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2022-2023

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Paper Title :

Robust Transfer Learning Based Modelling for Accelerating the Learning of Ai in the Field of NLP

Dr. H. Anandakumar
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Dr. R. Subha
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3rd INTERNATIONAL CONFERENCE ON ENGINEERING AND ADVANCEMENT IN TECHNOLOGY - 2022
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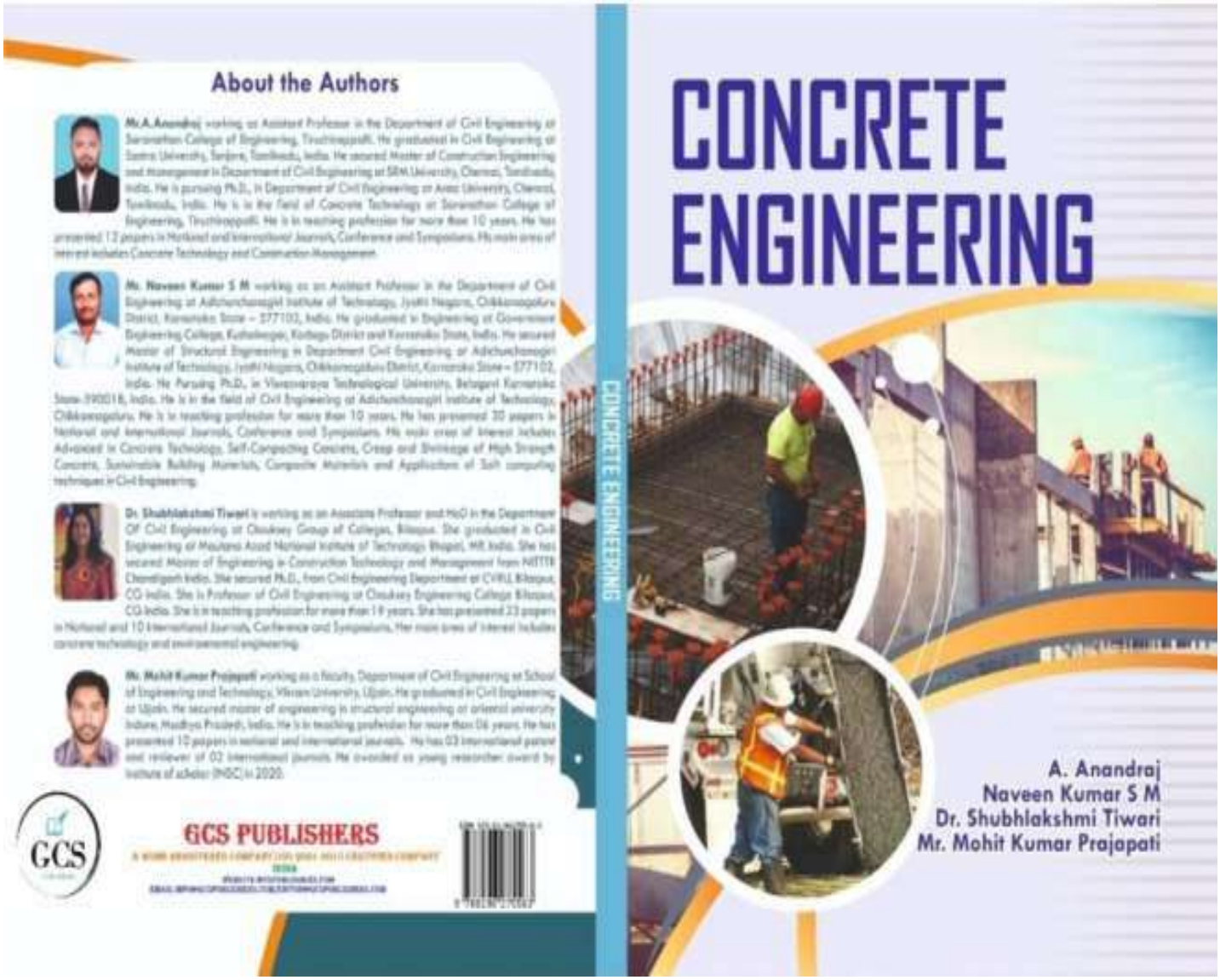
Department of Civil Engineering



Chapter

Data-driven optimization on the workability and strength properties of M-30 grade concrete using MOORA

By A. Anandraj, S. Vijayabaskaran, P.V. Rajesh

Book Computational Intelligence based Optimization of Manufacturing Process for Sustainable Materials

Edition	1st Edition
First Published	2023
Imprint	CRC Press
Pages	20
eBook ISBN	9781003257714

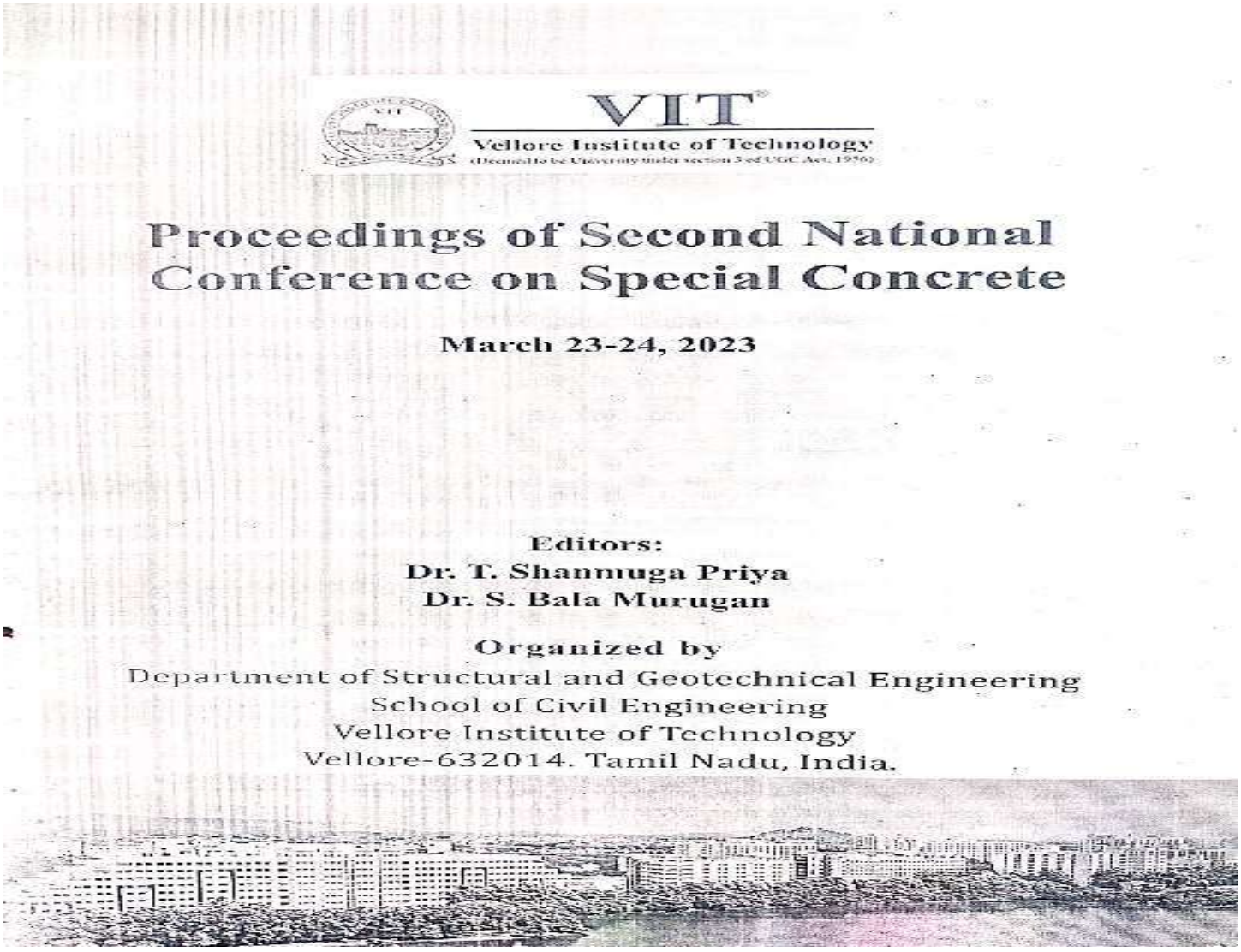
STUDIES ON STRENGTH OF CONCRETE WITH RECYCLED COARSE AGGREGATE AND CALCIUM ADMIXTURES

Belin Jude[2], R. Gowtham[3],S. Mohamed Ameen[4]

(Assistant Professor, Department of Civil Engineering, Saranathan College of Engineering)[1].

(UG Student, Department of Civil Engineering, Saranathan College of Engineering)[2,3,4]

Abstract--This paper describes the strengthening of recycled concrete aggregate concrete using calcium admixtures and its various applications in the construction industry.The properties strengthened recycled aggregate mentioned waste subsides over debris aggregates by 2N of Sodium Hydroxide (NaOH) solution. The RCA are replaced at 10%, 15%, 20%, 25%and 30% to the coarse aggregate with the addition of calcium admixtures. Thus the trial mixes are made with replaced aggregates and curing is done for 7 and 28 days and tested under IS method. Thus the use of calcium admixtures increases the strength of concrete and mechanical properties were compared with the conventional concrete. A design mix of M40 grade concrete was made as per IS codes.



