ICEESC-2021

Virtual Conference

INTERNATIONAL CONFERENCE ON
EMERGING ELECTRICAL SYSTEMS AND CONTROL

06ᵀᴴ & 07ᵀᴴ MAY 2021

VIRUDHUNAGAR

ORGANIZED BY

DEPARTMENT OF EEE,

SETHU INSTITUTE OF TECHNOLOGY, VIRUDHUNAGAR (DISTRICT)

IN ASSOCIATION WITH

INSTITUTE FOR ENGINEERING RESEARCH AND PUBLICATION (IFERP)

ICEESC-2021

International Conference on
Emerging Electrical Systems and Control
(Virtual Conference)

Virudhunagar
06th - 07th May, 2021

Organized by:

Department of EEE, Sethu Institute of Technology, Virudhunagar
&
Institute For Engineering Research and Publication [IFERP]

Rudra Bhanu Satpathy

Chief Executive Officer

Institute For Engineering Research and Publication.

On behalf of *Institute For Engineering Research and Publications (IFERP)* and in association with *Sethu Institute of Technology,* Virudhunagar, Tamil Nadu, India. I am delighted to welcome all the delegates and participants around the globe to *Sethu Institute of Technology, Virudhunagar, India* for the "*International Conference on Emerging Electrical Systems and Control (ICEESC-2021)*" Which will take place from *06th - 07th May'2021*

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 & SIT**) 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 *Virudhunagar, Tamil Nadu, India*

Sincerely,

Rudra Bhanu Satpathy

Preface

The *International Conference on Emerging Electrical Systems and Control (ICEESC-21)* is being organized by *Department of EEE, Sethu Institute of Technology, Virudhunagar* in Association with *IFERP-Institute for Engineering Research and Publications* on the 06th – 07th May, 2021.

Sethu Institute of Technology has a sprawling student –friendly campus with modern infrastructure and facilities which complements the sanctity and serenity of the major city of Virudhunagar in Tamil Nadu.

The *"International Conference on Emerging Electrical Systems and Control"* 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 **"Electrical Systems and Control"** which were given International values by *Institute for Engineering Research and Publication (IFERP).*

The International Conference attracted over 180 submissions. Through rigorous peer reviews 41 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.

ICEESC -21

Message from Hon'ble Chairman

Mr.S.Mohmaed Jaleel

Hon'ble Chairman,SIT, Kariapatti

I am pleased to welcome you to the International Conference on Emerging Electrical Systems and Control -2021 (ICEESC-2021) to be held on 06th & 07th May, 2021 at Sethu Institute of Technology (Autonomous), Pullor in association with Institute For Engineering Research and Publication (IFERP), Chennai.

The intent of any conference is not only to discuss lively and emerging issues of a particular domain but also dissemination of the awareness among other learned folks. Over the years, dramatic improvements have been made in the field of Electrical Engineering and applications. I hope that ICEESC-2021 will become surely the most important International conference dedicated to bring out latest trends in Engineering and Technology.

In order to provide an outstanding technical level for the presentations at the conference, we have invited distinguished experts to participate in the Technical Programme Committee. We will ha Technical sessions, plenary sessions by keynote speakers during 2 days of conference including the awards presentation during the closing session on the last day of the conference.

I hope ICEESC-2021will make you aware of state-of-the art systems and provide a platform to discuss various design issues and challenges.

Message from Principal

Dr.A.Senthil Kumar

Principal, SIT, Kariapatti

On behalf of the Local Organizing Committee and SIT, the hosting institution and IFERP, it is my great pleasure to welcome you to the International Conference on Emerging Electrical Systems and Control -2021 (ICEESC-2021) to be held on 06th & 07th May, 2021 at Sethu Institute of Technology (Autonomous), Pulloor in association with Institute For Engineering Research and Publication (IFERP), Chennai. The idea to host the ICEESC-2021 in SIT, Kariapatti is to bring together Researchers, Scientists, Engineers, Scholars and Students in the areas of Computer Science, Electronics and Communication Engineering and Electrical Engineering.

The ICEESC-2021 Conference will foster discussions and hopes to inspire participants from a wide array of themes to initiate Research and Development and collaborations within and across disciplines for the advancement of Technology. I feel it is important to reiterate the need to translate Engineering & Technology into knowledge to help overcome societal challenges.

The various thematic sessions will showcase important technological advances and highlight their significance and challenges in a world of fast changes. I welcome all of you to attend the plenary sessions and oral presentations and invite you to interact with the conference participants.

The Local Organizing and Conference Committees will make any possible effort to make sure that your participation will be technically rewarding and a pleasurable experience of our Kurnool City.

I am looking forward to meeting you in SIT during ICEESC-2021and to sharing a most pleasant, interesting and fruitful conference.

Message from HOD

Dr.A.Srinivasan

HOD-EEE,SIT

We on behalf of organizing committee welcome you all to the Virtual International Conference on Emerging Electrical Systems and Control -2021 (ICEESC-2021) held on 7th **May, 2021** jointly organized by Department of EEE, Sethu Institute of Technology (Autonomous), Pulloor in association with Institute For Engineering Research and Publication (IFERP), Chennai.

The conference is aimed at bringing out the research and innovative ideas not only in the field of Electrical Engineering but also in Electronics, Computer Science and Mechanical Engineering The theme of the conference is science for sustainable development.

The conference will be witnessing experts from USA and premiere institution like IIT for delivering keynote address. The conference will provide a common platform for faculties , industry personnel, researchers , scientist and students for knowledge sharing and to promote professional interaction between them towards research and innovation.

The information about the conference was sent via virtual platform. We have received appreciable number of inquiries and registrations. The abstract was submitted through virtual platform and later full paper was submitted. All papers were peer reviewed before presentation.

The success of the meticulously organized program will be nothing without the active participation and support of all participants.

We express our heartfelt thanks to all the experts , authors of the papers and the entire team ICEESC 2021 for their valuable contribution towards the conduction of conference.

We once again welcome you all and wish you to have a great experience.

Thank you

Dr.A.Srinivasan, HOD-EEE,SIT

ICEESC-21

International Conference on Emerging Electrical Systems and Control

Keynote Speakers

Dr. Raziq Yaqub

Associate Professor

Alabama A&M University Graduate School

Huntsville, Alabama Area, United States

BIOGRAPHY

Dr. Raziq Yaqub an Associate Professor in the EE&CS Department, Alabama A&M University, USA, earned a Ph.D. in Wireless Communication from Keio University, Japan, and an MBA in Marketing from Fairleigh Dickenson University, New Jersey, USA. He is an inventor of technologies in Cybersecurity of Financial Technologies, Wireless Communications, Smart Grid, and Connected Electric Vehicles. He has 34 issued patents, and is a recipient of "Inventor of the Year Award-2014" from the Inventors Hall of Fame, New Jersey. He received an award of "Excellence in Scholarship and Research 2019" from the President of his university, an award of "Innovator Young Faculty" and an award of "Outstanding Engineering Educator" from the Dean of his college, and "Outstanding Engineer 2020" award from IEEE region-3.

