prof, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

G.Ramya., Assist. Prof, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

K.Pratap., Assist. Prof, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Abstract:--

As a promising way for heterogeneous data analytics, consensus clustering has attracted increasing attention in recent decades. Among various excellent solutions, the co-association matrix based methods form a landmark, which redefines consensus clustering as a graph partition problem. Nevertheless, the relatively high time and space complexities preclude it from wide real-life applications. We therefore propose Spectral Ensemble Clustering (SEC) to leverage the advantages of co-association matrix in information integration but run more efficiently. We disclose the theoretical equivalence between SEC and weighted K-means clustering, which dramatically reduces the algorithmic complexity. We also derive the latent consensus function of SEC, which to our best knowledge is the first to bridge co-association matrix based methods to the methods with explicit global objective functions. Further, we prove in theory that SEC holds the robustness, generalizability and convergence properties. We finally extend SEC to meet the challenge arising from incomplete basic partitions, based on which a row-segmentation scheme for big data clustering is proposed. Experiments on various real-world data sets in both ensemble and multi-view clustering scenarios demonstrate the superiority of SEC to some state-of-the-art methods. In particular, SEC seems to be a promising candidate for big data clustering.

Keywords:—

Linear programming, Clustering algorithms, Partitioning algorithms, Robustness, Convergence, Complexity theory, Big data.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

A Novel Cost-Based Model for Data Repairing/In Cloud Database

V. Naresh., Assist. Professor, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

G. Balaji., Assist. Professor, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Aseen Babu., Assist. Professor, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Abstract:--

Integrity constraint based data repairing is an iterative process consisting of two parts: detect and group errors that violate given integrity constraints (ICs); and modify values inside each group such that the modified database satisfies those ICs. However, most existing automatic solutions treat the process of detecting and grouping errors straightforwardly (e.g., violations of functional dependencies using string equality), while putting more attention on heuristics of modifying values within each group. In this paper, we propose a revised semantics of violations and data consistency w.r.t. a set of ICs. The revised semantics relies on string similarities, in contrast to traditional methods that use syntactic error detection using string equality. Along with the revised semantics, we also propose a new cost model to quantify the cost of data repair by considering distances between strings. We show that the revised semantics provides a significant change for better detecting and grouping errors, which in turn improves both precision and recall of the following data repairing step. We prove that finding minimum-cost repairs in the new model is NP-hard, even for a single FD. We devise efficient algorithms to find approximate repairs. In addition, we develop indices and optimization techniques to improve the efficiency. Experiments show that our approach significantly outperforms existing automatic repair algorithms in both precision and recall.

Keywords:—

Cloud computing, service-level agreements, Database integration, Matching dependencies, functional dependencies, integrity constraints.

International conference on Recent Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Personalized and Diverse Task Composition in Crowdsourcing

M.Sowjanya., Assist. Professor, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India,

N.Ajay., Assist. Professor, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India,

A. Manikanta., Assist. Professor, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India,

Abstract:--

We study task composition in crowdsourcing and the effect of personalization and diversity on performance. A central process in crowdsourcing is task assignment, the mechanism through which workers find tasks. On popular platforms such as AMT, task assignment is facilitated by the ability to sort tasks by creation date or reward amount. Task composition improves task assignment by producing for each worker, a personalized summary of tasks, referred to as a Composite Task. CTs allow workers to quickly find tasks of interest. We propose different ways of producing CTs and formulate an optimization problem that finds for a worker, the most relevant and diverse CTs. We show that workers' experience is greatly improved due to personalization that enforces an ad equation of CTs with workers' skills and preferences. We also study various ways of diversifying tasks in each CT. Task diversity is grounded in organization studies that have shown its impact on worker motivation. Our experiments show that while CTs improve task throughput when compared to ranked lists, diversifying tasks contributes to improving outcome quality. More specifically, we show that task throughput is best when CTs contain tasks having similar topics, while requester-based diversity benefits both worker retention and crowdwork quality. More specifically, we show that while task throughput and worker retention are best with ranked lists, crowdwork quality reaches its best with CTs diversified by requesters.

Keywords: —

Throughput, Crowdsourcing, Optimization, Urban areas, Clustering algorithms, Buildings, crowdsourcing, human factors.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

IOT Based Smart Bin Monitoring Using Sensor and Gsm for Smart Cities

A.Sridhar., Assist. Professor, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

N.Madhavi., Assist. Professor, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

G. Mahender., Assist. Professor, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Abstract:-

Rapid increase in population we see present day, many times Dust bin are placed near public places in the cities/villages are filled due to increase in the waste every day. If the disposal of waste is not proper done it creates unhygienic condition for the people, to avoid such a situation we are planning to design “IoT based smart bin monitoring using gsm & sensor for smart cities”. In this proposed designed System there are multiple dustbins located throughout the city, these dustbins are provided with ultrasonic sensor which helps in level of the garbage bins and an so that it is easy to identify which garbage bin is full. When the level reaches the Maximum limit, the ultrasonic device will transmit the level along with the percentage of dustbin these details can be accessed by the concern authorities from their place with the help of GSM Modem and an immediate action can be made to clean the dustbins.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Health Monitoring Using Cloud Based Internet of Things

K.Archana., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Y.Gayathri., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Karthik., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

B.Sravani, UG STUDENT, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Abstract:--

The proposed frameworks for remote health monitoring provide three tier architecture. A wireless Body Area Network (WBAN), consists of wearable sensor as the data acquisition unit, communication and networking, and the service layer. The system is designed for long term storage of patient's biomedical information as well assisting health professionals with diagnostic information. The wearable sensors that measure the physiological parameters such as blood pressure, body temperature are connected to the network through concentrators (smart phone). The sensor information is transmitted to a gateway server through Bluetooth connection. The gateway server turns the data into an observation and management file and stores it on a remote server for later retrieval by clinicians through the internet. Cloud processing has three distinct components: storage, analytics, and visualization. The information of the patients is stored in cloud for long term. Analytics uses the sensor data along with e-health records and helps with diagnosis and prognoses of diseases. Visualization makes the data and analyse accessible to the physicians in a readily digestible format. Though there are many benefits of cloud computing. However, it has security threads of pivotal confidential data. Users of cloud technology can't count on the cloud service sup-pliers for the safety of the pivotal confidential data. Therefore, a Third-Party Authenticator is required which authenticates the cloud data from the side of users or holders of the data. Security of sensitive data is of questionable nature due to the presence of various entities. Cloud Service Providers along with Data Users are equally in charge for putting the security of the pivotal confidential data at risk.

Keywords:--

Wearable Sensors, Iot, Visualization, Analytics, Cloud, Security.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:
Siddhartha Institute of Technology & Sciences
And
Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

A Survey on the Design of FSM Based Vending Machine

G.Ramya., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

G.Sandeep., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

V.Prakash., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

K.Geethanjali., UG STUDENT, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Abstract:--

A vending machine is a machine which dispenses items such as snacks, beverages, lottery tickets, consumer products and even gold and gems to customers automatically, after the customer inserts currency or card into the machine. Vending machines are very common in the countries like Japan, Germany, and U.S. etc. The requirements of the vending machines are increasing day by day due to the modern and fast life style. The FPGA based vending machines are more flexible and faster than the CMOS based machines. The FPGA based vending machine is also programmable and can be reprogrammed whereas in the Embedded based machines we have to change the whole architecture of the machine if we want to change or enhance the design of the machine. In this paper implementation of vending machine using Finite State Machine (FSM) Model is proposed using VHDL.FSM modelling is the most important part in developing proposed vending machine model as this reduces the required hardware. In this project, both MEALY and MOORE Machine Model is used to model the process for state i.e. user selection, waiting for money insertion, product delivery and servicing.