CONTENT

CASTING AND EVALUATING THE INTERLOCKING BRICKS USING ORGANIC WASTE MATERIAL

[1]Mr.C.KESAVA RAJA,M.E.,ASST. PROFESSOR [2]S.JAYASHREE, [3]K.ATCHAYA, [4]V.KAUSICA

ABSTRACT

Bricks are one of the most significant and major material used for all construction purpose. In many countries, Sludge waste especially, textile sludge is a serious problem which risks environment and human health. The textile sludge is used to make the construction bricks that serve as resolve for solid waste management. This paper reviews on the development of interlocking bricks with addition of textile sludge that grossly reduces the utility of clay which is gradually becoming scarce in many parts of the world while improving their strength in comparison in that of conventional bricks. The test parameters include compression strength, water absorption, efflorescence and soundness are studied and tested as per BOI (Bureau of Indian standards). Thus, the utilization of sludge could produce a good quality of bricks making them one of a reliable alternative disposal methods for the sludge which damped in open lands. This study analyze the strength of the bricks when it is mixed with textile sludge.

I. INTRODUCTION

Population scenario comes towards India by means of increasing industries. The fruitful efforts of industries lead to the development of India. As the industries increases, so does the industrial effluents. Recent studies estimate that the amount of industrial waste might amount approximately between 250 and 300 million tons emanating from chemical and agricultural process in India. It is very essential to dispose such wastes in an absolutely safe manner without disturbing the environment and human wellbeing. Build-up of unmanaged wastes particularly in developing countries has endangered their environment. In view of this situation, use of economic and environmental-friendly materials is of a great concern in the construction industry.

The use of recyclable wastes as building materials looks like a viable solution not only to the pollution problem but also benefits the economy in the form of cost-effective buildings.

Several investigators have already attempted to include sludge such as paper processing residues, cigarette butts, fly ash, polystyrene foam, plastic fibre, cotton waste, dried sludge collected from an industrial wastewater treatment plant, rice husk ash, granulated blast furnace slag, rubber, Kraft pulp production residue, limestone dust and wood sawdust, processed waste tea, petroleum effluent treatment plant sludge, welding flux slag and waste paper pulp, Cotton and limestone powder wastes in the production of bricks. In this paper we are investigating the use of textile sludge in the process of interlocking brick manufacture and its strength compared to that of existing conventional bricks. The non-degradable used material was utilized for utility-based product. The efforts have been taken to utilize the powdered textile sludge in

EXPERIMENTAL INVESTIGATION ON IMPACT OF BENTONITE AND WASTE GLASS AGGREGATE OVER WORKABILITY AND STRENGTH PROPERTY OF CONCRETE

M. AMARNATH PRAVEEN[1], F. JEFFREY SAMUEL[2], S. LIJO SOOSAI[3], A. ANANDRAJ[4]

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[4] Assistant Professor, Department of Civil Engineering, Saranathan College of Engineering, Tiruchirappalli, 620001(Tamilnadu), India.

ABSTRACT

As construction in India and other developing countries increases, the consumption of energy and resources is also increasing in an alarming way. Most of the developing nations have reduced the usage of virgin material like aggregates in construction, due to consumption of energy and resources is increasing in an alarming way, so they focused on the environment and safeguarding of natural resources and recycling of wastes materials. Many industries produce lot of waste products which is disposed into landfills. This material can be used in construction industry as alternative to conventional materials. Such practice conserves natural resources and reduces the space required for the landfill disposal of these waste materials. The objective of Present work is to find out the effectiveness of the bentonite and recycled waste glass aggregate based concrete. In this investigation it was proposed that the use bentonite as cement replacement material and recycled waste glass as fine aggregate material partially in concrete. Cement is partially replaced (5%, 10%, 15%) with Bentonite and Natural sand was partially replaced (10%, 15%, 20%) with waste glass aggregate. Compressive strength of cubes at 7days and 28 days of duration and flexural strength at 28 days were studied and compared with conventional concrete. Fineness modulus, specific gravity, moisture, water absorption was also studied. Based on the test results, the ideal percentage of mix which shows maximum compressive strength was identified.

Keywords — Recycled Waste Glass Aggregate, Bentonite, Workability, Compression Strength.

INTRODUCTION

GENERAL

A large number of researches have been directed towards the utilization of such materials which are easy available and cheaper in cost. For the construction industry, the development and use of blended cements and use of recycled material as aggregate substitute is growing rapidly Construction industry need huge amount of construction material and continuous dependence on natural virgin material will lead scarcity of the construction material and increase in cost of material and construction. To overcome such situation

PERFORMANCE ANALYSIS OF CALCIUM ADMIXTURES RECYCLED AGGREGATE CONCRETE

A. BELIN JUDE[1], R. GOWTHAM[2] AND S. SRIVARSAN[2]

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ABSTRACT

This paper describes the strengthening of recycled concrete aggregate concrete using calcium admixtures and its various applications in the construction industry. The properties strengthened recycled aggregate concrete and its comparison with the conventional concrete are also mentioned. Pre- Treatment is done for recycled aggregate to remove the waste subsides over debris aggregates by 2N of Sodium Hydroxide (NaOH) solution. The RCA are replaced at 10%, 15%, 20%, 25% and 30% to the coarse aggregate with the addition of calcium admixtures. Thus, the trial mixes are made with replaced aggregates and curing is done for 7 and 28 days and tested under IS method. Thus, the use of calcium admixtures increases the strength of concrete and mechanical properties were compared with the conventional concrete. A design mix of M40 grade concrete was made as per IS codes.

Keywords: Recycled Coarse Aggregate, Calcium admixtures, Sodium Hydroxide, Compressive Strength, and Split Tensile Strength.

INTRODUCTION

As we know that concrete was widely used in the construction industry for all civil engineering construction works. In that aggregates takes about 80% of the work. So inorder to reduce cost of construction materials it is good to use the recycled waste materials to reduce cost upto 25% and CO_2 emission

Construction and demolition disposal has become the major problems in India. The management of construction and demolition waste is a major concern due to increased quantity of demolition rubble, continuing cost of disposal rates and environmental degradation. India should think seriously about reusing demolished rubble and concrete for production of recycled construction material. Often these materials are used in as road construction, backfill for retaining walls, lower grade production, drainage, brick work and

Department of Computer Science and Business Systems Engineering

Techniques and Applications of Optimal Cluster Head Selection With Trusted Multipath Routing and MANET Intrusion Detection

Venkatasubramanian Srinivasan, P. L. Rajarajeswari, T. Sathis Kumar

Source Title: Handbook of Research on Advanced Practical Approaches to Deepfake Detection and Applications (/book/handbook-research-advanced-practical-approaches/299208)

Pages: 21
DOI: 10.4018/978-1-6684-6060-3.ch013

Abstract

A MANET (mobile ad hoc network) is a self-constituted wireless setup that operates independently of existing infrastructure and centralized control. In various daily uses, such as automotive, military, and other field networks, it is possible to find MANET on wireless systems. In contrast with MANET, a fixed or cable data and computer connectivity system are required for many networks. The WiFi, satellite networking, and smartphone network include fixed infrastructure technology. Moreover, MANET is a dynamic energy and security vulnerable system. The fundamental problem of energy efficiency optimization has been addressed effectively by Routing Protocols (R.P.) among the most extant techniques. This work, therefore, offers an efficient multi-track routing in a MANET-based optimization procedure. The intrusion detection and optimal cluster head (C.H.) selection approach, namely firefly algorithm (FFA) based fuzzy clustering and Random Forest (R.F.), is used to address the energy and security crises in the MANET effectively. The multipath routing is then carried out using secure nodes based on the R.P., Bird swarm with Mayfly algorithm (BS-MFA). The best routes are chosen founded on fitness features such as trust, energy connectivity, and throughput. The approaches are compared using existing techniques and various performance metrics such as energy consumption, Delay, and detection rate.

Chapter Preview

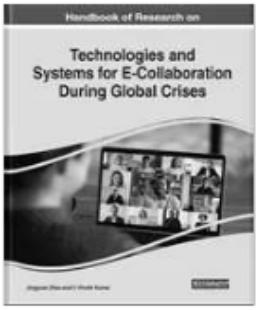
Top

Introduction

A MANET is a network of mobile nodes that do not have centralized administration. MANET topology can be dynamic. Furthermore, each mobile node has partial resources such as a battery, computing power, and RAM (Huiyao. A et al., 2004; Goyal, P et al., 2014). Mobile nodes in MANETs interact with one another n a multi-hop way.

This indicates that a mobile node routes a packet to a target via intermediary nodes. As a result, each node's availability is equally essential. Otherwise, the network's complete performance may suffer. An efficient R.P. is required for MANET to fulfill these unique features and design restrictions (Hinds. A et al., 2013). Designing an effective R.P. for MANETs is a complex challenge that has been the subject of ongoing study. There are many proposed R.P., which could be split into two categories: proactive and reactive. Mobile Nodes often update their router databases with proactive routing techniques such as destination sequence distance vectors (DSDV) (Uddin, M et al., 2012). A proactive routing system creates a high number of control mails in the network as a result of frequent information exchanges. As a result, proactive R.P. is not deemed appropriate for MANET (Venkatesan T.P. et al., 2014).

Reactive R.P. methods such as ad hoc on-demand distance vector routing (AODV) and dynamic source routing (DSR) have been suggested for MANET to address the constraints of proactive R.P. (Karthikeyan B et al., 2014). A route is identified in a reactive routing system only when needed. The reactive routing protocol is made up of two major tools: (a) route discovery and (b) route keep. The route discovery method is used by a source node to find a path to an endpoint. A source node detects any topological change in the network using the route preservation method (Patel, D.N et al., 2014). The route discovery method employs a global search technique in which a source node employs a flooding mechanism to identify all possible pathways to a destination. Once all routes have been found, a source node selects the shortest way.



Efficient Data Verification Systems for Privacy Networks

Vinoth kumar V., Muthukumaran V., Rajalakshmi V., Ajanthaa Lakkshmanan, Venkatasubramanian S., Mohan E.