He remained an Executive Director of Toshiba America Research, New Jersey, to lead 4G/LTE, Department head of NIKSUN University, Princeton, New Jersey, to lead Cybersecurity, and Director of Global R&D of Tecvox, Huntsville, AL, USA, to lead wireless charger and media hubs for the automotive industry. He also remained Sr. Consultant to the State of New Jersey to secure $87M grant, a spokesperson of Department of Homeland Security in 3GPP", an invited Researcher in NASA Research Center, Cleveland, Ohio, and an inventor for Wells Fargo, USA.

He also remained Chairman, and contributor in standards organizations such as 3GPP, IEEE, WiMAX, MWIF, OMA, Lead Member for ABET accreditation, Chairman Academic Standards Committee, Chair IEEE Membership Development, Evaluator for technical papers, Ph.D. theses, patents, and grant proposals, Vice Chairman of IEEE Southeast Conference 2019, organizer of numerous international conferences, Invited/Keynote speaker, Panel Moderator/Resource Person in international events. He is a Senior Member of IEEE. He communicates in English, Japanese, Hindi, and Urdu, and has 25 years of experience in the industry, government, and academia

Dr. DP Kothari

Ex Director IIT Delhi

Ex VC VIT Vellore

Ex Principal VNIT Nagpur

Chairman BOG Tihri institute UK

Director research SB JAIN institute of Technology management and research Nagpur

BIOGRAPHY

Dr. D. P. Kothari obtained his BE (Electrical) in 1967, ME(Power Systems) in 1969 and Ph.D. in 1975 from BITS, Pilani, Rajasthan. From 1969 to 1977, he was involved in teaching and development of several courses at BITS Pilani. Earlier Dr. Kothari served as Vice Chancellor, VIT, Vellore, Director in-charge and Deputy Director (Administration) as well as Head in the Centre of Energy Studies at Indian Institute of Technology,

Delhi and as Principal, VRCE, Nagpur. He was visiting professor at the Royal Melbourne Institute of Technology, Melbourne, Australia, during 1982-83 and 1989, for two years. He was also NSF Fellow at Perdue University, USA in 1992. He also taught at Melbourne University Australia for one semester in 1989.

Dr. Kothari, who is a recipient of the most Active Researcher Award, has published and presented 830 research papers in various national as well as international journals, conferences, guided 56 Ph.D scholars and 68 M. Tech students, and authored 69 books in various allied areas. He has delivered several keynote addresses, 100 plus Webinars and invited lectures at both national and international conferences. He has also delivered 42 video lectures on YouTube with maximum of 1,00,000 hits!

Dr. Kothari is a Fellow of the National Academy of Engineering (FNAE), Fellow of Indian National Academy of Science (FNASc), Fellow of Institution of Engineers (FIE), Fellow IEEE ,Hon. Fellow ISTE and Fellow IETE.

Having received 77 awards till now, his many awards include the National Khosla Award for Lifetime Achievements in Engineering (2005) from IIT, Roorkee. The University Grants Commission (UGC), Government of India has bestowed the UGC National Swami Pranavandana Saraswati Award (2005) in the field of education for his outstanding scholarly contributions.

He is also the recipient of the Lifetime Achievement Award (2009) conferred by the World Management Congress, New Delhi, for his contribution to the areas of educational planning and administration. Recently he received Excellent Academic Award at IIT Guwahati by NPSC-2014.

He has received 6 Life Time Achievement awards by various agencies on 19th February, 4th March, 11th March, 18th March, 20TH March and 25th March 2016, respectively. On 20th April 2016 he received 'Living Legend' Award in Chennai Conference.

Recently received Malviya Award for Excellence in Power System at IIT Gandhinagar on 17th Dec 2020.

Dr Kothari is also distinguished Emeritus professor and adjunct professor at several institutes such as Charutar university Gujrat and Wainganga college of engineering Nagpur.

Currently Dr. Kothari is with S.B Jain Institute of Management , Research and Technology, Nagpur serving as Director Research and Professor, .He is also chairman board of governors of THDC Institute of Hydropower Engineering and Technology ,Tehri and Visiting Professor at Wainganga college of engineering Nagpur.

Wikipedia Link: http://en.wikipedia.org/wiki/D.P.Kothari

ICEESC-2021

International Conference on Emerging Electrical Systems and Control

Sethu Institute of Technology, Virudhunagar, 6th - 7th May, 2021

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CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

ICEESC-2021

International Conference on Emerging Electrical Systems and Control (Virtual Conference)

Virudhunagar
06th - 07th May, 2021

ABSTRACTS

Design and Implementation of Smart Home using Cisco Packet Tracer

Aastha Saini, Galgotias College of Engineering and Technology
Anushka Rai, Galgotias College of Engineering and Technology
Kumari Ankita, Galgotias College of Engineering and Technology
Ruchi Tripathi, Galgotias College of Engineering and Technology

Abstract:--
We have made a smart home in which the currently released IOT technology is used to automate different activities of home. And these activities can be done without the involvement of users. The previous software has only networking devices, but we have used here the latest version of the software (Cisco packet tracer version 7.2) . This helps people to manage the home appliances and build an absolute environment in home. IOE devices connected through the internet to control and monitor the home devices such as cooling, alarming, heating. When the devices are computerized, they can be used to control the activities functioning in a smart home. The devices used to provide a variety of network components that consider a real network, and then apply and configure the devices to design a real network. The aim of this research is to come up with the simulation of appliances that can control and configure IOE devices with classically networking device, and process data at the back end.

Index Terms
Internet of things, Home Gateway, Server, RFID Reader, Packet tracer simulator.

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Agricultural Crop Prediction using Regression methods based on Machine Learning Algorithms

Assoc. Prof Boominathan P, School of Computer Science and Engineering, VIT University, Vellore, Tamil Nadu - 632014

Aayush R, School of Computer Science and Engineering, VIT University, Vellore, Tamil Nadu - 632014

Abstract:--

In India agriculture contributes approximately 23% of GDP and employed workforce percentage is 59%. The technological contribution may help the farmer to get more yield. The prediction of the yield of different crops may help the farmer regarding taking the decision about which crop to grow. The research focuses on the prediction of different crops yield using predictive machine learning techniques. The crop growth depends on various parameters such as Soil moisture, Surface temperature, Rain water, protein, cultivation area, pressure in soil, Humidity level present in air and Ph level. In this paper, Data Analysis is done by collecting data from various open sources and predictive models are designed. Regressors like Random Forest, Decision Tree, Gradient Boosting and CatBoost are tested for the effective prediction of agriculture yield for various crops in India.

Keywords:

Machine learning, Rainfall data, regressors, Crop Yield, Predictive models, Data Analysis.