Keywords:--

FSM, VHDL, Vending Machine, MEALY & MOORE model, FPGA.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

A Scrutiny of Self Restraint of Collision Using Gps & GSM Tracking System

B.Dharmendar., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

K.Rajesh., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

K.Srikanth., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Divya Teja., UG STUDENT, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Abstract:--

As population is proliferating, it results to the enormous amount of the vehicle on the road and hence leads to an accretion in the problems associated with traffic management. In this paper, proposes the tracking system based on various concepts like intelligent transport system (ITS), satellite modem, RFID (radio frequency identification), Raspberry pi, GPS, GPRS, GSM, etc. By initiating this we can monitor the tracking system of the vehicles using GPS system. The main motivation of this work is to introduce with a above mentioned concepts of tracking system which is an innovative additional device that can enable the individual to enjoy the flexibility in motion and develops an advanced sense of confidence and self-reliance.

Keywords:--

ITS, RFID, GPS, GPRS, GSM, Raspberry, pi, satellite modem

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Enhancing Agricultural Data Using IOT and Cloud Technologies

A.Deepika., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

M.Sumalatha., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

S.Rajitha., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

B.Soundarya., UG STUDENT, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Abstract:--

Agriculture the backbone of Indian economy contributes to the overall economic growth of the country and determines the standard of life of the farmer. Hence the latest Cloud computing has emerged as a new model for managing agricultural application as a services. Cloud computing has interconnection with the technologies such as the wireless sensor network, IoT (internet of things), the network of physical devices embedded with sensors and the big data analysis that offers great cloud computing services. This paper proposed a cloud-based automatic information system that uses the cloud, wireless network, and the big data technologies. The proposed system collects the information from the various devices and the IoT sensors such as the soil moisture sensor, plant growth indication sensor, water quality sensor and process it in the cloud through big data and provides the required information automatically to the farmer from the cloud through the mobile application or the web application. The performance of the proposed system has been evaluated using big data analysis. The result of the proposed system and the experiment shows that it provides the better services and the Value of Services (VoS) of our system.

Keywords:--

Agriculture as a Service, Autonomic Management, Big Data, Cloud Computing, Internet of Things.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:
Siddhartha Institute of Technology & Sciences
And
Institute For Engineering Research and Publication (IFERP)

International conference on Recent Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Challenges in 5G Wireless Networks

M.Anil., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Maram Sravanthi., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Shiva Kumar., Assist. Prof, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

A.Priyanka., UG STUDENT, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Abstract:--

The fifth (5G) and fourth (4G) generation wireless communication systems have been deployed or are soon to be deployed in many countries. However, with an explosion of wireless mobile devices and services, there are still some challenges that cannot be accommodated even by 4G, such as the spectrum crisis and high energy consumption. Researchers have started research on fifth generation wireless systems that are expected to be deployed beyond 2020. In this article, we propose a potential cellular architecture that separates indoor and outdoor cases, and discuss various promising technologies for 5G wireless communication systems, such as massive MIMO, energy-efficient communications, cognitive radio networks, and visible light communications. Future challenges of the potential technologies are also discussed.

Keywords:--

Wireless networks, 5g communication systems.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Working Nature of Concrete Using Coconut Shell

M.Ramesh Babu., Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

T.Ashok., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

D.Narsamma., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

B.Mahesh., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

Abstract:--

In this present experimental investigation an attempt is made to use low cost building material like a coconut shell. In the present thing the natural aggregate is replaced by 10%, 20%, 30% of coconut shell for different grades of concrete such as M20, M25. A comparative study is made on compressive strength between the conventional concrete and coconut shell concrete.

Key Words: -

Cement Concrete (CC), Coconut Shell (CS), Cement Mortar (CM), Consistency (P),

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Replacement of Cement with Hypo Sludge Flyash and Sand with Quarry Sand

Manjunatha H., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

J Mahipal ., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

R. Saritha., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

M.Bhagyasree., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

Abstract:--

This paper presents the study on effect of industrial waste materials namely lime sludge, fly ash and quarry sand on compressive strength, split tensile strength and flexural strengths of M30 grade concrete. Here in M30 grade concrete, cement is partially replaced by lime sludge 10 to 40 percent and fly ash 10 to 20 percent, and sand is partially replaced by quarry dust (sand) 20 percent in five mix proportions. The results of these five mixes are compared with controlled mix. The mix proportion with partial replacement of cement by lime sludge 10 percent, fly ash 10 percent and with partial replacement of sand by quarry dust 20 percent, in general yielded better results than remaining all mixes.

Key Words: -

Lime Sludge, Quarry Sand, Fly Ash, Split Tensile Strength, Compressive Strength.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Performance Studies on California Bearing Ratio Values Using Geofabrics

Mr.P.Dileep., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

Mr.R.Sai Kumar., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

Md.Saleem., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

Ch.Maheshwar Reddy., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

Abstract:--

Successful use of geosynthetics is ensured in a given geotechnical application, as it is not only compatible but effective in improving the soil properties when appropriately placed. In this study the performance of woven and nonwoven geotextile, interfaced between soft sub grade and unbound gravel in an unpaved flexible pavement system, is carried out experimentally, utilizing the California Bearing Ratio (CBR) testing arrangement. In order to evaluate the performance, the reinforcement ratio is obtained based on the CBR load – penetration relation of both soft sub grade-gravel and soft sugared-geotextile-gravel, separately, for woven and nonwoven geotextile. Comparison of reinforcement ratio determined using the CBR strength test shows that the performance is improved with the inclusion of woven and nonwoven geotextile.

Key Words: -

Unpaved road, Geotextile, CBR test, Reinforcement ratio.

International conference on Recents Advancements in Engineering and Technology

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Mechanical Behaviour of Light Weight Concrete Panels

E.Prabakaran., Assistant Professor, Department of Civil Engineering, Dr.N.G.P. Institute of Technology, Coimbatore

G.Krishnaraaju., Assistant Professor, Department of Civil Engineering, Dr.N.G.P. Institute of Technology, Coimbatore

M.Nithya., Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

P.Srikanth Reddy, Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad.

Abstract:--

Light weight concrete (LWC) plays a major role in reducing the dead load of the structures as well as it fulfills the purpose of load bearing character in some cases. The manufacturing of LWC differs according to the use and material availability gives freedom in the design mix of concrete. The advanced characters of LWC like sound insulation, thermal resistivity and strength lead for more usage of the product. This paper deals investigation on the LWC partition panels with interlocking system for its improved shear and flexural behaviour compare to the normal gypsum board partitions. The LWC provide improved strength in 0.050% in each aluminium and gypsum addition compared to the 0.075% replacement in the cement.