Source Title: Handbook of Research on Technologies and Systems for E-Collaboration During Global Crises (/book/handbook-research-technologies-systems-collaboration/280159)

Pages: 15
DOI: 10.4018/978-1-7998-9640-1.ch011

Abstract

To overcome the problem with aggregated raw data, privacy preservation is the best answer. For privacy measures and other concerns, it delivers full throttle security for data. The essential reason for data security is that single transactions will not be permitted and recently utilised customers to communicate information securely. This study presents and compares various verification strategies based on the crypt arithmetic methodology for various set-valued data. It primarily checks for privacy risks in the sharing of details and information between the publisher, admin, and customers. There are various ways of preventing privacy violations, including the PPCDP technique for strong data that is non-trivial to implement. The authors used the Java Tomcat server, HTML, and JavaScript to develop a web application. We can automatically stop the person who is attempting to inject the vulnerability code using the technique, and all of this information is kept in the database.

Chapter Preview

Top

Introduction

The method of privacy preserving public key encryption standard uses cryptographic method to provide security for multiple users .For example Facebook is the biggest trusted web application in which it incubates billions of users send it doesn't provide security to all users .In spite of that we have created a small web application that will provide a full security for the customers in additional to encryption standard .It include all concepts of providing security like storing the data in cloud exchanging the bank details using random key generation for single user etc. Security ensuring utility check framework reliant on cryptographic methodology for differentially private arrangement planned for set the data. It measures on the encoded rough publishers which ensure break is engaged to covertly check the rightness of the mixed frequencies gave by the distributer, which perceives users. It provides the strengthened framework to another differentially private conveying plan proposed for data security (Muthukumaran V et al., 2018). Our speculative and preliminary evaluations display the security and capability of the proposed framework.

We propose the triple DES and RSA security algorithms to provide security based on the users request. In which user can buy the products or books securely based upon the user request to complete the transaction and payment gateway to send the book with key to view completely to the user (Muthukumaran V et al., 2021). We have created a java-based web application using tomcat SQL server, JavaScript html and CSS, where the user can be able to search for the websites, admin can be able to block the particular website and the owner can be able to host the website and all the details were stored in the database (Kumar, V et al., 2021; Nagarajan, S. M et al., 2022). As distributed computing becomes more widespread, more sensitive data is being gathered and shared in the cloud, posing new challenges for re-appropriated information security and protection. Property-based encryption (ABE) is a promising cryptographic approach that has recently been widely used to implement a fine-grained access control system. In any case, ABE is being chastised for its high plan overhead as the computing cost grows as the entrance equation becomes more complex. Since cell phones have compelled figuring assets, this disadvantage is becoming increasingly apparent.

Smart Energy and Electric Power Sy
Current Trends and New Intelligent Perspectives
2023, Pages 65-78

Chapter 5 - A survey on AI- and ML-base analysis of power using IoT-based SCADA

Lakshmi Kanthan Narayanan [1], Priyanga Subbiah [4], R. Rengaraj Alias Muralidharan [1], Ar Venkatasubramanian Srinivasan [2], Aravind Prasad Baskaran [2], Punitha Victor [2], Hema Ra

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Available online 23 September 2022, Version of Record 23 September 2022.

https://doi.org/10.1016/B978-0-323-91664-6.00010-3
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Abstract

Without the discovery of electrical energy, life would not be what it is today. It ha part of human life, starting from domestic use to industrial activities. The centrali sufficient power. A deadly consequence will be faced if supply of electricity excee determine the demand with respect to change in life style, industrialization etc. T demand, various statistical methods were adopted, which led to unsatisfied outcc equipment-wise electricity consumption audit as well, as there is no analysis of d chapter, we discuss the classification between the traditional forecast analysis mc based models. This study will help to determine effective and efficient forecast m it shares the in-depth view on the integration of artificial intelligence (AI) in mak by ranking the electrical equipments according to their period of usage and non-u performed to educate the customer in shifting the priority of usage to reduce the Predicting and locating the various issues of power distribution like outage, black converted Smart Grid with the advent of AI and Internet of Things (IoT) is highly f and machine learning architecture has been proposed to make the distribution as smart metering policy has embedded as well, to make the consumption-based pa of peak and non-peak hours. Also, this system has the capability to detect line cor distribution node, which reduces the dependency of human, and thereby it leads

Previous

Keywords

2023 2nd International Conference on Smart Technologies and Systems for Next Generation Computing (ICSTSN) | 979-8-3503-4800-2/23/$31.00 ©2023 IEEE | DOI: 10.1109/ICSTSN57873.2023.10151627

Precise Prediction of Cardiovascular Diseases Using Machine Learning

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***Abstract*—Cardiovascular disease is among the conditions that pose the greatest risk to life. Nearly 17 million people die as a result of its high mortality rate worldwide. To treat the illness quickly and reduce mortality, early diagnosis is helpful. The occurrence and absenteeism of the ailment can be hush-hush consuming a variability of ML techniques. The UCI dataset is to categorize heart disease using the techniques of LR, NB,SVM and Convolution Neural Networks(CNN). To progress the model's recital, the dataset was cleaned, missing value searches were carried out, and feature selection was done through correlation by the goal worth for all of the features. The traits with the highest favourable associations were picked. The dataset is then alienated into train and trial sets, and classification is completed experimenting with a 70:30:80 ratio. The most accurate dividing ratio is 80:20. The best outcome will be recorded and used in the suggested model, which will compare Logistic regression, Naive Bayes, and Support vector machines with and without feature selection. Among all the models CNN shows the best result.**

***Keywords*—ML, SVM, LR, NB, CNN**

I. INTRODUCTION

The biggest issue facing the medical sector today is to equip health infrastructure with higher-level services that would enable early disease detection and prompt treatment, hence enhancing patient outcomes and quality of life. Worldwide, heart illness is responsible for about 31% of deaths. In undeveloped and underdeveloped countries, there is a dearth of the infrastructure, technologies, and professionals required to detect the disease early, dodge hitches, and diminish transience. The advancement of evidence and telecommunications technology has promoted both rich and poor patients by only if them with real-time evidence at a lower cost for diagnosis and health monitoring. As a result, there are now significantly more patient health records.

The use of the massive medical data presents the medical business with great challenges. Machines quickly turn the enormous volume of data to provide accurate and useful information. Machine learning is a crucial arena as a result. The most common features, according to several researchers, are the 14 features. Given the importance of feature selection in the study, the model's prediction accuracy may rise or decrease depending on the feature selection.

The potential of machine learning to more accurately forecast cardiac disease will help in the early diagnosis and treatment of patients and will enable a large number of people to identify their ailments more quickly. As a result, millions of lives are spared.

II. LITERATURE SURVEY

Nishadi et.al suggested that the dataset is gathered, and the data are then pre-processed. 14 IVS and the expected value make up the data set. Given that the goal variable is categorical, binary logistic regression, one of the classification techniques, was applied, feature selection is not used.

Tania et.al said that the procedure begins with data retrieval, is followed by data splitting, split-data prediction using the logistic regression algorithm, and data validation at the end. Performance analysis is not done in the stated work.

Sonam said that the dataset including patient information is gathered. The method of selecting attributes chooses the relevant attributes for heart disease prediction. The available data resources are located, then further chosen, cleansed, and transformed into the required form. To accurately forecast cardiac disease, various classification approaches will be used on pre-processed data. The accuracy of several classifiers is compared by accuracy measure.

Mohan et.al described a cutting-edge approach that aims to identify relevant traits by utilizing ML methodologies , thereby increasing the accuracy of cardiovascular disease prediction. Kavitha et.al said that the machine learning model's innovative technique is created. Three ml models are used in the implementation.

III. DATASET

There are 303 records of patient details with 14 attributes describing them. The UCI dataset is taken for the computation. Finally, the class either has heart-disease or is in a good condition. The data is a record and the complete dataset is a CSV file.

TABLE I. DATASET DESCRIPTION

Data	Description
age	Age of the patient
sex	If the patient is male,

2023 | OriginalPaper | Chapter

A Novel Real-Time 3D Object Detection Network in Autonomous Driving Using Reformed RS-ResNet network

Authors : Sai Prabanjan Kumar, C. Mala, V. Punitha

Published in: 4th EAI International Conference on Big Data Innovation for Sustainable Cognitive Computing

Publisher: Springer International Publishing

Abstract

Extending the RS-ResNets architecture for 3D bounding box detection from 2D images to 3D point clouds that have varying degrees of visibility, a regression module with a Euler Region Proposal Network that performs complex angle regression is added to predict the direction of bounding boxes around detected objects. Geometrical overlap of predicted labels and ground truth is identified for every set of Lidar point cloud and the corresponding image data and compared with the state-of-the-art architectures. With the ability to scale to different architectures of GPU/TPU, the RS-ResNet architecture achieves faster frame rates of reaching threshold value of 70 ms/frame and APH/L2 = 66, on a NVIDIA Tesla V100 GPU and capability to scale to new and more powerful GPU/TPU architectures. The predictions are made to two

Image Processing Techniques in the Detection of Hemorrhages in Retinal Images (STARE & DRIVE)

M. Padmapriya ; S. Pasupathy ; V. Punitha All Authors

Abstract: There are many different types of diabetic eye problems, but the most common one is called diabetic retinopathy (DR). It is a common cause of blindness around the world. ... **View more**

Metadata

Abstract:

There are many different types of diabetic eye problems, but the most common one is called diabetic retinopathy (DR). It is a common cause of blindness around the world. In 2034, the International Diabetes Federation (IDF) says that there will be 552 million people with diabetes, which is a lot. In computer science, new things like advanced image processing, artificial intelligence (AI), and deep learning (DL) have made it easier to find DR before it gets worse. This means that the chances of a person getting better and not losing their eyesight in the future will go up. In this work, the suggested method includes basic preprocessing, the segmentation of hemorrhages with the help of morphological operations, and the connected components labeling. The STARE (Structured Analysis of the Retina) and DRIVE (Digital Retinal Images for Vessel Extraction) datasets were used in this study. To demonstrate the vitality of the chosen methodology, performance measures such as accuracy, specificity, and sensitivity were determined. The accuracy, specificity, and sensitivity of the results of the proposed method are shown to be the highest for images from the STARE(DRIVE) dataset, with values of 85(88) percent, 82(94) percent, and 89(83) percent for the images given.