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Home Car Services

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Abhay Bhattacharya, B.Tech(Computer Science & Engineering) Lovely Professional University, Phagwara,India
Richa Jain, Assistant Professor, School of Computer Science & Engineering Lovely Professional University, Phagwara, India

Abstract:--
        The ambition of this project is to provide Car services to the customer at their spot. When the customer fulfils all the details and submits. The mechanic will receive the mail and reach at that spot with his kit and provide the car services according to the requirements of the customers. As me and my colleagues had faced these problems during car service is that we have to take the car to the service center and have to wait till all the services are done by the worker. Usually, people went on Sunday for their car services, but It take 2 to 4 hours for services or it took the whole day . For customers it is a total waste of time and during lockdown it is not possible to step out for their car services. So, we decided to step up and solve this for others by providing all services related to car health maintenance at your doorstep. Following this approach, we made a website through which customers can register or Login for car services by sitting at home. You can access it from anywhere anytime in our available locations. When all the formalities are done by the customer our employer will come to the chosen spot by customer and do all the car services. So the advantage the customer will get here is that without wasting time at the service centre he can utilize his time during the service. Outcome of this project is oddly satisfying; it saves a lot of time, traveling expenses to the customers and has great potential in the future.

Keywords
        cut corner shop, product order, web application, car services.

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Detecting Failure in Jet Engines Using Uncertainty-based Changepoint Anomaly Detection

Ahmad Kamal Bin Mohd Nor, Mechanical Department,Universiti Teknologi Petronas, Malaysia
Srinivasa Rao Pedapati, Mechanical Department,Universiti Teknologi Petronas, Malaysia
Masdi Muhammad, Mechanical Department,Universiti Teknologi Petronas, Malaysia

Abstract:--
Anomaly detection in Prognostic and Health Management (PHM) domain by exploiting the information from deep learning uncertainty is presented in this paper. The behaviour of the uncertainty is monitored by cumulative sum (CUSUM) anomaly detection to detect abrupt changes in uncertainty, which translates the transition from healthy state to deterioration state. A probabilistic Long Short-Term Memory (LSTM) neural network is employed to predict the Remaining Useful Life (RUL) sequence distributions of engineered system. A case study of turbofan engines prognostic is presented to demonstrate the ability of this method. The proposed technique shows excellent result in term of Root Mean Square Error (RMSE) measure between ground truth anomaly and predicted anomaly and good result in scoring metric that evaluates the combination of early and accuracy of anomaly detection compared to the ground truth.

Keywords:
Changepoint Detection, Anomaly Detection, Deep Learning Uncertainty, PHM, CMAPSS

Advanced H-Bridge Controlled Transformer-Less Buck-Boost Dc-Dc Converter for Fast Charging In Electric Vehicles

S.Ajith kumar, PG Scholar, Electrical and Electronics Department ,Sethu Institute Of Technology
Dr.R.M.Sasiraja, Associate Professor, Electrical and Electronics Department ,Sethu Institute Of Technology

Abstract:--
The variety of electric vehicles is still restricted due to their charging periods. By introducing a new type of converter and optimization methods, the limitations of charging time can be overcome. In this work, an innovative H-Bridge controlled transformer-less Buck-Boost DC-DC Converter proposed for EV charging applications. The main contribution of the proposed converter is to provide higher efficiency and increase the charging speed. The converter performance is verified using simulation and experimental results. Compared to other topologies, the proposed converter increases charging time and switching speed.

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Solar Inverter with Arduino Based Variable MPPT Control

A. Anisha Nasrin, Post Graduate Student, Sethu Institute of Technology
Dr. A. Srinivasan, Head of The Department, Sethu Institute of Technology
V. Vaishnavi, Assistant Professor, Sethu Institute of Technology

Abstract:--

The rapid growth of the population leads to a rise in demand for renewable energy sources. Solar photovoltaic energy has proved a better substitute for this problem. The solar system provides poor efficiency when directly connected to load. MPPT (maximum power point Tracking) is a promising technique to increase efficiency and used to extract maximum power. Different algorithms are introduced to increase the efficiency of the MPPT algorithm. We have proposed a Arduino based MPPT algorithm to overcome the exiting drawback .Normally , phase locked loop control method applied to achieve a grid synchronization. Such method has been changed with an Arduino controlled MPPT to improvise the overall effectiveness of the system.This project proposed a variable step size based P&O MPPT to achieve high accuracy and fast dynamic response. Arduino controller used to generate PWM pulse for MPPT. Implementation results show that this system is talented to effortlessly track the maximum power point of PV cells.

Keywords:

MPPT, Variable, Arduino, Embedded

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Comparison Study of Hybrid Energy Storage System with Two Different Converter Topologies for Electric Vehicle Applications

Anuj V, PG Scholar, M Tech Power Electronics, Department of Electrical and Electronics Engineering, Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Coimbatore, India

M Jayakumar, Department of Electrical and   Electronics Engineering, Amrita School of Engineering, Amrita Vishwa Vidyapeetham Coimbatore, India

Abstract:--
The main objective of doing this project is to design and develop a proper converter topology, which better support the energy management and power flow in both direction. In other words to formulate a hybrid energy storage system with battery and supercapacitor (SC), which is able to reduce the stress in the battery. The whole system is designed such that it is applicable in a permanent magnet direct current (PMDC) motor drive for electric vehicle (EV). A proper control strategy has to be developed in order to obtain the optimal solution. There are two topologies (Single unidirectional and bidirectional converter topology, Two bidirectional converter topology) selected to do this work and these two topologies are studied, verified in detail. Also a comparative study of these two topologies is carried out. The entire Simulation of system is done in MATLAB/Simulink.

Index Terms—
   Supercapacitor, Battery, Hybrid energy storage system, Bidirectional converter, Electric vehicle, Hybrid electric vehicle (HEV). Plug-in hybrid electric vehicle (PHEV)

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A Dynamic Mismatch Loss Mitigation (MLM) algorithm with Dual Input Dual Output (DIDO) converter for Solar PV Systems

A. Srinivasan, Professor, Department of Electrical and Electronics Engineering,Sethu Institute of Technology, Virudhunagar, India
S. Devakirubakaran, PG Scholar CAD-CAM, Wainganga college of Engineering and Management
B. Meenakshi Sundaram, PG Scholar CAD-CAM, Wainganga college of Engineering and Management

Abstract:--
      Partial shading is an unavoidable factor in the PV power generation. It causes the mismatch loss in the PV array that reduces the efficiency. There are many research works were developed to mitigate the mismatch losses. The MPPT algorithm, static and dynamic reconfiguration schemes were employed for the mismatch loss mitigation. However, these methods were failed in some conditions to extract the maximum power. In this work, a new kind of Mismatch Loss Mitigation (MLM) algorithm has been proposed. A dual input dual output converter has been developed to operate the PV system with even current generating rows. The PV row currents has been measured by using the current sensor and fed to the controller. The controller performs the algorithm and generates the triggering signals to the DIDO converter and it operates the PV rows with even current generation. The MATLAB/Simulink® is used to simulate the DIDO converter and analysing the theoretical values.

Keywords –
      photovoltaic effect, Array configuration, Mismatch losses, Partial shading, maximum power point extraction.