Index Terms: -

LWC (light weight concrete), Durability, Interlocking Panels, Aerated, Aluminium.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Removal of Heavy Metals by Biosorption Technique Using Halophilic Fungi

Priya AK., Associate Professor, Department of Civil Engineering, KPR Institute of Engineering and Technology, Coimbatore

M.Nithya., Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

B. Dinesh., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

J.Bajan singh., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

Abstract:--

Today pollution due to hazardous materials such as heavy metal has turn into one of the major serious ecological problems and public health issue. Decontamination of such materials from soil and water has been a great threat. Biomaterial such as fungi, yeast and algae has become a cost effective solution for wastewater containing low concentration heavy metals. The effect of pH, temperature, initial concentration, contact time, and biosorbent dosage on biosorption capacity is studied. All tested fungi showed moderate to high adsorption of heavy metals, amongst which *Aspergillus flavus*, *Aspergillus restrictus* and *Sterigmatomyces halophilus* showed the best average adsorption of all heavy metals studied, with an average of 90, 84 and 85%, respectively. The biosorption process obeys Freundlich and the Langmuir adsorption isotherms. This revolutionary research work of biosorption by halophilic fungi using economical media for removal of heavy metals provides a cost-effective environmental solution. Illumination of the system of metal uptake is a factual challenge in the field of biosorption.

Index Terms: -

Ecological problems, Biosorption, Fungi, Yeast and Algae, Heavy Metals.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Study on Strength Properties of Concrete by Partial Replacement of Cement with Rice Husk Ash

Sarmilee Patnaik., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

S.Ashish., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

G.Devi Vara Prasad., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

G.Srikanth., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

Abstract:--

The active component of concrete is cement as it is a binder that binds the other passive components, production of this binding material has become expensive concrete is becoming expensive and its production contributing to environmental pollution by emitting CO₂ gases that is the main cause of global warming so efforts are being taken to utilize local natural or solid waste resources as a supplementary cementing material. RHA is a by-product of paddy industry, highly reactive pozzolana which is produced by burning rice husk at controlled temperatures. Due to the increasing rate of environmental pollution and the consideration of sustainability factor have made the idea of utilizing rice husk.

Key Words: -

Cement concrete, Rice husk ash, Fly ash.

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Hyderabad, Telangana, 15th – 16th March 2019

Comparative Study on Seismic Responses of Multistorey Building Frame with Infills Using Linear and Nonlinear Analysis

S.Swapna., ,, Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad.

T.Venkatesh., ,, Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad.

V.Kavitha., ,, Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad.

K.Sanjay Kumar., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad.

Abstract:--

The effect of infill walls on the building is generally neglected in the analysis. In fact, an infill wall contributes to the lateral strength and stiffness of the structure. Seismic response analysis of multi storey building frame with infill was done by modeling the infill wall as an equivalent diagonal strut. For the equivalent diagonal strut, the thickness is taken equal to the thickness of the wall and width of the strut as per “Equivalent strut method”. The comparison of seismic responses is done for the multi-storied buildings with infill as equivalent diagonal strut using linear and non-linear analysis. ETABS software is used for the present study.

Key Words: -

Linear Analysis, Non-linear Analysis, Equivalent Diagonal Strut, Seismic Responses.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Elevated Water Tank

B.Venkat NarsimhaRao., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

Shree Mahalakshmi., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

Dhrama TEJA., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

P.Santhosh., Assistant Professor, Department of Civil Engineering, Siddhartha Institute of Technology and Sciences, Hyderabad

Abstract:--

Water tanks are the storage containers for storing water. Elevated water tanks are constructed in order to provide required head so that the water will flow under the influence of gravity the construction practice of water tanks is as old as civilized man. The water tanks project has a great priority as it serves drinking water for huge population from major metropolitan cities to the small population living in towns and villages.

The mini project is conducted for a period of 15 days to have complete practical knowledge of various techniques and problems faced in the field. A different topic like Construction Aspects, Design Parameters, Details of Formwork, Details of reinforcement, Process of Water Treatment Plant and Execution have been dealt with in the course of our mini project. "Elevated water tanks" by elevating water tank, the increase elevation creates a distribution pressure at the tank outlet.

The profile of water tanks begins with the application parameters, thus the type of materials used and the design of water tank was dictated by these variables:

1. Location of the water tank (indoors, outdoors, above ground or underground).
2. Volume of water tank need to hold.
3. What the water will be used for?
4. Temperature of area where will be stored, concern for freezing.
5. Pressure required delivering water.
6. How the water to be delivers to the water tank.
7. Wind and earthquake design considerations allow water tanks to survive seismic and high wind events.

International conference on Recent Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Design and Analysis of Elevator Control System Using PLC

Dr Vindyala Balakrishna., Professor, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Tharikoppula Sowmya., Assist. Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Gopi Gaddam., Assist. Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Abstract:--

An elevator is one of the important aspects in electronics control module in automotive application. For most people residing in urban cities, elevators have become an integral part of their daily life. Simply stated, an elevator is a hoisting or lowering mechanism, designed to carry passengers or freight, and is equipped with a car and platform that typically moves in fixed guides and serves two or more landings. This paper mainly focuses on using programmable logic controller to control the circuit and building the elevator model. Hall Effect sensor is used for the elevator position. DC Motor is used to control the up and down movement of the elevator car. Push buttons are used to call the elevator car. The elevator position is described by using the display unit. In this paper, Auto Station Software ladder logic program is used for four floors control system. An elevator system is a vertical transport vehicle that efficiently moves people or goods between floors of a building. They are generally powered by electric motors. The most popular elevator is the rope elevator. In the rope elevator, the car is raised and lowered by transaction with steel rope. Elevators also have electromagnetic brakes that engage, when the car comes to a stop. The electromagnetic actually keeps the brakes in the open position. Instead of closing them with the design, the brakes will automatically clamp shut if the elevator loses power.

Key Words: -

PLC, Elevator, DC Motor, TPLC Controller.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Design and implementation of a simplified seven level inverter

Dr Mohd Abdul Kareem., Professor, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Pavani Parachuri., Assist. Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Durgam Srinivas., Assist. Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India..

Abstract:--

In this paper a new multi-level inverter configuration for increasing the number of voltage levels using reduced number of switches is proposed. The proposed inverter consists of an H-bridge cell along with diodes and active switches. It uses PWM modulation technique and only one input dc source along with series capacitors. The validity of the proposed inverter is done using MATLAB software simulation tool and also relevant theoretical analysis is carried out. The capacitor voltage unbalance is overcome by proposing a modified switching strategy.

Key Words: -

Multi-level, Voltage unbalance, THD.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

A Dual Series DC to DC Resonant Converter

Dr Muthu Muthamizh Selvam., Professor, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Yadav Srujana Choppari., Assist. Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

K Srinivas., Assist. Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Abstract:--

A dual series-resonant DC-DC converter with zero voltage switching (ZVS) and zero current switching (ZCS) features is proposed in this paper. The topology consists of two switches and a clamping capacitor on the primary side of an isolating transformer. The two switches are operated in complementary mode under pulse width modulation (PWM) scheme. The secondary side of the transformer is connected to the load through two series-resonant circuits and a half bridge diode rectifying stage, in which the rise and fall slopes of the diode currents are limited by the slope of the currents in the resonant circuits, resulting in reduced switching losses in the diodes. The two series-resonant circuits provide power transfer to the output load without interruption throughout the positive and negative cycles of operation. It is shown that the output voltage of the proposed converter can be regulated using either pulse width modulation control or frequency modulation control. Both step-down and step-up voltage conversions can be achieved using the proposed topology..