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has presented (Online / ~~Offline~~) a paper entitled Intrusion Detection on Streamed Log Data using Convolutional Neural Network

" INTERNATIONAL RESEARCH CONFERENCE ON ENGINEERING MANAGEMENT SCIENCE AND TECHNOLOGY (IRCEMST'23) " held on 12.05.2023 organized by Department of Computer Science and Engineering, J.J. College of Engineering and Technology, Trichy-09, Tamilnadu, India.

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27th August 2022 | Chennai, India

This is to certify that DR.R.SENTHAMILSELVI

of Saranathan College Of Engineering And Technology, Trichy has done his/her excellence in presenting the research paper titled "Performing Image Related Data Hiding Using Iot And Des Algorithm"

on 27th August 2022 at Chennai, India.

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Design and Analysis of High gain Antenna array for Space Applications

in the 2nd National Conference on "Recent Advances in Communicative Electronics (NCRACE 2023)" organized by the Department of Electronics and Communication Engineering, SRM TRP Engineering College, Tiruchirappalli, during March 09-10, 2023.

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BLUEMETRIC SOLUTIONS

FACE MASK DETECTION USING YOLOALGORITHM

Dr.VennilaC,AkshayaGodinaD,BanuPriyaB,CharudharshanaM

Department of Electronics and Communication Engineering, Saranathan college of Engineering, Trichy-620012, Tamilnadu, India

ABSTRACT

The COVID 19 pandemic is producing a worldwide health crisis. Wearing a face mask in public places and wherever else is perhaps the most effective safety tool. The goal of this study is to look at and evaluate machine learning capabilities for detecting and recognising face masks worn by

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with the paper entitle

'' Design of Filtering Antenna for UWB Applications ''

Uzm. Yasemin AĞAOĞLU
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K. Malaisamy

from SARANATHAN COLLEGE OFENGINEERIN has presented a paper titled *"DESIGN AND DEVELOPMENT OF SMART PULSE OXIMETER FOR MEDICAL APPLICATIONS"* in International Conference on Advancement in Electronic Systems and Communication Technologies (ICAESCT 2022) on 4th & 5th November 2022, Organized by Department of Electronics and Communication Engineering, Anil Neerukonda Institute of Technology and Sciences.

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Array Antenna Design and Development for X-Band Applications

K. Malaisamy, Mohd. Wasim, P. Sivagamasundhari, G. Sivakannu, and V. Dinesh

Abstract This paper proposes an antenna array particularly intended for ocean radar systems. The array is made up of 16 identical elements. This antenna resonates at 10.10 GHz, and the bandwidth of antenna is 90 MHz. The elements are organized along the extended arms of a four-element one-dimensional arrangement and are feed in the middle by a number of perfect finishing touch microstrip lines. To depart from the established route, each patch element was cut with a slit to allow for horizontal polarization.

Keywords Microstrip antenna · X-band · Advanced Design System (ADS) · Array antenna · Radar

1 Introduction

An antenna is a radiating device that sends electromagnetic energy into space from a transmitting antenna. The antenna is a critical component in wireless communication systems. An antenna that is well designed can reduce system requirements while

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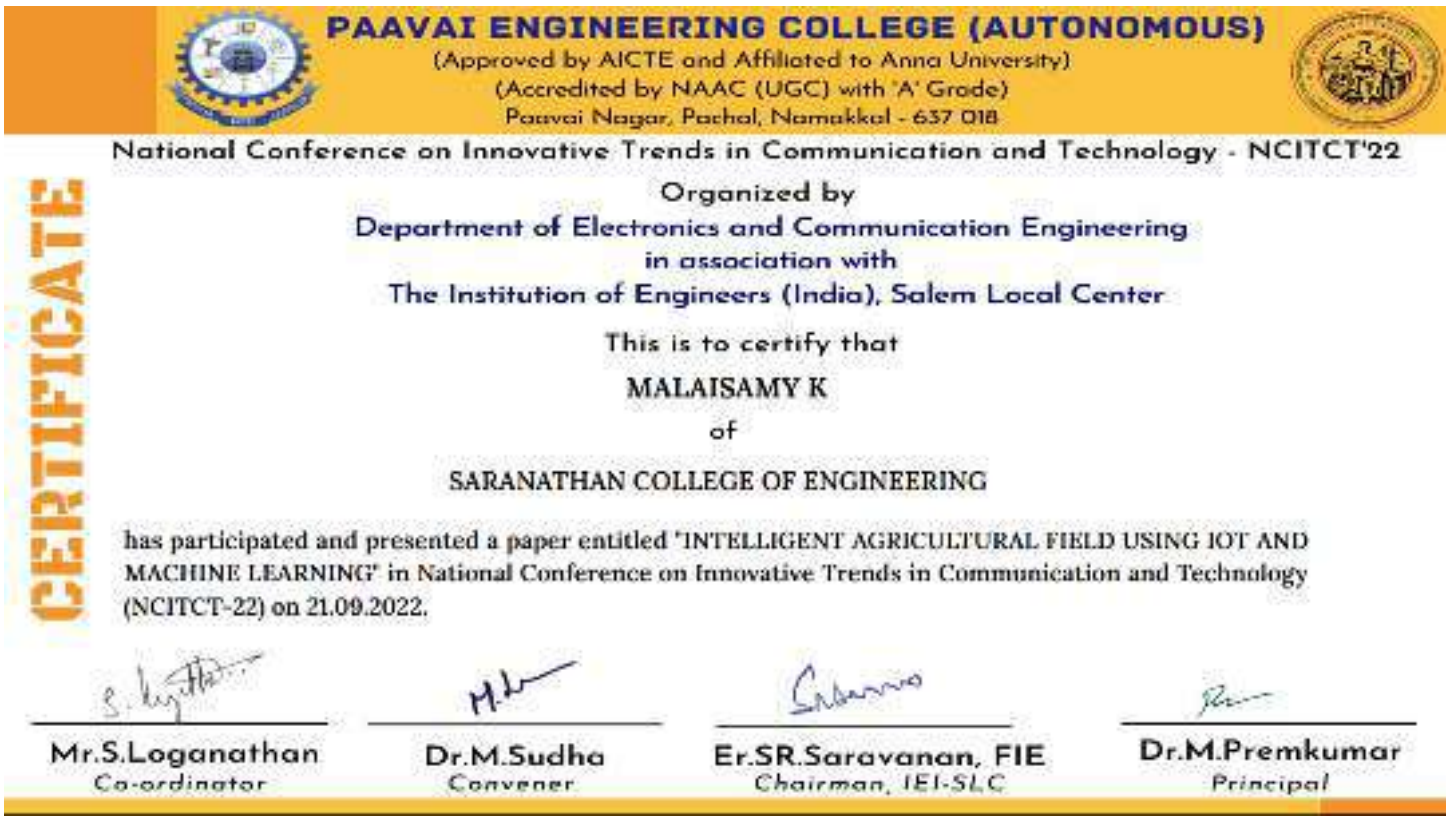
D. Singh et al. (eds.), *Computer Aided Constellation Management and Communication Satellites*, Lecture Notes in Electrical Engineering 987,
https://doi.org/10.1007/978-981-19-8555-3_9