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Feature Selection and Pre-processing Technique for Parkinson's Disease Prediction

Dr.Pushpa Ravikumar, Professor & Head ,AIT Chikmagalur
Swathi H.C, Student ,AIT Chikmagalur
Priyanka N, Assistant Professor, AIT Chikmagalur

Abstract:--
　　　Parkinson's sickness (PD) is one in all the foremost public health issues within the world. It's a well-known proven fact that around a million folks suffer from Parkinson's sickness. Whereas the amount of individuals affected by Parkinson's sickness worldwide is around 5 millions. Thus, very vital to predict Parkinson's sickness in early stages so early arrange for the required treatment will be created. Feature choice may be a core downside in machine learning. It have a very vital role in creating economical machine-controlled choices. Sensitive to the vey first variety and centers of the clusters is one disadvantage of fuzzy c-means cluster methodology. Aiming to decrease in the sensitiveness, a part of supervision-based fuzzy c-means clustering method is very well known during the survey done on the given paper. During this methodology, the initial clustering of the data is done with commonplace fuzzy c-means algorithmic rule. If the cluster final result won't accord with the given structure of the knowledge, there cab be additional clusters that are incorrectly separated leading to some clusters near to one another. The more nearer clusters are often found by investigation the partition matrix. Those close clusters ought to be divided or incorporate. In each things, approaches are then planned during this new methodology to update the appropriate cluster variety and cluster centers. With the new updated centers of the clusters are tagged as patterns, partly supervised fuzzy clustering is carried to convey the suitable clusters. Experiments on four artificial dataset and a true dataset implies that the present cluster methodology has sensible performance by examination to the quality fuzzy c-means cluster methodology. In order to achieve this above objective this paper has been designed to predict Parkinson's Disease using feature selection and pre-processing techniques like Randomized algorithm and Fuzzy C-means clustered algorithm.

Index Terms
Clustering using fuzzy- C means, Randomized feature selection , Parkinson's disease, Motor and Non-motor symptoms.

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Detection of Bone Cancer using VGG16

Dr. Sunitha M.R, Professor, AIT, CSE, Chikmagalur

Huda Rahman, 4th Sem, M.Tech, AIT, Chikmagalur

Dr. Varun E, Assistant Professor, CSE, AIT, Chikmagalur

Abstract:--

Bone sarcoma, also known as bone cancer, is a rare form of cancer that refers to an irregular growth of tissue within the bone that has a high risk of spreading to other areas of the body. Kids, adolescents, and young adults are the most frequently affected. There are no known causes for bone cancer. As a result, only early diagnosis will increase the odds of surviving a bone sarcoma. The use of medical imaging modalities (like X-ray, MRI, and CT imaging) in combination with image processing techniques will increase the accuracy of bone tumor detection. This paper proposes a new method is introduced for detection of tumor using VGG16 which gives good results.

Keywords:

VGG16, Bone Cancer, Canny Edge Detection, Smoothing Filter, Averaging Filter.

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Enhanced UPQC for mitigation of Power issues

Dr. Vodapalli Prakash, Kakatiya Institute of Technology & Science, Warangal, Telangana, India

Abstract:--
       Todays all applications are combined with energy units due to the enormous response from the integrated systems. There is a need to employ in compensating power quality problems due to industrial modernization. In a position everyone required to work on the latest devices made up of power electronics converters. There are various devices for conditioning of power supply. Especially, In custom power devices, one of the versatile device called Unified power Quality conditioner, which having the characteristics to correct the disturbances in the network at various stages and compensates at conjunction terminus. This device takes care of voltage-current related problems and extends for all transient and dynamic in a distribution systems. To reach the all the expectations, Power Quality is a major science it deals with different power variations and disturbances etc. By employing different energy elements yields to improve various problems at various levels in a distribution network. A trial has made to combine UPQC that adds a DC/DC converter supplied by a fuel cell, photovoltaic units executed MATLAB domain.

Index Terms-
       Convolutional neural networks, Disease identification, Inception model, VGG16 model

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Onshore Conveter in Series Connected Offshore Wind Form Using ANN Based Modular Multilevel Conveter

G.Soundradevi, Professor, Sethu Institute of Technology
J.Rahila, Associate Professor, Sethu Institute of Technology
M.Dhivya, Post Graduate Student, Sethu Institute of Technology

Abstract:--

In contrast to traditional HVDC-based offshore wind farms, series-connected offshore wind farms do not require transformers, Voltage Source Converters (VSCs), or platforms in the ocean, resulting in significant cost savings. In this paper, an Artificial Neural Network (ANN) based onshore converter is proposed to reduce the costs and power loss of series connected offshore windfarms. It uses Half Bridge (HB) Modular Multilevel Converter (MMC) and Full Bridge (FB) MMC. The DC voltage of the HB-MMC is regulated to be the rated DC voltage using neural training in this type of onshore converter, while the DC voltage of the FB-MMC will vary from negative rated DC voltage to positive rated DC voltage. The DC connection current of the series-connected offshore windfarm can be operated at will using the FB-variable MMC's DC voltage. Furthermore, DC connection current control strategies are proposed to reduce the offshore windfarm's power loss. To ensure the onshore converter's normal operation, the capacitor voltage balance control, which is suitable for FBMMC with variable DC voltage, is proposed. Finally, simulation and experimental results show that the proposed onshore converter and control algorithm are feasible.

Index Terms

Voltage Source Converters (VSCs), Artificial Neural Network (ANN), Modular Multilevel Converter (MMC), Full Bridge (FB), onshore converter.

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High Performance Wind Power Generation Based On Quasi Z Source Inverter

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Dr.R.M. Sasiraja, Associate professor, Dept. of EEE, Sethu Institute of Technology, Virudhunagar,, Tamilnadu, India

Abstract:--
The wind turbine generation system based on the quasi-Z-source inverters (qZSI) with maximum boost control. The proposed system can boost and generate the desired output voltage efficiently when the low voltage of the generator is introduced according to the low wind speed. Moreover, when the wind speed is high, providing higher voltage, the system can also work like the traditional inverter without the boost condition. The reason of using qZSI instead of ZSI is that the required capacitance of the passive network can be largely reduced. The proposed system has high performance, minimal component count, increased efficiency and reduced cost. These outstanding performance attributes make the proposed system suitable for the wind turbine distributed generation systems

Key words:
PMSG, quasi-Z-source inverter, wind power generation, PWM, IGBT.

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A Review on LSTM Recurrent Neural Network based Short-Term Residential Load Forecasting

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Dr.K.Kanimozhi, Professor- EEE Department, Sethu Institute of Technology, Kariapatti

Abstract:--

As the power system is facing a transition towards a more intelligent, flexible and interactive system with higher pene- tration of renewable energy generation, load forecasting, espe- cially short-term load forecasting for individual electric custom- ers plays an increasingly essential role in the future grid planning and operation. Other than aggregated residential load in a large scale, forecasting an electric load of a single energy user is fairly challenging due to the high volatility and uncertainty involved. In this paper, we propose a long short-term memory (LSTM) recur- rent neural network (RNN) based framework, which is the latest and one of the most popular techniques of deep learning, to tack- le this tricky issue. The proposed framework is tested on a public- ly available set of real residential smart meter data, of which the performance is comprehensively compared to various bench- marks including the state-of-the-arts in the field of load forecast- ing. As a result, the proposed LSTM approach outperforms the other listed rival algorithms in the task of short-term load fore- casting for individual residential households.