Key Words:-

PWM, Resonant, Clamping Capacitor, Isolating transformer, Series Resonant, Voltage Conversions.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Power Quality Improvement in Grid from Wind Turbine by Using Shunt Hybrid Active Filter

Ganesh Nomula., Asso. Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Anagandula Naresh., Assist. Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Vangala Sandeepreddy., Assist. Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Abstract:--

This paper presents D-Q Synchronous Reference Frame (SRF) current control method in order to generate the required reference current for 3-phase 4-wire shunt hybrid active power filter (SHAPF) to solve harmonics problem in power system network. Here, the passive elements of SHAPF have been used for compensation of reactive power and to eliminate the lower order harmonics and the active part have been used for the higher order harmonics. A modified phase lock loop (PLL) has been used to handle the double frequency element of non-ideal voltages. All the simulation for achieving the goal have been conducted in MATLAB/SIMULINK environment for ideal and unbalanced mains voltage conditions. From the simulation results it has been seen that the implementation of proposed D-Q SRF based SHAPF resulted in reduced THD in the power system network both in balanced and unbalanced conditions.

Key Words:-

Phase Lock Loop, PI controller, SRF, THD, SHAPF.

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Hyderabad, Telangana, 15th – 16th March 2019

Photovoltaic Multi-level Inverters Technology

Madhukar Reddy Nimmala., Asso.Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Kummari Shailaja., Assist. Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India..

Pallavi Nareddy., Assist. Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India..

Abstract:--

In this paper three main types of multi-level inverters are reviewed (diode-clamped, flying capacitor, and cascaded H-Bridge inverters). Different multi-level inverter topologies which are currently available on the market as far as components for the electrical integration of PV systems are also concerned. The new trends of all of these topologies are seeking to reduce the cost, the size of the inverter and the losses by reducing the number of the switches and capacitors and keeping the output voltage steps high enough at least to be similar to the previous topologies.

Key Words:-

Photovoltaic, Multi-level inverter, Diode clamped, flying capacitor, cascaded H-Bridge inverters.

International conference on Recent Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

A Novel Method for Onboard Charger Using Three Phase Switched Coupled Inductor Quasi-Z-Source Inverter

P Varun Krishna., Assoc. Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar,
Hyderabad, Telangana, India

Ramesh Donthisaram., Assoc. Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar,
Hyderabad, Telangana, India

Beeram Mounika., Assist. Prof, Department of EEE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar,
Hyderabad, Telangana, India.

Abstract:--

A new space vector modulation, for three-phase quasi-Z-source rectifier (qZSR) is proposed. All switches in the three-phase bridge can be turned on and turned off with zero-current or zero voltage using the proposed ZSVM3 without any auxiliary circuit. The current through the inductors of the quasi-Zsource network operates in boundary conduction mode or discontinuous conduction mode to achieve all freewheeling diodes turned off with zero current- switching (ZCS). At the same time, the switch in the quasi-Z-source network can be turned on with ZCS. Besides, the voltage stress of all switches is equal to dc-link voltage. The operation principle of the qZSR is analyzed in detail and the calculated value of the quasi-Zsource inductor is given. The proposed theory in this paper is verified by a 2-kW prototype. Novel active clamping zero-voltage switching three-phase boost pulse width modulation (PWM) rectifier is analyzed and a modified minimum-loss space vector modulation (SVM) strategy suitable for the novel zero-voltage switching (ZVS) rectifier is proposed in this paper. The topology of the novel ZVS rectifier only adds one auxiliary active switch, one resonant inductor, and one clamping capacitor to the traditional hard-switched three-phase boost PWM rectifier. With the proposed SVM strategy, the novel ZVS rectifier can achieve ZVS for all the main and auxiliary switches. In addition, the antiparallel diodes can be turned OFF softly, so the reverse recovery current is eliminated. Besides, the Voltage stress of all the switches is equal to the dc-link voltage. The Operation principle and soft-switching condition of the novel ZVS Rectifier is analyzed. The design guidelines of the soft switched Circuit parameters are described in detail. A DSP controlled 30 kW Prototype is implemented to verify the theory

Key words:-

Switched Coupled Inductor, Quasi-Z-Source Inverter, Pulse Width Modulation, SVM, ZVS Rectifier, RDCL.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Several axial flaxible Amplitude weakness Life Forecast Method Based on a Plane Damage computation

P.Shivaprasad., Department of Mechanical Engineering, Siddhartha Institute of Technology & Sciences, Narapally, Hyderabad

G.Shivakumar., Department of Mechanical Engineering, Siddhartha Institute of Technology & Sciences, Narapally, Hyderabad

F.Saidulu., Department of Mechanical Engineering, Siddhartha Institute of Technology & Sciences, Narapally, Hyderabad

Abstract:--

A multiaxial variable amplitude fatigue life prediction methodology is planned during this paper. 3 main steps square measure distinguished. The primary one considerations the investigating of multiaxial cycles and uses the traditional Stress to a physical plane because the investigating parameter. Then a multiaxial finite fatigue life criterion permits one to assess the fabric life such as every cycle any physical plane. A harm law and its cumulation rule describe the harm evoked by every cycle plane per plane. By this manner the vital plane for a given multiaxial stress history is identified. It's assumed to be the fracture plane and also the fatigue lifetime of the fabric is traduced because the variety of repetitions of the sequence up to crack initiation. At this stage, material fatigue criteria and linear and nonlinear harm laws assume that the fabric is broken. One distinguishes among these criteria vital set up sort whose formalism will establish the crack initiation set up. AN application is given for every load. Within the context of multiaxial solicitations of variable amplitude, a validation of the estimation of the orientations of the priming planes is allotted supported experimental results on cruciate check pieces the calculable orientations square measure about to those ascertained through an experiment.

Key words:-

Multiaxial Fatigue, Variable Amplitude, Fatigue Life, Damage Law, Cycle Counting.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Biodiesel Produced In Eucalyptus Oil and Analyzed For Various Characteristics

A.Akhil., Department of Mechanical Engineering, Siddhartha Institute of Technology & Sciences, Narapally, Hyderabad

CM.Santosh Kumar Reddy., Department of Mechanical Engineering, Siddhartha Institute of Technology & Sciences, Narapally, Hyderabad

B.BALAJ., Department of Mechanical Engineering, Siddhartha Institute of Technology & Sciences, Narapally, Hyderabad

Abstract:--

Eucalyptus oil was selected as the source of biodiesel and the various characteristics were analyzed. The eucalyptus tree is a non-edible species capable of growing in all climatic conditions. Eucalyptus oil was derived mainly from the leaves of the tree and is available throughout the year. Once the pure eucalyptus oil has been extracted, it was converted into biodiesel by the process of transesterification. The physico-chemical properties of the biodiesel thus obtained were analyzed and compared with the diesel to find its suitability for use in diesel engines.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Experimental Analysis of Wire-EDM Method Using Different Parameters for Surface Roughness of Carbon Steel and Aluminum Alloy

B.Ramesh Naik., Department of Mechanical Engineering, Siddhartha Institute of Technology & Sciences, Narapally, Hyderabad

B.Mukesh Naik., Department of Mechanical Engineering, Siddhartha Institute of Technology & Sciences, Narapally, Hyderabad

K.Mahendar., Department of Mechanical Engineering, Siddhartha Institute of Technology & Sciences, Narapally, Hyderabad.

Abstract:--

Electrical discharge machining is an old technology that has been used for old manufacturing processes. Nowadays, the modernized version of the machine is used to manufacture different objects using a wire feed. The parameters in which the machine operates have diverse effects on product quality and surface finish. This paper investigates the performance of a wire electrical discharge machining process for different wire feed rates. The process is a non-traditional machining method. Several tests have been performed considering a carbon steel 1017 and aluminum alloy 6060 machined via Wire-EDM. By using different wire feed rates (3 mm/min, 5 mm/min and 7mm/min), the average surface roughness, Ra, has been investigated in this study. Results show that the wire feed rate is a significant variable to the surface quality finish. The surface roughness of the test target materials increased as this variable increased. The present study recommends setting the wire feed rate as low as possible with the aim of improving results in the surface quality finish. The obtained results and some of the most necessary parameters affecting the manufacturing process of wire-EDM are briefly defined and are then discussed in detail in this study.