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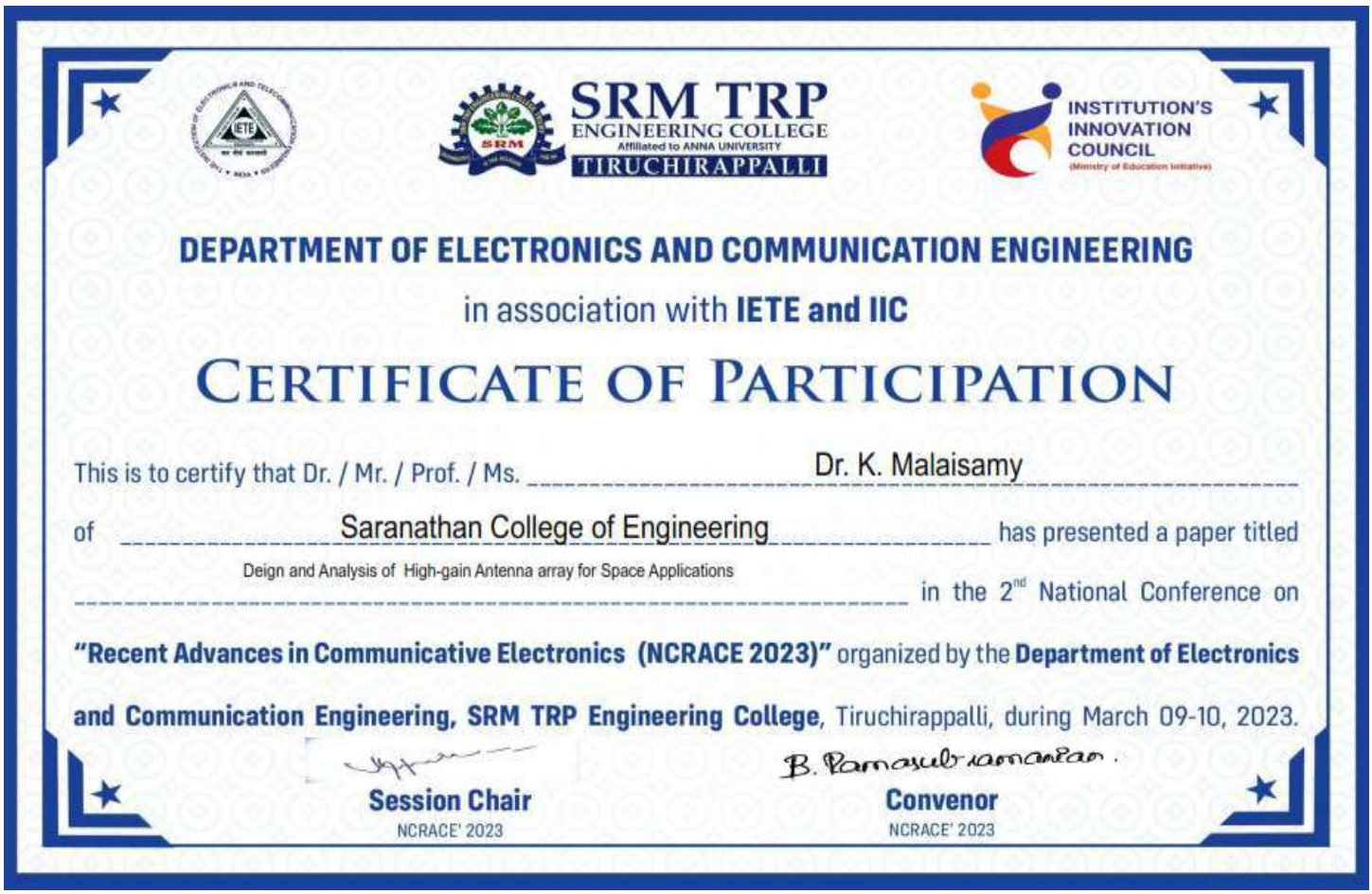

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Prediction of Range Error and Correction in Single Frequency Navigational Receivers Based on GPS Satellite Data During Solar Flare Days

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2022 International Conference on Digital Transformation and Intelligence (ICDI) | 979-8-3503-9700-0/22/$31.00 ©2022 IEEE | DOI: 10.1109/ICDI57181.2022.10007256

Abstract*—The geomagnetic storms and solar flares are a threat to the Global Navigation Satellite Systems, especially GPS. Investigation of prediction ability of Ordinary Kriging built Meta-Model (OKMM) and the consequence on the positional accuracy of GPS throughout the Solar Fare (SF) X1.3 and X1, which occurred on 28-10-2021and 30-03-2022 was done in this work. GPS TEC data is obtained from the HYDE (Hyderabad) IGS station. GPS TEC data is predicted for ten days, including five days before and five days after the SF using four primary input parameters namely Kp, SSN, Ap and F10.7. The performance of the OKMM is assessed using statistical parameters such as RMSE, NRMSE and Correlation Coefficient (CC). The results show that the developed model has average performance metrics of 7.12, 0.1613, and 0.9852 TECU in terms of RMSE, NRMSE & CC during the X 1.3 SF and the model has average performance metrics of 5.82, 0.2339 and 0.9559 TECU in terms of RMSE, NRMSE & CC during the X 1 SF. The range error during the SF times ranges from 3-10 m. In this range, the OKMM prediction is estimated to have a very high percentile of accuracy in predicting this error. Thus, justifying that the prediction evaluated by this model will be a great aid for ensuring seamless working of satellite and navigation applications

Keywords: OKMM, TEC data, Solar Flare, Positional Accuracy

I. INTRODUCTION

The ionospheric variations due to fluctuations in the space weather is a risk to the services provided by the Global Navigation Satellite Systems (GNSS). The GPS constellation satellite signal travel to the ground receiver via atmospheric layers. So, the signal becomes weak at the user receiver due to the intentional and unintentional error sources and this will lead to range error in the GNSS [1,2]. The GPS signal degradation is based on TEC, satellite transmission signal frequency, elevation, azimuth angle, etc. [3,4]. According to the review of literature, it is understood that the TEC is an vital factor that disturbs the satellite signal. The TEC depends on several parameters like solar flares, geomagnetic storms, location, and seasons [5,6]. Several authors analysed the SF effects on Global Navigation Satellite Systems [7-9]. The authors developed a SHMIT model for providing TEC map during low and high solar activities and found that the model is useful to measure the TEC variations as per the space weather changes [10]. SF effect on D region of the ionosphere and its corresponding effect on satellite signal is analysed by the authors [11]. The solar flare effects on ionosphere during the month of September 2017 was analyzed based on the data taken from 5 IGS stations situated over Taiwan and Philippines. The authors found that, the TEC increases upto 15 TECU during the solar flare [12]. The variations of TEC and VLF signals due

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Deign and Analysis of High-gain Antenna array for Space Applications

in the 2nd National Conference on **"Recent Advances in Communicative Electronics (NCRACE 2023)"** organized by the **Department of Electronics and Communication Engineering, SRM TRP Engineering College**, Tiruchirappalli, during March 09-10, 2023.

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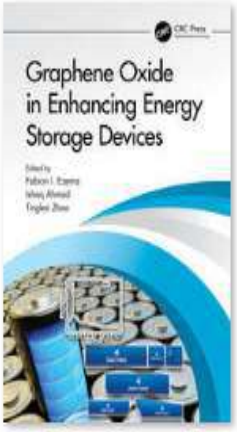

Book

Graphene Oxide in Enhancing Energy Storage Devices

Edited By Fabian Ifeanyichukwu Ezema, Ishaq Ahmad, Tingkai Zhao

Edition	1st Edition
First Published	2022
eBook Published	14 December 2022
Pub. Location	Boca Raton
Imprint	CRC Press
DOI	https://doi.org/10.1201/9781003215196
Pages	302
eBook ISBN	9781003215196
Subjects	Engineering & Technology, Physical Sciences

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3 Graphene – An Energy Storage Material

Venkatesh Koushick
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Murugesan Anusuya
Indra Ganesan Group of Institutions

Fabian I. Ezema
University of Nigeria

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3.1 INTRODUCTION

Graphene is now being studied extensively across the world because of its unusual qualities such as zero bandgap, extraordinary electron mobility at ambient temperature, elevated thermal conductivity and rigidity, enormous tensile region, impermeability to gases, and so on [1]. At normal temperature, graphene charge carriers have zero mobility, are massless, and travel a small number of micrometers while retaining their structure. Graphene-based materials have recently acquired prominence in energy storage systems, electronics, chemical sensors, optoelectronics, nanocomposites

DOI: 10.1201/9781003178... -3

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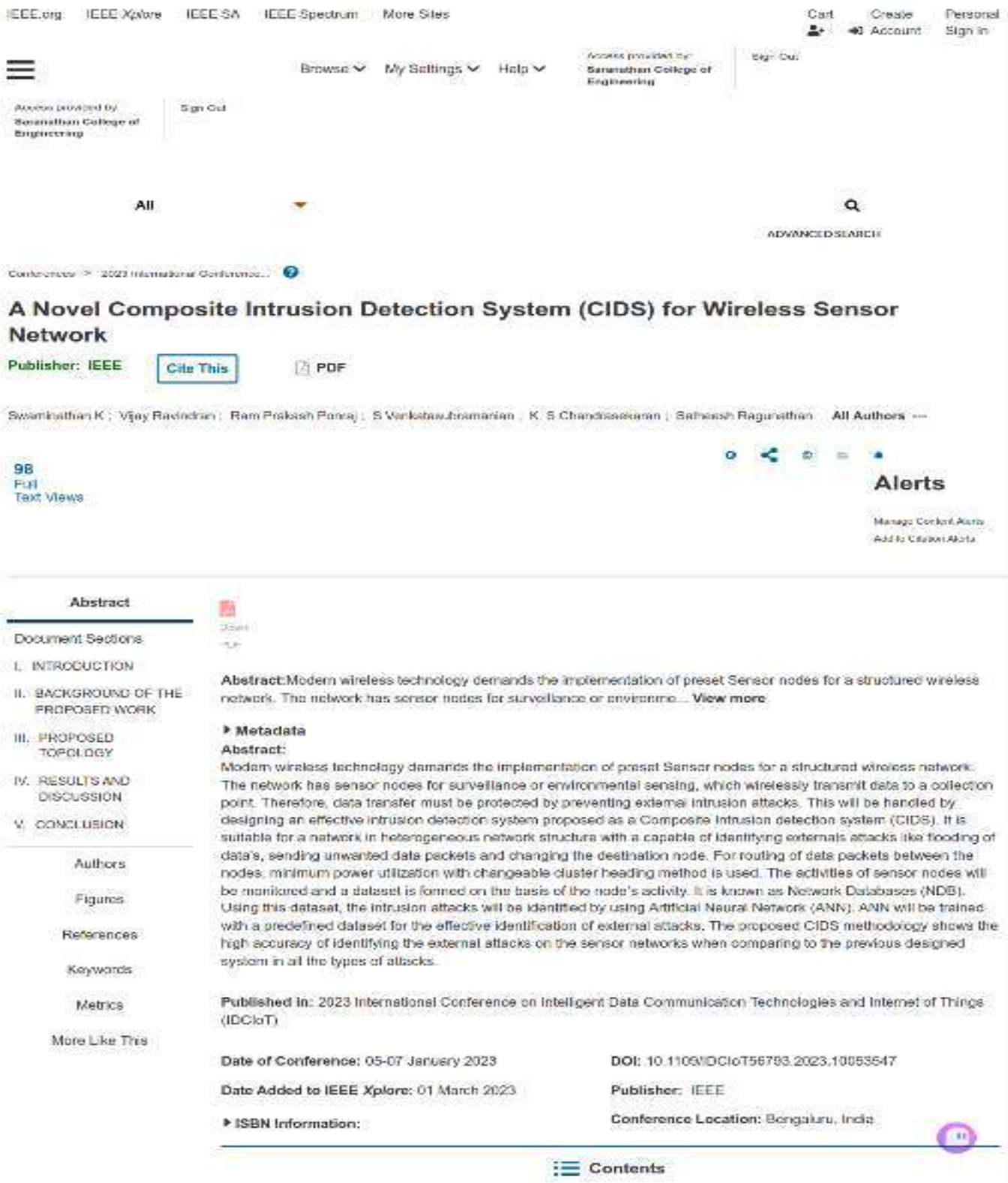