Keywords

Short-Term Load Forecasting, Recurrent Neu- ral Network, Deep Learning, Residential Load Forecasting

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Designing of Covid 19 Patient's Aiding Machine Using Labview Simulation Softwar

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Keerthigaivani K, Student of Electrical Engg., Coimbatore Institute of Technology, Coimbatore
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Abstract:--
  The coronavirus COVID-19 pandemic is the defining global health crisis of our time and the greatest challenge we have faced since World War Two. The virus has spread to every continent except Antarctica since its emergence in Asia in 2019. We have now reached the tragic milestone of more than two million deaths, and the human family is suffering under an almost intolerable burden of loss. However, the pandemic is much more than a health crisis; it is also a socioeconomic disaster of a scale never seen before. It has the potential to cause catastrophic social, economic, and political consequences in any country it touches, leaving deep and long-lasting scars. Physical separation is the most effective way to prevent the spread of COVID-19 virus. Therefore social distancing via physical contact avoidance of infected patients from the non-infected persons is mandatory. This in turn causes miscommunication between patient, patient caretakers with the first- line employee and doctors. As a result, the patient's contact with society has been completely cut off for a period of time, causing them to become overwhelmed and panicked, putting them even more at risk. Thus the need for an AIDING MACHINE with a package of benefits arose from these serious miscommunication issues. Therefore with the help of this aiding machine patient's mental and health well-being and caregiver's concerns for patients are improved with reducing the life risk of first-line defense health workers. And also this system is highly effective and user friendly for covid patients, first line employee and even for care takers too.

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A Smart Wheelchair Robotic System with Health Monitoring and Communication Aid for Paralyzed Person

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Abstract:--
    Hand gesture controllers are used for controlling the smart wheelchair robotic system with health monitoring and emergency communication aid. many people in the world has lost the ability to control the upper limbs and the lower limbs due to quadriplegia, paralyses or ageing factors. These types of the user requires specialized controlling systems for using an electrical wheelchair rather than using the traditional control by the joystick. In this type of wheelchair control system, hand gesture-controlled mobile wheelchair robots can be used as powerful helping system for the severely disabled people in their daily life, especially for helping them move voluntarily.

    In this project, we would be using the hand gesture controlled wheel chair robotic system. The hand gesture controlling system uses the movement of our hands to operate the system. Continous health monitoring is maintained and provided to help during the emergency conditions. Emergency alerting and aiding system helps in the alerting the nearby people and send alert messages to the hospital and close family members.

Keywords:
    Hand gesture controller, emergency communication aid, health monitoring system.

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Grid Power Compensation by Micro Grid System with Bidirectional AC/DC Converter and DC/DC Converter PWM Strategy

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Abstract:--

Maintaining the Power Quality at the Grid is essential. To accomplish this we implement the use of micro grid, DC-DC converter (buck and boost converter) and a bidirectional AC/DC converter. The available power from the micro grid is stored in a battery. The power from the grid is also stored in the battery through an AC-DC converter and a buck converter. When there is voltage drop in the grid side, the energy stored in the battery is boosted by the dc-dc converter and then transmitted to the grid through the bidirectional AC/DC converter by this process the power quality and power factor at the grid side is increased and harmonics is reduced. This project presents a novel simplified PWM strategy for the bidirectional ac/dc single-phase converter in a micro-grid system. Then, the operation mechanism of the novel simplified PWM is clearly explained. The number of switching's of the proposed simplified PWM strategy are one-fourth that of the conventional unipolar PWM and bipolar PWM. Based on the novel simplified PWM strategy, a feasible feed-forward control scheme is developed to achieve better rectifier mode and inverter mode performance compared with the conventional dual loop control scheme. The proposed simplified PWM strategy with proposed feed-forward control scheme has lower total harmonic distortion than the bipolar PWM and higher efficiency than both unipolar and bipolar PWMs. Furthermore, the proposed simplified PWM operated in the inverter mode also has larger available fundamental output voltage VAB than both the unipolar and bipolar PWMs. A prototype system is constructed and the control scheme is implemented using FPGA Spartan-3E XC3S250E. Both simulation and experimental results verify the validity of the proposed PWM strategy and control scheme.

Keywords—

Bidirectional AC/DC converter, simplified PWM strategy, total harmonic distortion.

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Vehicle Classification and Object Detection Using Deep Learning

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Abstract:--

As the Hardware and Software components are been developed at a very high rate proportionally the computer vision and their tasks are also become easier and increased, those days we just used it for calculation purposes etc. hence we have low performing rate. But now it is used for several purpose which are very useful to mankind. One of the useful tasks among those is object detection. There are several Algorithms, Software's, Hardware such as R-CNN,

Faster R-CNN

Yolo2, YoloV3,

YoloV4.

These all are used for object detection, but in this paper, we are going to use YOLOV4 which better, faster, high accuracy, high fps rate than all other algorithm. By using this Yolov4 we are going to use it in the real time video surveillance and traffic monitoring.

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Cost Estimation and Simulation of Solar Based Water Pumpng System

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Abstract:--
Agricultural technology is changing rapidly. Farm building and machineries are being implemented with a rapid growth. To be a part of improving technology we have designed a pv based water irrigation system. In this paper, a pv based water pumping is designed for a irrigation system supplanting the traditional system which utilizes non renewable energy sources that are exhaustible and non-friendly to the environment.The fundamental focus is to carrying out solar based power sources a direct result of its bounty and it is more unpredictable than some other fuel assets. The solar based water pumping system can be executed in hill areas where transmission of power is outlandish.The concept of Maximum Power Point Tracking (MPPT) algorithm is being used to get maximum power output. The output of the solar PV panel is stepped up using a chopper. The output of converter is given to inverter, which converts dc power to ac. This ac supply is given to induction motor which operates the centrifugal pump. The components are designed and simulated using MATLAB Simulink which verifies the system's functionality and stability along with its components.

Keywords
Solar panel, Capacitor, Multi-level Inverter, Induction Motor, Pump.

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Commit-Reveal Strategy to Increase the Transaction Confidentiality In Order To Counter the Issue of Front Running in Blockchain

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Abstract:--
Blockchain technology has certainly revolutionized the world. A decentralized approach devoid of a centralized server/third party access provides complete anonymity, security, and integrity. But still, there are some vulnerability in Blockchain, one of them we discussed in this paper is Front-Running. Front running is mostly exercised in the stock market sector where the traders try to front-run to gain more profit. Now as blockchain technology is flourishing at an immense rate, new forms of front running techniques have been encountered. Thus creating transaction vulnerabilities. In this paper, we explained the front-running issues on MCS-Dapps deployed on Ethereum Blockchain. Furthermore, we will study its working on the system and how it affects clients and miners on their gas price. Then we implemented a commit-reveal strategy to increase the transaction confidentiality to counter the issue of front running.