Key words:-

Wire-EDM, Surface Roughness, wire feed rate, carbon steel 1017, aluminum alloy 6060.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

A Brain Computer Interface for Smart Home Control

Venkataramana.K., Associate Prof, Department of CSE, Akshaya college of engineering and Technology. Coimbatore

M.Srinivasalu., Associate. Prof, Department of CSE, Akshaya college of engineering and Technology. Coimbatore.

M.Moqueed Ahmed., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Nikhil Thapa, UG STUDENT, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Abstract:--

A brain-computer interface (BCI) is a new communication channel between the human brain and a digital computer. The ambitious goal of a BCI is finally the restoration of movements, communication and environmental control for handicapped people. An electroencephalogram (EEG) based brain-computer interface was connected with a Virtual Reality system in order to control a smart home application. It offers an alternative to natural communication and control. It is an artificial system that bypasses the body's normal efficient pathways, which are the neuromuscular output channels. Different brain states are the result of different patterns of neural interaction. These patterns lead to waves characterized by different amplitudes and frequencies. This neural interaction is done with multiple neurons. Every interaction between neurons creates a minuscule electrical discharge. The signal generated by brain was received by the brain sensor and it will divide into packets and the packet data transmitted to wireless medium (blue tooth).the wave measuring unit will receive the brain wave raw data and it will convert into signal using MATLAB gui platform. Then the instructions will be sending to the home section to operate the modules (bulb, fan). The project operated with human brain assumption and the on off condition of home appliance is based on changing the muscle movement with blinking.

Key words:-

Brain computer interface Modue (BCI MODULE),micro-controller,electroence phalogram(EEG) power spectrum, Arm Processor(ARM lpc2148), Bulb, Display Module

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Intra-Optimised Lightweight Enciphering Algorithm based on MQTT Protocol for Internet of Things Secure Application

C.Karthik., Associate Prof, Department of ECE ,Affiliated to JNTUH colleges

K.Venkataramana., Associate. Prof, Department of CSE, QISIT, Ongole

M.Srinivasalu., Associate Prof, Department of ECE ,Affiliated to ANNA UNIVERSITY colleges

G.Sandiya., Department of Computer Science & Engineering, B. V. Raju Institute of Technology

Abstract:-

Recent advances in technology have led to rapid growth of Internet of Things (IoT) systems which incorporate numerous miniaturized low powered devices with large numbers of sensors and actuators collecting and exchanging data autonomously over the internet generating enormous amounts of data that needs to be secured. Traditional encryption algorithms are not suitable due to great complexity and numerous rounds for encryption and decryption operations. There is however a rising need for elaborate lightweight encryption algorithms with less complexity for optimum security in resource constrained communication networks. In this paper, a lightweight encryption algorithm called Intra-Optimized Lightweight Enciphering (ILE) Algorithm is proposed. The proposed scheme is complemented by watchdogs who are deployed in the clusters to achieve optimum security for the overall generated clusters at less cost and is simulated on Message Queue Telemetry Transport (MQTT) protocol using Mosquito broker in Cooja simulator and the performance was evaluated. Results from simulations show that the proposed algorithm offers significant security, improved performance and power drain without compromising the quality of service and further a comparison was made with existing lightweight algorithms.

Key words:-

ILE, MQTT, watchdogs, cluster, lightweight cryptography, constrained devices.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recent Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Design and Analysis of Barrel Shifter Using Reversible Logic Gate

P.Manigandan., Associate Prof, Department of ECE ,Affiliated to JNTUH colleges

V.Prasad., Associate. Prof, Department of ECE, AVN Institute of Engineering and Technology, Hyderabad

G.Sudhagar., Professor, Department of ECE , Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally,
Ghatkesar, Hyderabad, Telangana, India

D.Sangeetha, UG STUDENT, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad,
Telangana, India

Abstract:--

The logic gates are divided into two types. One is reversible logic gate and other is irreversible logic gates. Some irreversible logic gates are AND, OR, NAND, NOR. Generally these gates consume more power. Whereas reversible logic gates are characterized by N input N output and its reversible nature which results in less power consumption. Thus it can be used to design the sequential and combinational circuits. In this paper, Fredkin gates are used to design Barrel Shifter circuits. So barrel shifter is designed in way to consume low power, reduced area and then efficient performance. The circuit is made testable by cascading two shifters together thereby neglecting the use of external testing units.

Key words:-

QCA, Reversible logic, Barrel shifter, Fredkin gate, Majority Gate.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

A Interleaved Boost Converter and Semi Bridgeless Boost Converter for High Power Density and Topologies

R. Mahadevan, Ph.D., Scholar, Department of Electrical & Electronics Engineering, GCE, Salem, Tamilnadu, India

M. Prithiviraj., Ph.D., Scholar, Department of Electronics & Communication Engineering, GCE, Salem, Tamilnadu, India

Abstract:-

In this paper the efficiency and power factor performance of improved (PFC) interleaved boost converter. Based on simulation using on analysis of high efficiency and output voltage Compared to semi bridgeless boost converter best output voltage high efficiency and high power factor correction interleaved concept is used to reduce the output ripple current and semi-bridgeless rectifier for converter of ac and boost operation and it converts low voltage dc supply to high voltage dc supply.

Key words:-

Interleaved Boost converter and semi bridgeless Boost converter (PFC) power Factor correction..

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Performance Analysis of Multi-Fault Tolerant on Multiprocessor System On-chip

R. ARUN PRASATH., Professor, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

V KEERTHI., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Y.SREEJA, Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Abstract:--

As the complexity of designs increases and technology scales down into the deep-submicron domain, the probability of malfunctions and failures in the Networks-on-Chip (NoCs) components increases. In this work, we focus on the study and evaluation of techniques for increasing reliability and resilience of Network Interfaces (NIs) within NoC-based multiprocessor system-on-chip architectures. NIs act as interfaces between intellectual property cores and the communication infrastructure; the faulty behavior of one of them could affect, therefore, the overall system. In this work, propose a functional fault model for the NI components by evaluating their susceptibility to faults. Present a two-level fault-tolerant solution that can be employed for mitigating the effects of both permanent and temporary faults in the NI. Experimental simulations show that with a limited overhead can obtain an NI reliability comparable to the one obtainable by implementing the system by using standard triple modular redundancy techniques, while saving up to 48 percent in area, as well as obtaining a significant energy reduction.

Key words:-

Networks-on-Chip (NoC), diagnosis, performance, multi-layer, design space exploration.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

An Energy-Efficient Duty-Cycled Wake-Up Radio Protocol for Avoiding Eavesdrop In Wireless Sensor Networks

Dr. P. Uma Maheswari., Assistant Professor, Department of Computer Applications, Anna University Regional Campus -
Madurai, Keelakuilkudi, Madurai, Tamilnadu

Dr. R. Arun Prasath., Professor, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Hyderabad,
Telangana, India..