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A Novel Composite Intrusion Detection System (CIDS) for Wireless Sensor Network

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Swaminathan K ; Vijay Ravindran ; Ram Prakash Poruj ; S Venkatasubramanian ; K. S Chandrasekaran ; Satheesh Ragunathan All Authors

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Abstract

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II. BACKGROUND OF THE PROPOSED WORK

III. PROPOSED TOPOLOGY

IV. RESULTS AND DISCUSSION

V. CONCLUSION

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Abstract:

Modern wireless technology demands the implementation of preset Sensor nodes for a structured wireless network. The network has sensor nodes for surveillance or environmental sensing, which wirelessly transmit data to a collection point. Therefore, data transfer must be protected by preventing external intrusion attacks. This will be handled by designing an effective intrusion detection system proposed as a Composite Intrusion detection system (CIDS). It is suitable for a network in heterogeneous network structure with a capable of identifying externals attacks like flooding of data's, sending unwanted data packets and changing the destination node. For routing of data packets between the nodes, minimum power utilization with changeable cluster heading method is used. The activities of sensor nodes will be monitored and a dataset is formed on the basis of the node's activity. It is known as Network Databases (NDB). Using this dataset, the intrusion attacks will be identified by using Artificial Neural Network (ANN). ANN will be trained with a predefined dataset for the effective identification of external attacks. The proposed CIDS methodology shows the high accuracy of identifying the external attacks on the sensor networks when comparing to the previous designed system in all the types of attacks.

Published in: 2023 International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT)

Date of Conference: 05-07 January 2023

DOI: 10.1109/IDCIoT56793.2023.10053547

Date Added to IEEE Xplore: 01 March 2023

Publisher: IEEE

▸ **ISBN Information:**

Conference Location: Bengaluru, India

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Optimization of Power Generation Costs Using Support Vector Machines

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Abstract—Effective load dispatch is considered to be an optimization effort taken on routine basis essential for the grid's functionality. In order to meet demand for electricity while minimizing operational costs and maintaining system equality and difference constraints, economic load dispatch (ELD), a method used in electricity generation, schedules dedicated power system yields. The generation schedule must be capable of directly accommodating the variable and erratic load demand at various buses without noticeably raising operational expenses. This paper tries to address very difficult ELD problems with transmission loss and varied cost curves using a new regression approach called support vector machine (SVM). This method's effectiveness has been proven on Indian 181 and IEEE 118 bus systems. The results of this proposed method show that this SVM algorithm is capable of finding significantly more cost-effective load dispatch solutions than particle swarm optimization (PSO), hybrid particle swarm optimization (HPSO), multiagent system (MAS), multiagent particle swarm optimization (MAPSO), hybrid multi agent based particle swarm optimization (HMAPSO) and extreme learning machine (ELM). Furthermore, when compared to other approaches, the calculation time is comparatively short.

Keywords—Power system optimization, Support vector machines, Economic load dispatch, IEEE bus system, Transmission loss, Regression.

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Proceedings of the International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT 2023)
IEEE Xplore Part Number: CFP23CV1-ART; ISBN: 978-1-6654-7451-1

2023 International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT) | 978-1-6654-7451-1/23/$31.00 ©2023 IEEE | DOI: 10.1109/IDCIoT56793.2023.10053547

A Novel Composite Intrusion Detection System (CIDS) for Wireless Sensor Network

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***Abstract*— Modern wireless technology demands the implementation of preset Sensor nodes for a structured wireless network. The network has sensor nodes for surveillance or environmental sensing, which wirelessly transmit data to a collection point. Therefore, data transfer must be protected by preventing external intrusion attacks. This will be handled by designing an effective intrusion detection system proposed as a Composite Intrusion detection system (CIDS). It is suitable for a network in heterogeneous network structure with a capable of identifying externals attacks like flooding of data's, sending unwanted data packets and changing the destination node. For routing of data packets between the nodes, minimum power utilization with changeable cluster heading method is used. The activities of sensor nodes will be monitored and a dataset is formed on the basis of the node's activity. It is known as Network Databases (NDB). Using this dataset, the intrusion attacks will be identified by using Artificial Neural Network (ANN). ANN will be trained with a predefined dataset for the effective identification of external attacks. The proposed CIDS methodology shows the high accuracy of identifying the external attacks on the sensor networks when comparing to the previous designed system in all the types of attacks.**

Keywords— ***Wireless Sensor Networks, External Threats, Intrusion, adaptive networks.***

I. INTRODUCTION

Wireless based sensors networks is a revolutionary invention in the modern era used for all types of application like surveillance in military application, collection of health-related data in medical field [1]. It has set of distribution sensor nodes in an application area for sensing the data with a predefined geographic location. The location of nodes will be decided on the basis of XY co-ordinates. The sensor nodes have to collect the sensing data from their corresponding location and passed to a cluster head. The head nodes will make effective data aggregation method and passed the concern data to base station [2]. The data transmission will be done by using any of the routing protocols and it should be secured from the external threat. Also, the power backup of the sensor is a tradeoff between the data transmission and securing the data from the threats [4]. The data packets routing is depicted in figure 1.

As the sensor nodes are in open area and the data transmission will be carried over in an open platform with limited network resources, the chances on injection of threats will be high. In spite the position of nodes is a heterogeneous network, chances on threats will be high [5].

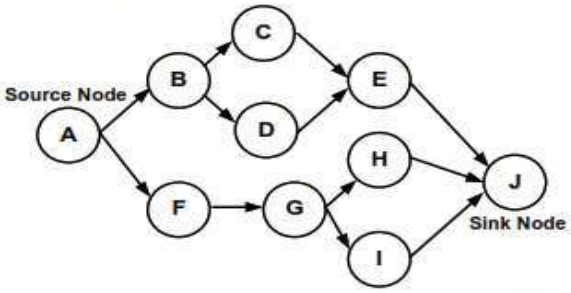

Fig. 1. Routing of data packets between nodes in a network.

The external network attacking people will take over the control of sensor nodes and placed some of unwanted data packets. The packets will get transmitting on the network creating a vulnerable for the privacy of data transmission. There are many types of threats over the network. But the important objective of the threats is to inject a unwanted data packets and makes the network resources to get wasted. This will result in the nodes to enter into a dead condition and the entire network will get into an inactive state. [6-8].

As the head of the cluster (CH) is point of data collection or data aggregation, the chance of external threat for the heading nodes is maximum. External threat is a degradation attack by any network engineer to enter into a network structure [9]. Defining a methodology for identifying the external threats is difficult because this node will have limited amount of power back up and supporting hardware components [10]. A network structure which has a heading node is shown in figure 2.

Power Factor Correction Strategies for BLDC Drives – A Review

Publisher: IEEE

Muthukumar Paramasivan ; Veeramuthulingam Nagarajan ; L. Padmasuresh ; M.V Suganyadevi **All Authors**

Abstract: An overview of appropriate input power factor improving for brushless direct current (BLDC) motor drives is given in this white paper. Numerous converter interface topolo... **View more**

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Abstract:
An overview of appropriate input power factor improving for brushless direct current (BLDC) motor drives is given in this white paper. Numerous converter interface topologies to drives and control design artefacts to power factor progression have been studied recently. The control of several converters in the system's SEPIC, Full Bridge, Zeta, Half Bridge, Push-Pull, Boost, Buck, Cuk, and Boost-Boost categories was evaluated as the basis for this experiment. The converter topologies come to attain an inherent power factor correcting theory and supply to the direct us of the input power. This paper elaborates the important of the control schemes for improving the power factor and displays their relative merits in the performance. In terms of extracting a power factor that is nearly equal to one, as well as lowering AC line harmonics and torque ripple, this outcome demonstrates compliance with power quality requirements. Performance of the drive may be enhanced.

Published in: 2022 Third International Conference on Intelligent Computing Instrumentation and Control Technologies (ICICICT)

Date of Conference: 11-12 August 2022

INSPEC Accession Number: 22190109

Date Added to IEEE *Xplore*: 18 October 2022

DOI: 10.1109/ICICICT54557.2022.9917783

Multi-input Multistage SEPIC Converter for contemporary Applications

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[*] vijay91mtech@gmail.com

Abstract – Renewable Energy Sources are abundant in nature but utilization of these energies requires sophisticated techniques since these sources are erratic in nature. Electrical output of most of the Renewable Sources is variable DC and it needs to be converted in to constant DC or AC voltage for the standalone and grid connected applications. DC-DC converters are used to convert the variable DC input from Renewable Energy Sources to the constant DC voltage. SEPIC converters use a single switch to give regulated output voltage in the presence of solar energy. SEPIC converter use minimum number of active components and convert the voltage level without changing the polarity. This article proposes a three stage SEPIC converter with multiple inputs and a single switch. This will reduce the requirement of separate chopper circuit for each input. A modified Pulse Width Modulation scheme also presented for duty cycle calculation. A comparison has been made with other converters and the analysis also presented. The proposed converter has been simulated in the MATLAB/Simulink Environment and the results of the simulation have been validated by the hardware setup.