Keywords:
Smart contract, Dapps, Front running, Blockchain, Consensus, Ethereum, Truffle.

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Two Stage Dual Buck Transformer less Topologies for Photovoltaic Grid-Tied Inverter

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Prof. Swapnil D. Patil, Department of Electrical, ADCET, Ashta, Kolhapur, India
Prof. Suraj D. Pawar, Department of Electrical, ADCET, Ashta, Kolhapur, India

Abstract:--
      For residential application a grid connected transformer less photovoltaic (PV) inverter is presented. The inverter designed from a boost cascaded with buck converter along with a line frequency unfolding circuit. The high efficiency can be achieved because there is only one switch operating at high frequency at a time, and the converter allows the use of power devices and ultra-fast reverse recovery diode. This work begins with theoretical analysis and modeling of buck converter based inverter and the model indicates small boost inductance will leads to increase the resonant pole frequency and decrease the peak of Q, which help the system be controlled easier and more stable. Therefore, the output of the proposed inverter can be effective than that of the conventional two stage transformer less grid-tied inverter. The proposed inverter is analyzed in detail with operation modes given. The prototype modular is built to verify the effectiveness of the proposed inverter and its modulation strategies.

Keywords:
      PV grid, transformer less, buck converter etc.

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Sign Language Recognition of Indian Signs

Mohammad Afsar, Lovely Professional University
Piyush Kumar Singh, Lovely Professional University
Pooja Kumari Singh, Lovely Professional University

Abstract:--
    Normal Humans can easily communicate with each other using language or sounds but differently abled people who are deaf and dumb face problem in communicating with each other, they need someone to translate their actions and expressions into verbal form of communication to communicate with others. This dependency of one person on another to perform such basic task of communication is hectic and moreover what the translator is not available or present during emergency needs. This is the reason to implement the system of sign language recognition of Indian signs and to help in communicating deaf and dumb people. In this paper, a simple but effective method is proposed for the automatic recognition of the letter using hand action. The system uses machine learning algorithms to identify the sign, interpret it and display the meaning of the sign.

Keyword:
    Android, Computer Vision, Deep learning, Flutter, Indian Sign Language (ISL), Machine Learning, Model architecture, mobilenetv2

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IoT Based On Underground Cable Fault Identification Using Arduino

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Abstract:--

IoTprovenantestablishment cable line fault detection system is helpful for find out mistakes and its location in very stress-free manner Antiestablishment cables are prone to a wide range of faults owing to underground conditions, dress and tear, rodents .Noticing fault source is difficult fortotal line is to be dug in order to form fault at cable line.. Hence it saves a lot of period, money and lets to dealsneaky cable lines faster. We use IOTknowledge that allows the doyens to observer and check faults over internet. The edificeadverts fault with the help of likely divider network laid across the cable. Once a fault grows created in a rope line, aexactpower gets thru as per the resistors netmixture.

Keywords:

IOT-Internet of Things; LCD-Liquid CrystalDisplay; WIFI-Wireless Fidelity; IO-Input Output; ESP-Espressif Systems; MQTT-Message Queuing Telemetry Transport.

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Page | 23

A Methodological Survey for Stage-wise Identification of Alzheimer's Disease

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R. Bhavani, Professor, Department of Computer Science and Engineering, Annamalai University

Kavitha Chaduvula, Professor, Department of Information Technology, Gudlavalleru Engineering College

Abstract:--
Alzheimer's disease (AD) is related to brain which shows affect on memory and other mental functions, which mainly impairs people aged above 60. The cause of this disease is still unknown and research is going on to uncover the reasons behind it. This disease is irreversible, progressive; hence its detection at early stage is vital. While there is no cure for Alzheimer's disease or a way to stop or slow its progression, there are drug and non-drug options that may help treat symptoms. Identifying the current stage of the disease is the only option to proper medication. Though many approaches were proposed to cope with symptoms and improve quality of life, research is still going on for betterment. As the patients have to live with the disease the only choice we have is to improve the condition of the patient and make his/her daily life easier. This can be possible only with the accurate identification of the stage of the disease. Early identification of the disease helps for efficient treatment. This paper summarizes various architectures used for detection of stages in Alzheimer's disease. It also focuses on the types of images used such as s-MRI, f-MRI, PET, SPECT. Classification of brain images is the major task for detecting the stage of this disease. These images are analyzed using image processing techniques. Deep learning methods have shown an outstanding performance in the classification of Alzheimer's disease.

Index Terms—
Alzheimer's, MRI, CNN, PET, Deep Learning, Transfer Learning

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Load Frequency Control in Power Systems Using Duelist Optimization Algorithm Based Adaptive Controller

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Mrinal Buragohain , Professor, Department of Electrical Engineering, Jorhat Engineering College

Abstract:--
   The load frequency control uses communication networks for transmitting measurements and control signals. Controller is generally considered at continuous and discrete mode on execution by huge sample period that may outcomes at degenerated dynamic performance or still cause system instability. On contrary, Thermal, wind, hydropower system, maximum penetration decreases power system inertia that leads to rapid frequency response and higher frequency deviation following a contingency, and want rapid load frequency control. For reducing the steady state error and frequency deviation, at this manuscript proposes a Duelist Optimization Algorithm (DOA) for LFC control in three areas such as thermal, wind hydro interconnected power system. For good power tracking, proposed system introduces an adaptive PI fuzzy controller. The primary goals of load frequency control for power system to ensure zero steady state errors for frequency deviations and to minimize unscheduled power line flows among neighboring control areas. The Duelist Optimization algorithm is used to keep the system frequency near to their nominal value, control the system output, as well as preserve power balance in load variations. Then, proposed method is executed at MATLAB / Simulink platform and performance is estimated. The performance of DOA technique is compared by existing methods.

Keywords:--
   Frequency deviation, Duelist optimization, LFC, adaptive PID fuzzy controller, Wind area, Thermal area, Hydro area.

Novel Contingency Analysis of Radial Distribution System with Distributed generation

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Abstract:--
      Contingency analysis is one of the tools in smart distribution management system to analyze the contingencies, associated violations of line currents, bus voltages and power flows. In this paper, distribution power flow method using superposition principle is implemented to observe the contingencies under different loading conditions. The results are analyzed by placing distributed generation sources at various buses for different loadings. Contingency ranking is evaluated based on performance indices determining line over loading and bus voltage violations. The proposed method is illustrated through simulations of loaded 33-bus radial distribution system.

Index Terms
      Contingency Analysis, Distributed Generation (DG), Performance index, Radial distribution network(RDN)

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A Novel Bidirectional Electric-Drive-Reconstructed Onboard ANN Controlled Converter for Electric Vehicles

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G.Soundradevi, Professor, Sethu Institute of Technology

C.Krithika Kamalam, PG Scholar , Sethu Institute of Technology

Abstract:--

In this work, an Electric-drive-reconstructed onboard converter (EDROC) is presented. This vehicle is implemented with the highly advanced machine learning technique namely Artificial Neural Network (ANN) and PI controller network. This system is used the previous components presented in electric vehicle (EV) and it would not require any additional hardware. This system can be easily implemented in all the office, home and restaurant environments. This EDROC has two modes namely charging and driving mode. The charging is set the power factor unit and the driving mode is used to drive the motor. Even though it is highly flexible for the implementation, it is less in cost and volume than the previous EV.