Abstract:--

Wake-Up Radio System (WuR) is often considered the best candidate to replace MAC (Media Access Control) protocols with the traditional cyclic cycle of working on wireless sensor networks (WSN). The Double Radio Protocol (DoRa) is a new MAC protocol for the WuR in-band system with addressability. Although the DoRa protocol improves the energy efficiency of the WSN, it still suffers from a hearing problem when the WuR system is needed very often. The WuR wastes a considerable amount of energy when it hears awakening demand from other nodes, but it is not measured or solved in other jobs. In this work, a cyclic adaptive DoRa (DC-DoRa) cycle is proposed to solve the problem of hearing. The main concept of the job is to enable the WuR feature before routing the node and disable WuR after the node has sent the data. Detailed simulations are performed under OMNeT ++ using real input parameters to show the significant energy savings achieved by the two protocols and the virtual elimination of over-listening with DC-DoRa. In fact, average power consumption is three times lower with the DoRa protocol compared to traditional MAC protocols. Although the conversation can account for up to 93% of WuR's power consumption with the DoRa protocol, it is reduced to only 1% with the DC-DoRa protocol.

Key words:-

Wireless Sensor Networks, Wake-Up Radio, MAC Protocol, Energy Efficiency, Duty Cycling.

International conference on Recent Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Finite Element Analysis of Damping Properties of High Strength Aluminum A356 Alloy Composite

Mr. Shiva Prasad., Assistant Professors, Siddhartha Institute of Technology and sciences, Narapally, Hyderabad

Mr. Shiva Kumar., Assistant Professors, Siddhartha Institute of Technology and sciences, Narapally, Hyderabad

Mr.Ch.Santosh Kumar Reddy., Assistant Professors, Siddhartha Institute of Technology and sciences, Narapally, Hyderabad.

Abstract:--

Aluminum composites are in effect broadly utilized as a part of numerous applications because of their astounding weight to quality properties. Many research works have been done to ponder and enhance the mechanical properties of aluminum compounds. The creation of alloying components assumes a critical part in choosing the properties of a combination. The aftereffects of numerical strategies have been acknowledged generally as they intently coordinate with the test comes about. In the present examination a numerical investigation apparatus i.e., limited component investigation (FEA) is utilized. The work introduced in this paper is gone for the investigation of impact of vibration qualities of aluminum combinations of various arrangements. The demonstrating and examination is completed utilizing ANSYS programming. A modular examination is done to comprehend the vibration conduct i.e., characteristic recurrence and mode shapes, of the material considered. The mode shapes and regular Recurrence assume a vital part in the outline Of dynamic machines. The consonant examination has been made to decide recurrence qualities. The investigation program peruses the information from the info document forms the information and makes the yield record containing the nodal relocations and nodal stretch estimations of various anxieties. From the investigation it is presumed that as the copper and silicon content in the amalgams expands twisting declines conversely. ANSYS comes about affirm the slightest Modulus deformation and the ultimate tensile strengthincaseofthe380 compounds of 380 increments with the expansion in copper and silicon content. Consequently Al 380 amalgams display great quality with least vibration.

Key words:-

Aluminum compounds, vibration qualities, FEA.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Investigation on Mechanical Properties of Al 6061 Alloy Processed By FSW

Mr. Saidulu., Assistant Professors , Siddhartha Institute of Technology and sciences, Narapally, Hyderabad

Mr. Naresh Babu., Assistant Professors , Siddhartha Institute of Technology and sciences, Narapally, Hyderabad

Mr.B.Balaji., Assistant Professors , Siddhartha Institute of Technology and sciences, Narapally, Hyderabad

Abstract:--

The aim of this experiment was to improve the mechanical properties of 6061 aluminium alloys by friction stir processing (FSP), a solid-state technique for micro structural modification using the heat from a friction and stirring. The Aluminium alloy 6061 is widely used in the fabrication of lightweight structures with high strength-to-weight ratio and good corrosion resistance. Welding is main fabrication method of 6061 alloy for manufacturing various engineering components. Friction stir welding (FSW) is a recently developed solid state welding process to overcome the problems encountered in fusion welding. This process uses a non-consumable tool to generate frictional heat on the abutting surfaces. The welding parameters, such as tool pin profile, rotational speed, welding speed and axial force, play major role in determining the micro structure and corrosion resistance of welded joint. In this work a central composite design with two different speeds, traverse speeds and Four tools has been used to minimize the experimental conditions.

Key words:-

Friction Stir Processing, Shoulder Diameter, Pin Profile, Rotational Speed and Traverse Speed.

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Hyderabad, Telangana, 15th – 16th March 2019

Investigation on friction stir welding of Aluminum alloy and Copper dissimilar metals

Mr.K.Mahender., Associate Professor, Siddhartha Institute of Technology and Sciences, Narapally, Hyderabad

Mr.A.AkhilReddy., Assistant Professor, Siddhartha Institute of Technology and Sciences, Narapally, Hyderabad

Mr.E.Manikanta., Assistant Professor, Siddhartha Institute of Technology and Sciences, Narapally, Hyderabad

Abstract:--

The joining of dissimilar Aluminum Alloy and Copperaluminum plates of 5mm thickness was carried out by friction stir welding (FSW) technique. Optimum process parameters were obtained for joints using statistical approach. Five different tool designs have been employed to analyse the influence of rotation speed and traverse speed over the microstructural and tensile properties. In FSW technique, the process of welding of the base material, well below it's melting temperature, has opened up new trends in producing efficient dissimilar joints. Effect of welding speed on microstructures, hardness distribution and tensile properties of the welded joints were investigated. By varying the process parameters, defect free and high efficiency welded joints were produced. The ratio between tool shoulder diameter and pin diameter is the most dominant factor. From microstructural analysis it is evident that the material placed on the advancing side dominates the nugget region. The hardness in the HAZ of 6061 was found to be minimum, where the welded joints failed during the tensile studies.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Minimization of sink mark defects in injection molding process Optimization of a composite drive shaft used in automobiles

Dr.Md.Anwarullah., Principal& Professor, Siddhartha Institute of Technology &Sciences, Narapally, Hyderabad

Dr.Arun Kumar., Professor, Siddhartha Institute of Technology &Sciences, Narapally, Hyderabad

Abstract:--

The purpose of this paper is to present an integrated approach for improving the quality characteristics of the injection molded part (Honda Upper Part) being manufactured at manufacturing industry (Pakistan), where the rejection rate for Honda upper part was on ramp due to sink marks defects. The proposed integrated approach embraces the concept of Design of Experiments (Taguchi Approach) and Response surface design methodology for injection molding process optimization. The Taguchi Method (TM) was used to short list the variables that have significant effects on the sink marks in injection molded parts. Furthermore, the optimization approach of Response Surface Methodology (RSM) was utilized for the experimental research to acquire a prediction model that can be used to optimize injection molding process in terms of fine sink marks reduction. The result shows that the sink marks reduction Predicted by the integration of the Taguchi Method and RSM indeed decreased from 0.0088 (Taguchi's result) down to 0.0080 mm. The empirical results reveal that the integration of the Taguchi Method and RSM could effectively improve the quality. Basically with these experiments, we tried to open the vision of manufacturers and designers regarding the application of integrated RSM/Taguchi approach using linear cum interaction regression model with selected parametric/levels setting for the dimensional accuracy of the injection molded part, and thus contributing towards improvement in process's reliability. The integrated approach with regression model for optimization does not only provide theoretical worth to the literature and manufacturers/designers but can also be applied to different manufacturing industries for quality parts production.