1. Introduction

Modern power applications in the energy arena not only increases the power demand but also requires alternative, compact, easy to use and energy efficient converters. Inverters and rectifiers play a major role in medium and high power conversion [1]. Rise of contemporary applications like micro grid and Electric Vehicles require DC voltage and hence choppers gained attention. Solar Photovoltaic (PV) systems require DC-DC converters to convert variable input to fixed voltage output based on the requirement [2,3]. Buck converter and Boost Converter are the conventional converters used to step down and step up the voltage respectively. To achieve the higher and lower voltage levels in a single converter, Buck-Boost converter is the best choice but it requires two controllers and produces inverted output. The conventional flyback converter requires a transformer [4,5]. Single Ended Primary Inductor Converter (SEPIC) provides required gain based on the load voltage or battery charge level. It uses minimal active components compared to other types of DC converters [6]. SEPIC converter provides positive output voltage compared to buck-boost converter that provides negative output voltage [7]. In some applications there is a need to maintain voltage at a constant level even if there are any fluctuations in the supply side. In the case of ac supply, voltage regulators can be used to regulate and maintain the constant voltage [8, 9]. In the case of renewable energy, output voltage must

Artificial Butterfly Optimization based Cluster Head Selection with Energy Efficient Data Aggregation model for Heterogeneous WSN Environment

Publisher: IEEE

S. Venkatasubramanian ; R. Vijay ; S. HariPrasath All Authors •••

Abstract: The WSN is a new and urgent technology with many potential uses, including but not limited to health security, environmental monitoring, etc. Due to lower battery capacit... **View more**

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Abstract:

The WSN is a new and urgent technology with many potential uses, including but not limited to health security, environmental monitoring, etc. Due to lower battery capacity, WSN has a restricted-energy resource. In order to solve the issue of unequal energy consumption among nodes, it is necessary to choose a sensor node from a cluster with more than enough power to make up for the weaker nodes. This paper develops the idea of heterogeneous WSN (H-WSN), which provides supplementary energy to the heterogeneity network. One method that has shown promise in overcoming this difficulty is the clustering technique, which optimizes energy consumption and extends the useful life of a sensor network. Even if the existing approaches function well, the computational complexity may rise due to the usage of a single mobile sink in their studies. As an alternative to communication among each CH and sink through a separate hop, the network uses Multiple Mobile Sinks (MMSs). The combination of the data collection and aggregation mechanism (DCA) and artificial butterfly optimization (ABO) based on CH selection allows for energy-efficient data transfer using MMSs in H-WSN. The CH assortment uses the distance parameter, remaining energy, and regular energy for the suggested energy efficiency model. The NS2 platform hosts the final product of the projected H- WSN. The suggested ABO-CH-DCA approach is superior to the baseline protocols in simulations on various measures, including throughput, network lifespan, remaining energy, dead nodes, and live nodes.

Published in: 2023 7th International Conference on Computing Methodologies and Communication (ICCMC)

Date of Conference: 23-25 February 2023

DOI: 10.1109/ICCMC56507.2023.10083550

Date Added to IEEE *Xplore*: 04 April 2023

Publisher: IEEE

▸ **ISBN Information:**

Conference Location: Erode, India

Contents

I. Introduction

Multiple sensors sink make up a WSN, an essential component of worldwide computing [1]. Physical factors like pressure, sound, and temperature can all be monitored with the help of WSNs. The development of WSN has led to a wide range of uses for these networks, from flood detection and military applications to weather identification. In contrast, more power is needed for these

Autonomous Delivery Vehicle Using Raspberry Pi and Computer Vision

Vijay Ravindran[1*[0000-0002-3561-1376]], Chandrika S[1], Ram Prakash Ponraj[1], Krishnakumar C[1], Devadharshini S[1], Lakshmi S[1]

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Abstract. Congestion on the roads slows down the distribution of goods, which is essential for the rapid development of an economy. Additional workforce is required to track the delivery van's trip for its entire duration and the unexpected presence of a pedestrian or animal in the roadway often results in a fatal accident. This manuscript presents a self-driving vehicle to overcome the drawbacks, equipped with the sensors and computing power to find its way around public highways. It also reports its precise location in real time to authorities through a map and functions with little more than its own internal systems and algorithms. The vehicle may reach its destination without any interference from the driver, eliminating the possibility of human error. A hardware prototype of the proposed autonomous vehicle with a Raspberry Pi 3 processor and a web camera is implemented. Since the GPS system transmits live data on the location, Open CV analyzes these frames to determine which lane the automobile is in and which traffic signs should be followed.

Keywords: Raspberry pi, Computer vision, OpenCV, Autonomous vehicle, self-driving vehicle, Delivery vehicle.

1 Introduction

Autonomous vehicles (also known as driverless vehicles) may move through their environment without any help from a human operator by using sensors such as radar, GPS, computer vision, and others [1]. There are many issues with conventional vehicles, like violations of rules, continuous working hours, and poor judgment, which lead to several fatal vehicle accidents. Several researchers [2] have made significant progress in the previous decade toward developing completely autonomous vehicles and robots. In light of these considerations, we've developed, using a Raspberry Pi and computer vision, a powered delivery vehicle with autonomous driving capabilities. The live footage captured by the vehicle's aerial cameras is an invaluable addition to the investigation. Once the system determines the appropriate steering angle, the vehicle is maneuvered in that direction. Training the automobile to steer with only camera input is the focus of this study. Moreover, the authorities are kept up-to-date

Design and Implementation of Double Frequency Boost Converter

M. Nelfin ; M. Marimuthu ; S. Vijayalakshmi All Authors

Abstract: A double frequency boost converter is employed in place of a traditional step up converter in this article. Due to high voltage stress, a regular step-up converter cannot... **View more**

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Abstract:
A double frequency boost converter is employed in place of a traditional step up converter in this article. Due to high voltage stress, a regular step-up converter cannot maintain high gain, a high-frequency converter has poor performance, and a low-frequency converter has low efficiency. As a result of the dual frequency converter, performance, efficiency, and gain have all improved. The step up converter in this system can be powered by solar energy or wind energy. The proposed converter is simulated using MATLAB/Simulink and its performance compared against the other frequency converter.

Published in: 2022 3rd International Conference for Emerging Technology (INCET)

Date of Conference: 27-29 May 2022

Date Added to IEEE Xplore: 15 July 2022

DOI: 10.1109/INCET54531.2022.9825420

Publisher: IEEE

Conference Location: Belgaum, India

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A New Energy-Efficient Ohmic heating Based Instant Rice Preparation

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Abstract- This research paper presents the development of instant rice using electrical technology. Experimental investigations have been carried out to study the electrical methodology used for the preparation of instant rice by passing blast of hot air through the rice for a constant residence time with temperature variations controlled by the electric heater. The experimentation was further continued with different residence time at constant temperature of rice. Detailed study was conducted with specially fabricated electrical equipment's to optimize air flow rate, rice temperature and energy consumption to produce instant rice. The instant rice produced was thoroughly analyzed and tested for nutritional values and for the cooking requirements in the research laboratory.

Keywords – Electric heater, Residence time, pre-cooking, instant rice, Energy saving, Instant rice.

I. INTRODUCTION

RICE is one of the leading food crops of the world and is the staple food of more than 50% of world's population. Rice is grown in over hundred countries. Rice provided 20% of per capita energy and 13% of protein for human consumption worldwide. The calories obtained by the rice are more than that of the other crops. In the rice eating provinces of India and China rice also provided over 4000 kJ of energy per day for several million people. Every day millions of people throughout the world are engaged in the mundane task of cooking rice. Although quantitative loss in washing and cooking (about 2%) may not seem very significant, when it is multiplied by millions of pots of rice being cooked, the accumulated loss is staggering. There occurs 20-40% of vitamin loss also in the process of cooking and washing. To avoid this, processed rice should be made available to households. Curing greatly helps the consumers in minimizing loss of nutrients during cooking and washing. More over conventional rice cooking consumes more time and energy. Ordinary rice requires 20 to 30 minutes to cook to a culinary acceptability. In some instances, the rice is soaked, washed and steamed requiring a huge attention time. The relatively long preparation time has restricted rice consumption in United States. Various rice varieties required different cooking time and yield cooked rice of different textural characteristics. The changes in method also have a dramatic change on taste, texture and flavor. The quality of instant rice varies depending on variety of rice being processed. Instant rice must be cooked within five to seven minutes and the cooking method must be simple. After the completion of all the processes of cooking the rice, the taste, flavor, and texture of the cooked instant rice should match the properties of cooking the normal rice. It should be rich in nutrients, well balanced in composition and could be easily processed in mass quantities.

The fast-changing life style of people demands convenience in terms of time and energy needed for the preparation of food items. Development of ready / instant product adds convenience, saves time and labor and provides hygienic products of standard and uniform quality with enhanced shelf life. Thus the instant product could find a market in urban and large catering establishments. Hence the instant rice is the need of hour. Literature survey shows that the author Rikimaru Hayashi, Food science and Technology, college of Bio resource science, Nihon university, Kamenoi 1866, Fujisawa, Kanagawa 252 – 8502, Japan, in his article, "High-pressure food processing of rice and starch foods" published at IRRI, indicated the effect of high pressure pretreatment of rice. Further the paper also substantiates the development of instant rice by Dr. Yamazaki. The authors Elaine T. Champagne, Hameet S. Guraya, Frederick F.Shih and Ranjit S. Kadan in their article "Developing novel processes for incorporating the unique nutritional and functional properties of rice into value – added products", published at IRRI, have explained the physical process for quick – cooking brown rice. The fast cooking process made by Dr.Guraya had decreased the cooking time of brown and white rice. This process sandblasts brown rice with pre-boiled rice flour.