Keywords:

EDROC, EV, charging and driving mode, ANN

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Indian Sign Language Recognition Application

Rajarshi Shome

Abstract:--

      Sign language is the most natural and expressive way for the hearing impaired. This paper presents the methodology which recognizes the Indian Sign Language and translates into the text format. The process includes four steps that are capturing the image, the training of the model, testing of the model and the recognition step.

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A Proposed Battery Storage System of Electric Vehicle

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Dr.A.Srinivasan, Professor& Head PRIST University

R.Aravindan, EEE Assistant Professor, Latha Mathavan Engineering College

J.Dani Abraham, Latha Mathavan Engineering College

Abstract:--
In this method we have proposed the overall several regions for overview in electric vehicle. In this method describe the development and comparison of the electric vehicle. In the existing method has lot of drawback like high implementation cost, less storage capacity, less efficiency and less reliable. The proposed method has includes the several components like solar, battery technology, charger design are performed the efficiency and improve the high storage capacity. The simulation results of output have been measured in the voltage and current can be measured in all over the system. The proposed simulation model has been the BMS architecture has been developed in 2020. The experimental setup has been measured the output voltage and current.

Index Terms
BMS, Inverter, and Electric vehicle

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Comparison of Transformerless Inverters for Photovoltaic Applications

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PS Sakthi Praneetha, Electrical and Electronics Engineering SSN College of Engineering, Chennai, India
Dr. V. Rajini, Electrical and Electronics Engineering SSN College of Engineering, Chennai, India

Abstract:--
The use of renewable energy systems has rapidly been increasing in the last few years. Solar power can be harnessed through Photovoltaic (PV) systems using Single Phase Transformerless Inverters. Conventional inverters with trans- formers possess a variety of demerits, namely reduced power distribution, large size of the inverter due to a bulky transformer, large footprint, more losses and a higher overall cost. Alterna- tively, transformerless inverters are: low weight, cost effective, low volume and high efficiency. These inverters utilize electronic switching instead of mechanical switching, therefore minimizing the heat and humidity produced in the inverter. Comparison and evaluation of various transformerless topologies on the basis of efficiency, total harmonic distortion, semiconductor losses etc for photovoltaic applications were performed using MATLAB Simulink Software.

Index Terms—
comparison, efficiency, inverter, photovoltaic, transformerless

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ECG Monitoring System Using Arduino with Sound and Display

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P.Sugan, P.S.R Engineering college
S.Sundar, P.S.R Engineering college

Abstract:--

      Heart is the most wanted part of human being to live in a world, at the same time the heart rate analysis is increased in medical field and the heart analysis is important parameter of human health. The various heart rate analysis method is available in medical field like ECG and pulse sensing system this pulse analysis is depends on the blood force of heart artery. This artery is closed to the skin in that reason the pulse is identified easily. The proposed system analysis the pulse rate in the way of fingertip using Arduino controller, and it's based on photo phelthysmo graphy principle. This method to analysis the blood pressure difference and identified the variations of the value of blood pressure and send to the controller. The function of heart beat is occur the whole body blood is pumping, so it depends upon the fingertip blood artery is also change. This type of changes is identified with help of the heart beat sensor is placed in the finger to measure the value, and the signal is send to the controller via serial communication system it is help to monitoring the heart beat range. The photo diode and infra-red led is placed in the sensor to detect the blood volume, the infrared diode is transmit the infrared light to the fingertip, this light passing over the blood inside arteries of finger. The photo diode is analysis the light signal and reflected back to the device, so the difference between the light signal the value is send to the controller. It is continuously processed in the every circulation of blood in the fingertip region, and send the variation of changes in the light signal to the controller via serial communication. The reflected light is converted into the pulse range to easily identify the heart beat range.

IoT Based on Energy Managemnt System Using Pic Microcontroller

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Abstract:--

     In Electrical Energy Management to updating of the consumer needs automation in the form an Energy Management System (EMS).EMS plays a decisive interface between the Demand Side Management (DSM) techniques like Demand Response Programs (DRP) and the physical action of performing energy management. Its one technique of an IOT Based on Energy Management System using Pic microcontroller. In this system used for power execeeding in demand mode when the load disconnected from source. This system comprises of a GSM module which work as the receiver for device. This sends commands to the microcontroller which executes according to the received and sends to the SMS for Android mobile. By using this system, thereby which low power energy consumption and improve the power factor. This prototype can be used consumer in House hold applications, small scale industries, and corporate offices.

Index terms

     EMS(Energy management system), EMS(Energy Monitoring System),PEMS (Predicting the Energy Management System), ECS (Energy Controlling System), and LECS (Low Energy Consumption System).

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Fault Current Limiter for the Improved Performance of Flexible Grid

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Sharmila Devi.G.R, PG Scholar,Sethu Institute of Technology
V.Vaishnavi, Assistant Professor,Sethu Institute of Technology

Abstract:--

For engineering application of the flexible grid, several technical problems still needed to be researched, one of which is the fault current handling. In a grid circuit the fault current propagates extremely fast with the help of FCL. Conventionally circuit breakers are used to identify the fault and isolate the network at which the fault occurs. Fault current limiter can avoid the negative influence of the reactor or the circuit breaker on the system transient response speed and operation stability. Also here the fault current can be cleared much faster and the requirement on the circuit breakers can be reduced significantly. Therefore a fault current limiter is used to overcome this issue. The experimental tests and simulation case studies are carried out to verify the working principle and superiorities of the proposed FCL.

Keywords:

BSFC-NSFCL, CSO,FCL,seeking mode, tracking mode.

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Analysis of Speed control of BLDC motor using PI and Fuzzy controller

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Prof. Swapnil D. Patil, Department of Electrical, ADCET, Ashta, Kolhapur, India.
Prof. Suraj D. Pawar, Department of Electrical, ADCET, Ashta, Kolhapur, India.

Abstract:--

In this paper, we comparing the different method on the performance of BLDC motor is presented. The mathematical model of the BLDC motor develops and examines the performance of BLDC motor. Firstly, a PI controller is used for the speed controller of the given BLDC motor with standard / constant parameter which is used for all controllers. Then utilization of PID controller as well as fuzzy logic based controller is developed. Throughout all simulation we studied which one of the method is more superior against another one on the basis of performance analysis of BLDC motor.