Keywords:--

Injection Molding Process Optimization, Sink Marks, Design of Experiments, Taguchi Approach, Response Surface Methodology.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Mechanical Properties of Al2219-TiC Metal Matrix Composites

Mr.Naresh Babu., Assistant Professors, Siddhartha Institute of Technology and Sciences,Narapally,Hyderabad

Mr.Ch.Santosh Kumar Reddy., Assistant Professors , Siddhartha Institute of Technology and Sciences,Narapally,Hyderabad

Abstract:--

The work is carried out to investigate and study the mechanical properties of TiC reinforced Al2219 alloy metal matrix composites. In the present work Al2219 alloy was taken as the base matrix and TiC particulates as reinforcement material to prepare metal matrix composites by stir casting method. For metal matrix composites the reinforcement material was varied from 0 to 6 wt. % in steps of 2 wt. %. For each composite, the reinforcement particulates were preheated to a temperature of 600°C and dispersed into a vortex of molten Al2219 alloy. The microstructural characterization was done using scanning electron microscope. Mechanical properties like hardness, ultimate tensile strength, yield strength and percentage elongation were evaluated as per ASTM standards. Further, scanning electron microphotographs revealed that there was uniform distribution of TiC particulates in Al2219 alloy matrix. Hardness, ultimate tensile strength and yield strength increased as wt. % of TiC increased in the base matrix. Results also indicated that as wt. % of reinforcement increases, there was decrease in ductility.

Keywords:--

Al2219 alloy, TiC, Mechanical properties, Ultimate tensile strength, Hardness, Stir casting, Metal matrix composites.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Design and Analysis of Centrifugal Pump Using Computational Fluid Dynamics

Dr.M.Naveen Kumar., Siddhartha Institute of Technology and Sciences, Narapally,Hyderabad

Dr.Arun kumar., Siddhartha Institute of Technology and Sciences, Narapally,Hyderabad

Dr.Md.Anwarullah., Siddhartha Institute of Technology and Sciences, Narapally,Hyderabad

Abstract:--

Centrifugal pumps are used to transport liquids/fluids by the conversion of the rotational kinetic energy to the hydro dynamics energy of the liquid flow. The rotational energy typically comes from an engine or electric motor or turbine. In the typical simple case, the fluid enters the pump impeller along or near to the rotating axis and is accelerated by the impeller, flowing radially outward into a diffuser or volute chamber (casing), from where it exits. The Contemporary impellers blades in Centrifugal pumps are used in industrial applications are made up of Aluminum or Steel. It is proposed to design a centrifugal pump using Computer Aided Design (CAD) software with various metal alloys and nonmetallic composite materials, analyze its strength and deformation using simulation software. In order to evaluate the effectiveness of Metal Alloys and NonMetallic composites. The present work aim is to change the material and performing the different analysis like Static, Dynamic, Analysis to find the best material to decrease the weight and increase its efficiency by using the software SOLID WORKS (2014 Premium Version). This also involves the method of manufacturing process to realize the Blower using Non-Metallic composite material..

Keywords:--

Centrifugal pump, Computer Aided Design (CAD), Metal Alloys, Non-Metallic Composite Materials, SOLIDWORKS, Simulation Analysis.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Performance analysis of Drum Brake using Finite Element Method

Mr.Naresh Babu., Assistant Professor, Siddhartha Institute of Technology & Sciences, Narapally, Hyderabad.

Mr.K.Mahender., Assistant Professor, Siddhartha Institute of Technology & Sciences, Narapally, Hyderabad.

Abstract:--

The main objective behind undertaking the project “Analysis of Brake Drum Rotor” is to study and evaluate the performance of Brake Drum under severe braking conditions and thereby assisting in Brake Drum rotor design and analysis. ANSYS 11.0 is a dedicated general purpose Finite Element package used for determining the temperature, stress and strains. ANSYS11.0 is a flexible and cost effective tool. ANSYS11.0 is used in industries in order to solve several mechanical problems.

In this project, an Axis-Symmetric Brake Drum rotor is considered for analysis. Flange width of 8mm, 10mm and 12mm made of Cast Iron, Aluminum and Aluminum composite are considered. A Coupled Field Analysis (Transient Thermal Analysis and Structural Analysis) is performed to obtain the Temperature Distribution and Von Mises Stress. After the Coupled field analysis is Performed, a graph is plotted between the distance and temperature. An attempt is Made to suggest the best combination of material and flange Width for Brake Drum rotor, which yields a low temperature variation across the rotor disc and minimum von mises stress possible.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Performance and Emission Evaluation of a Biodiesel (Rice Bran Oil Methyl Ester) Fuelled Transportation Diesel Engine With and Without Egr

Dr.SP.Arunkumar., Professor, Department of Mechanical Engineering, Siddhartha Institute of Technology and Sciences, Narapally, Telangana – 501 301, India

C.Prabha., Assistant Professor, School of Mechanical Engineering, Karunya University, Coimbatore, Tamilnadu – 641 114, India

Dr.Naveen Kumar., Professor, Department of Mechanical Engineering, Siddhartha Institute of Technology and Sciences, Narapally, Telangana – 501 301, India

Abstract:--

This paper is to investigate the use of vegetable oil derivatives (rice bran methyl ester) to substitute mineral diesel fuel. Straight vegetable oils pose some problems like injector coking, carbon deposits, etc., when used as a fuel in an engine. These problems are due to high viscosity, low volatility and polyunsaturated character of vegetable oils. Transesterified vegetable oil derivative called "biodiesel" appear to be most convenient way of utilizing vegetable oil as a substitute fuel in diesel engines. In this paper performance and exhaust emissions with neat diesel fuel and diesel–biodiesel blends have been investigated with and without exhaust gas recirculation. In the investigation, firstly biodiesel from non-edible rice bran oil has been made by transesterification. In the second phase of this investigation, experiment has been conducted with neat diesel fuel and diesel–biodiesel blends in a four stroke direct injection (DI) diesel engine with and without exhaust gas recirculation. Various blends of biodiesel (rice bran methyl ester) and diesel ranging from 10 % to 50% blend were used for performance and emission test in the transport diesel engine. Compared with conventional diesel fuel, diesel–biodiesel blends showed lower carbon monoxide (CO), and smoke emissions. Detailed engine tests show that biodiesel can be used as partial substitute fuel in existing diesel engines without substantial hardware modification and it significantly lowers the emissions of harmful species from diesel engines without jeopardizing the engine performance.

Keywords:--

Biodiesel, rice bran oil, transesterification, exhaust gas recirculation performance and emission test.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Multiplexers, Demultiplexers, Current Progress and Algorithms of Wavelength Assignment in WDM Network

Immidisetty V Prakash., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Valiki Vijayabhasker., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Srinivas Gadari., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Abstract:--

The backbone of modern telecommunication industry comprises of wavelength division multiplexed (WDM) framework. It is imagined that our reality will turn out to be progressively interconnected with mobile communications empowering us to play out an expanding scope of tasks. Future wireless networks will require optical network antenna base examinations with adequate data transmission to give singular clients a bigger transfer speed. It is normal that high capacity networks will utilize Wavelength Division Multiplexing (WDM) to build the complete transfer speed transmitted over the optical access network. A WDM framework transmits data by multiplexing number of free data conveying wavelengths on a single fiber and de-multiplexing at the receiver. The paper describes the Multiplexers, De-multiplexers, current progress of WDM and the algorithms of wavelength in WDM network. Wavelength division multiplexing (WDM) includes the transmission of number of signs having distinctive wavelengths in parallel on a single optical fiber. Wavelength Division Multiplexed switching networks are critical for the future transport networks.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:
Siddhartha Institute of Technology & Sciences
And
Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Design and Implementation of Intelligent Transportation System through Internet of Things (IoT)

Velmani.R., Professor, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

A. Srinivasa reddy., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

M. Ranjith reddy., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

P.Swetha., UG STUDENT, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Abstract:--

The rapidly increasing vehicle population in India spurred by the population boom and economic upturns lays a critical burden on traffic management in the metropolitan cities (Hyderabad, Bangalore, Chennai, Mumbai etc..) and towns of the country. This paper proposes intelligent transportation system (ITS) using information and communication technologies like IoT and data analytics that apply to operational transportation, aiming to make transport systems smart, efficient, reliable, safe and environmentally sustainable. At every traffic signal the density of the traffic is detected with the help of IR sensors, then the traffic level is obtained. The IR sensors are connected to 8051 microcontroller. A GSM/GPRS is connected to microcontroller to deliver the real time traffic information through IoT to the traveller, so that he can know the traffic level and can take an alternate. The information gathered from the traffic signals is processed with the help of Big Data Analytics and the data is to be sent to every traveller's to make their journey safe and reach their destination in time.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Advanced E-Ticketing and Bus Tracking System Using IOT & RFID for Public Transportation

G.Sudhagar., Professor, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

G.Ramesh., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

A.Harish Kumar., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

B.Alekhya., UG STUDENT, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Abstract:--

Public transportation system introduces the safe and secure transportation for the passengers. The main objective of our project is to enhance the usability and productivity of existing bus transportation system which can done by using IOT technology. An improvement in the existing transport system is E - Ticketing and arrival time prediction of bus in real time, seat availability information and controlling the accidents. This provides high reliability to the passengers. This scheme does not require the conductor which reduces the man power. By using IR sensor we can measure the distance of target so that we can control the accidents. RFID reader is used for the passengers to enter and exit the bus. GPS is used for tracking the bus. DC Motor is used for the purpose of opening and closing the bus door. All the information like location of the bus, seats availability are retrieved through the IOT. LCD display is for displaying the no. of seats available in bus. Further it can implement by using smart card.

Keywords:—

GPS,IOT ,RFID, Keil Software.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

And

Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Implementation of IoT Enabled Smart Farming System

Ayesha Firdous., Professor, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

M.Shailaja., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Shirisha Dubbaka., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

T.Ramya Thulasi., UG STUDENT, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Abstract:--

Agriculture plays vital role in the growth of agrarian community. Development of a country is not only about constructing tallest buildings and fastest trains, but also giving healthy food which is basic minimum requirement for every human being and encouraging the farmers. So it is need to utilize the advancement in technology in agriculture also. Agriculture is considered as the basis of life for the human species as it is the important source of food grains and other raw materials. The major issues related to agriculture have been always hindering the growth of the country. The only solution to solve these issues is smart agriculture, by using the cutting edge technology and altering the current traditional methods of agriculture. The Internet of Things is a new reality that is completely changing our everyday life, and promises to revolutionize modern agriculture. Hence the paper aims by forming an agriculture using smart Wireless Sensor Networks and IoT. In this proposed work a promising application of Wireless Sensor Networks (WSN) and IoT is used for precision agriculture.

Keywords:—

Smart agriculture, WSN, IoT

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Human Emotion Recognition Using Mean of Average and Maximum Pooling

D.Chandrasekhar., Professor, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

B.Naveen Kumar., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

B.Naveen., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

D.Sucharitha., UG STUDENT, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Abstract:--

Now a day's one of the unsolved problem in computer vision is recognizing or understanding other people's emotions and feelings. Although recent methods achieve close to human accuracy in controlled scenarios, the recognition of emotions in the wild remains a challenging problem. In this paper we proposed MAM Pooling (Mean of Average and Maximum) method with CNN to recognize human emotions. We focus on automatic identification of six emotions in real time: Happiness, Anger, Sadness, Surprise, Fear, and Disgust. Convolutional Neural Network (CNN) is a biologically inspired trainable architecture that can learn invariant features for a number of applications. In general, CNNs consist of alternating convolutional layers, non-linearity layers and feature pooling layers. In this work, a Novel feature pooling method, named as MAM pooling is proposed to regularize CNNs, which replaces the deterministic pooling operations with a stochastic procedure by taking the average of max pooling and average pooling methods. The advantage of the proposed MAM pooling method lies in its wonderful ability to address the over fitting problem encountered by CNN generation.

Keywords:--

Emotion; Face Expression; MAM Pooling, CNN.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:
Siddhartha Institute of Technology & Sciences
And
Institute For Engineering Research and Publication (IFERP)

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Gait Assistive Exoskeleton Device for Semi Paralyzed Stroke Survivors

Y.Vasantha Rao., Professor, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Swamy Bhukya., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India.

Prasanth Kancharana., Assist. Prof, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

M.V.Divya., UG STUDENT, Department of ECE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Abstract:--

Controlling human gait is a dynamic and time critical activity and thus it requires a real time control environment. The main objective is to regain the walking ability for semi-paralyzed stroke affected patients and to help them walk independently without any support. MEMS Accelerometer sensor senses the walking movements of the patient's healthy leg. By using these values as reference, microcontroller is programmed and interfaced to the motor fixed in the exoskeleton device. Microcontroller is used to control the motor according to the input given by the Accelerometer. Microcontroller is programmed using PIC CCS Compiler software. An exoskeleton device for semi paralytic patients is developed to exercise their muscles and to revive the feeling of walking in their legs at a much lower cost than which is available on the market today.

Keywords:--

Human Gait, Exoskeleton device, MEMS Accelerometer Sensor.

International conference on Recents Advancements in Engineering and Technology

Hyderabad, Telangana, 15th – 16th March 2019

Discovering Newsworthy Themes from Sequenced Data: A Step towards Computational Journalism

Dr.A.Sathyanarayana., Professor, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

B.Rajan., Assist. Prof, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

T Kiran Kumar., Assist. Prof, Department of CSE, Siddhartha Institute of Technology & Sciences, Narapally, Ghatkesar, Hyderabad, Telangana, India

Abstract:--

Automatic discovery of newsworthy themes from sequenced data can relieve journalists from manually poring over a large Amount of data in order to find interesting news. In this paper, we propose a novel k-Sketch query that aims to find k striking streaks to best summarize a subject. Our scoring function takes into account streak strikingness and streak coverage at the same time. We study the k-Sketch query processing in both offline and online scenarios, and propose various streak-level pruning techniques to find striking candidates. Among those candidates, we then develop approximate methods to discover the k most representative streaks with theoretical bounds. We conduct experiments on four real datasets, and the results demonstrate the efficiency and effectiveness of our proposed algorithms: the running time achieves up to 500 times speedup and the quality of the generated summaries is endorsed by the anonymous users from Amazon Mechanical Turk. We consider the problem of discovering frequently occurring episodes in a sequence. Once such episodes are known, one can produce rules for describing or predicting the behavior of the sequence. We give efficient algorithms for the discovery of all frequent episodes from a given class of episodes, and present detailed experimental results.

Keywords:--

History, Games, Approximation algorithms, Query processing, Electronic mail, Algorithm design and analysis.

15th – 16th March 2019

ICRAET – 19

ISBN: 978-81-939929-7-5

Organized by:

Siddhartha Institute of Technology & Sciences

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Institute For Engineering Research and Publication (IFERP)