Keywords-

Modeling, controller strategies, PI, PID, Fuzzy controller

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Water Leakage and Level Detection System

Manjul De, Final Year Student
Siddhi Sawant, Final Year Student
Gayatri Shinde, Final Year Student
Manjiri Gogate, Head of Department

Abstract:--
      Water is one amongst the basic necessary survival elements which we need in our day-to-day life. So, our primary concern must be to save every drop of water. We must have observed in many of the societies in India due to negligence there is overflow of water from the overhead water tank. In order to solve this issue, we have built a fully controlled water overflow detection system which would help us to save a lot of water which otherwise gets simply wasted. The whole system would be quite easy to use as not much human involvement would be required in the whole process thus would save a lot of time and energy of the user. Every little update about the upper as well as lower tank will be intimated to the user, right from the tanks being empty to the filling up of the overhead tank. Even in the worst-case scenarios like if the water overflows or if there is any leakage in either of the tanks, an update would be given to the user and the motor would be automatically turned off. The user would not only get an update about the current status of the tanks and the motor on the screen but also would receive a notification via his phone.

Index Terms
      Automatic, Notification, Overflow, Water.

DTMF Based Robotic Vehicle

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Abstract:--
Cell phone operated Robot is a Robot whose movement can be controlled by pressing the number of cell phone. The robot can move forward, backward, right or left which depends on the numbers you are pressing. The property of Robot to operate by the cell phone helps you to operate the robot from some distance The Cell Phone Controlled Robot using DTMF (Dual tone-multi frequency) module. It is capable of receiving a set of command (instructions) in the form of DTMF (Dual tone multiple frequency) tones and performs the necessary actions. The robot is controlled by making call to the mobile connected to the robot. The robot performs various operations like moving forward, backward etc. If any key is pressed in the course of the call, by hearing at the other end of the call (i.e., at the mobile connected to the robot). Each key corresponds to a particular frequency which is decoded by the DTMF decoder &processed by logic circuit by giving each key a particular operation like moving forward, backward, right, left etc. The benefit is that we can operate the robot by using any mobile with the working range as large as the coverage area of the service provider. The robot is attached with a camera for surveillance purpose which can also be controlled by the mobile phone by pressing the certain buttons which are assigned for their operation of the camera.

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Automated Home for Elderly People with High End Safety Encryption

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Abstract:--

This work proposes the concept of home automation for elderly people using IoT - cloud platforms like blynk/firebase. The project revolves around securing the devices connected to the cloud so as to protect ourselves and the devices. Inadequate physical security is also an essential barrier to the large- scale activity of IoT systems and broader adoption of IoT applications. So, the physical security must be upgraded using the latest technologies to stay intact. The project is designed in such a way that the appliances connected to the internet can be automated as well as controlled through a virtual remote. To ensure the healthiness of elderly people, a medical dispenser cum reminder is designed to remind elder people about the intake of medicines. The power surge detector is employed to ensure the safety of human beings in case of any high input electrical surge.

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Energy efficient TSI inverter with Simple Boost Control Technique for solar power inversion

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Abstract:--

  In order to utilize the solar energy for industrial, commercial and domestic applications the power conversion schemes plays an important role. The problem exists in conventional power conversion schemes are low efficiency, poor transient response, low voltage gain and more reactive components are being used This paper proposes a single stage power conversion scheme called T-source inverter(TSI) to overcome these drawbacks. T-Source inverter (TSI) with simple boost control scheme is used as interface circuit between PV array and load. The PV array is analyzed under different irradiation and temperature value. The mathematical equations are verified with simulation and hardware. The verification shows, voltage gain of the TSI was comparatively higher than the ZSI. The reactive components in the circuit are less, fast transient response and low output ripple..

Keywords:

  PV cell, T-source inverter, Voltage Source Inverter, simple boost control

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State Estimation and Predictive Controller Design for a Nonlinear Backed Reactive Distillation Column

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R.Ramya, UG student, III EEE, Sethu Institute of Technology.

Abstract:--

      Reactive distillation syndicates reaction and separation in one unit to simplify the process operation Reactive distillation column is one of the key elements in the process of Petroleum and chemical industries, which is having nonlinear, multivariable and non-stationary characteristics. The conventional controller like PID provides fruitless control action for nonlinear process. This paper deals the design of the model predictive controller to control composition of the Reactive distillation column.. Here the Recursive Least square technique is used to estimate the parameters and build the exact model of the Process. The MATLAB policy is used and accomplished of the GPC, Fuzzy and Conventional IMC based PID controller.in the abstract.

Index Terms

      System identification, MPC, IMC , Fuzzy, Reactive distillation column.

Helmet Violation Processing System for Riders safety using Deep Convolution Neural Networks

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Abstract:--
Currently two-wheeler is the most widespread modes of transport. The helmet is the motorcyclist's main protection as bike riders without helmet have less protection and high risk. Consequently, it is extremely appropriate for bike riders to utilize helmet. We focused on the advancement of a procedure using digital image processing and deep convolutional neural networks (CNNs) for finding motorcyclists who are violating helmet laws. It is observed that the use of helmet to motorcyclists made mandatory by the Governments for the security of the public, without helmet bike riding is a punishable offense. Many states in India have adopted manual strategies to catch the violators who do not wear helmet. With the advent of latest technologies, manual strategies may be replaced with automatic detection systems which use deep convolution neural networks based on Artificial Intelligence which could automatically identify the helmet violation. We discussed different methods, approaches, and models in designing the model based on digital image processing. With the advent of latest technologies, manual strategies may be replaced with automatic detection systems which use Machine Learning to adapt itself to highlight the violators so that they can be punished. Using video surveillance of the street, the proposed approach detects, if the bike rider is wearing a helmet or not without manual help. The proposed system uses image processing and Deep Convolutional Neural Networks to identify motorcyclists who are not wearing helmet. The experiments on real videos successfully highlight in the surveillance video with motor cyclists who are wearing and who are not wearing helmets with a low false alarm rate is calculated based on the average and efficiency is calculated of the proposed approach. The system uses Convolution Neural Networks derived from head region image data of motorcycle riders using individual image frames from video data. In this research, we concentrated on deep-learning methods along with artificial neural networks to design an analytical model which identifies the persons and vehicles which are without helmets based on the algorithms. We even concentrated on the Digital Image Processing based for helmet identification. To identify the motorcycle riders who are automatically identified, based on the helmet, and segmented from video data. The Design and implementation of the conventional deep learning based neural network algorithms are discussed and implemented for the result, where the graphical analysis along with the experimental analysis is done using the python, pandas, scikit learn along with the Jupiter notebook. Tests on the tracking system also demonstrate the validity and usefulness of the classification approach using CNN.

Index Terms
Helmet detection system, Vehicle classification, Machine Learning, Deep Convolutional Neural Networks.

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Improved UPQC for Power Quality Using Fuel Cell Battery Combination in a Single Phase System

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Abstract:--

This research work implements the combined working of Unified Power Quality Conditioner (UPQC) in addition of Fuel cell with battery for improving the power quality issues. This combined method presents a UPQC for repay the power-quality problems for a single phase unit that comprises of a DC- DC converter injected by a fuel cell with battery acts as auxiliary power source at the DC link for the peak moments. The objective of UPQC is to improve the supply conditions at the point of installation on distribution segments. A suitable controller is employed for monitoring the UPQC under disturbed load conditions. The simulation of the work is executed with MATLAB.

Keywords:--

Power, quality, Fuel cell, distribution, THD

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