Instant rice technology doesn't exist in India at present and this rice is being imported from countries like U.S.A, U.K, Thailand, China and Canada at substantially higher prices. This article has brought out the successful development of instant rice to achieve reduced cooking time, energy consumption, capital costs recurring expenditure and increased convenience to the consumers. The population in India is increasing day by day and due to this India is facing a huge demand on LPG. So to compensate the fuel demand in India we introduced a project named instant rice which reduces the cooking time and fuel cost drastically.

Monitoring Humidity and temperature using the Internet of Things

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Abstract
In this proposed work, We can control any electrical device in homes and businesses using the Internet of Things (IoT). Furthermore, data from every sensor may be accessed and analysed visually from anywhere in the globe. Using an Arduino Uno and an ESP8266-01 module, we can able to read temperature & humidity data from the sht25 sensor and upload it to a Cayenne app. Arduino Uno is a microcontroller that reads humidity and temperature data from an Sht25 sensor processes it and sends it to an ESP8266 module. The ESP8266 WiFi module is suitable one of the most popular platforms for the IoT. It has the ability to send data to the IoT cloud.

I. INTRODUCTION

In Information and Operational Technologies, both software and hardware technologies are necessary to control and monitor the field of physical sensors. Supply chain components such as logistics, assets, processes, and completion deadlines benefit from the inherent interconnectedness and visibility provided by IT and OT. By supplying information to distant control and management units, the ICS maintains its efficiency and competitiveness. Cyber attackers frequently target IT and OT since most ICS lack rigorous security laws and the ability to recognise and monitor intrusions. • A graphical user interface (GUI) application that streamlines the interaction of hardware, control systems, and human operators is known as a human-machine interface (HMI) (faculty).

The HMI displays trends, historical, and real-time status based on data and logs obtained from the ICS environment. For monitoring, customising, setting control points, and determining operational parameters, MI builds dashboards for sensors and controllers on a regular basis [11-15]. The Micro Controller (MC), which is the control component of the ICS advertising, provides process management. MC can be used to monitor, control, and access distant actuators and sensors, for example is shown in Fig. 1.

Microprocessor-based field equipment, such as Remote Terminal Units (RTU) and Master Controller Units (MTU). The RTU gets commands from the MTU and delivers data from the field to it.

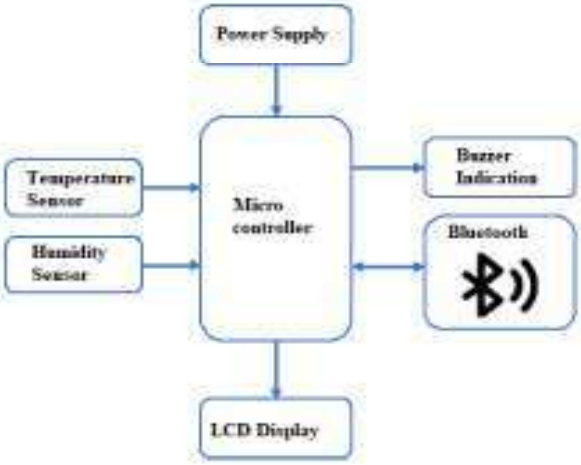

Fig.1 Proposed system Block diagram

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I2C Mini Module SHT25 I2C Humidity and Temperature Sensor 1.8% RH 0.2°C It's a high-precision humidity and temperature sensor that's established an industry standard in terms of form factors and intelligence, delivering calibrated, linearized sensor readings in digital, I2C format. This sensor is a suitable and most efficient device for measuring temperature and humidity since it is equipped with a sophisticated analogue and digital circuit is portrayed in Fig. 2.

A survey on controlling techniques employed in Microgrid

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***Abstract*— Diminishing era of conventional non-renewable energy sources set up the path for the research and expansion of renewable energy sources (RES) continues with the development of the microgrid and its controls. Microgrids are supplied from the RES through some power converters which leads to the necessity of a controller to suppress the power quality issues due to their nonlinearity properties. In this paper, the controlling techniques employed and analyzed for microgrid application were briefly overviewed and discussed.**

Keywords : Microgrid, Controllers, Renewable Energy Sources (RES), Regulators

I. INTRODUCTION

Today's researcher mostly concentrates on Renewable energy sources which are the alternative energy sources of fossil fuels. The enormous availability of natural energy resources not only reduces the fear about the declining nature of fossil fuels, and also the dependency on foreign oil sources countries. The developing research area also creates a lot of employment opportunities which indirectly develops the national economy and the economy of its citizens. Every part of the earth has some natural energy sources like solar, wind, hydro, and tidal depending on the geometrical types of the part. Analyzing these criteria enhances the probability to attain the advantages of renewable energy according to its availability and usage.

The scattered nature of RES leads to the concept of microgrid. The conventional transmissions were done mostly through AC. DC transmission is also considered because of its advantages like no frequency-related issues, nonappearance of skin effect, and no need for compensation for reactance. Most commonly popular RES are solar and wind the output of prior belongs to DC and the latter belongs to AC. When combining these RES, a necessity arise for the power electronic switching components based power conversions which create nonlinearities in the microgrid. It affects the power quality of the grid and originates improper function of microgrid which has to be controlled by a controller to enhance the power quality.

To construct a quality microgrid the knowledge about the controlling technique is essential, as it plays a major role in the issue of quality power through microgrid. This paper gives an overview of the controlling techniques in micro grids and the review of recent researches in it.

II. TYPES OF CONTROLLERS

A. Conventional PI, PR, PID Controllers

The Proportional-Integral-Derivative (PID) [1], Proportional-Integral (PI), Proportional-Derivative (PD), and Proportional-Resonant (PR) controllers are all members of this family. These are especially used to control linear systems. Because of their ease of use and control, PI controllers are commonly utilised in renewable energy conversion systems. Fig. 1 shows PI controller is generally suitable for DC control due to its proportional gain parameter, it is not suitable for AC control as it creates stability issues. As a result, for AC control, a PR regulator is chosen. In a stationary reference frame, a PI regulator requires a wide range of gain to achieve constant error, which is not attainable. In a dq control, a PI regulator and a PR regulator in a stationary reference frame both work in the same way.

Nonlinear PI controller along with k compensator controls the DC bus voltage and improves power quality to provide optimal power allocation between hybrid energy storage systems. The grid voltage distortion decreases these regulators' satisfactory performance. Under voltage distortion conditions, a single PR controller depicted in Fig. 2 is not enough to eliminate all harmonics present in the grid current. The addition of harmonic compensators for positive

TWO-STAGE VOLTAGE REGULATOR FED VOLTAGE CONTROL USING PIC MICRO CONTROLLER

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Abstract--For today's laptops, computer peripherals, and light load efficiency, improving battery life is a major task. High-end server applications are increasingly focusing on the dual step 48V into 12V into 1.8V VRM (Voltage Regulator Module) configuration. Because it efficiently delivers the isolated 12V output, the Inductor-Inductor-Capacitor (LLC) dc-dc converters are the recommended option of the initial step of conversion. The multi-phase Buck converter next converts it to 1.8V. Because the switching loss is lower, this study offers a high-efficiency half-bridge inverter LC resonant circuit, followed by a full-wave diode rectifier. Because of the LLC's reduced core loss and the multi-phase Buck converter's lower switching loss, as well as the simplified converter architecture's reduced number of switches, total light load efficiency will improve significantly. A step-down transformer is then used to lower the inverter voltage. Experiments on the two-stage VRM reveal a fast transient response as well as a light load and an improved efficiency, high compactness 48V into 12V into 1.8V Inductor Inductor Capacitor is built. The outcomes of the experiment reveal the benefits of the approaches proposed.

Key Words: **Inductor Inductor Capacitor (LLC), Buck Converter, two-stage Converter, DC Transformer (DCX)**

I. INTRODUCTION

Power Electronics is a division of Electronics & Electrical Engineering that handles the use of semiconductor components to convert energy from a supply to the quantity needed to a load. The load might be AC or DC, single or three-phase, and isolated from the power supply. For a DC source battery, a PV panel, a generator, or a power supply can all be utilised as a power source (single-phase or three-phase with a frequency of 50/60 Hz). A source of power converter transfers the required source of an electricity supply to the load [1-5].

With the advancement of cloud computing with big data, the demand for enhancing efficiency and increased density VRM for data center requests continues to grow. The CPUs alternate between sleep and wake modes, with the sleep mode being used the most. As a result, sleep-mode efficiency is crucial for lowering total data center electricity use. Server usage in commercial and enterprise data centres "rarely drives past 6%," according to McKinsey & Company, use 30% of servers remain comatose, consuming power but offering no-account meaningful data facilities.

A common power configuration of data centres are the distribution bus (48V) of a 48 V into 1.8 V Voltage Regulator Module of the motherboard. The two-step 48V into 12V into 1.8V VRM is widely utilised in such scenarios. The Inductor Inductor Capacitor converter is an excellent high-quality for the initial renovation phase meanwhile it efficiently delivers an isolated 12V output. Owing to the significance of minimum load efficiency, more energies have been done to progress Buck VR's less load efficiency. Several control algorithms are offered that use of the signal duty ratio to increase efficiency at light loads. A flexible load VR has been proposed, called adaptive FET modulation that achieves high efficiency in both little and high load regions.

An adjustable ON time controller and a unique non linear inductors are introduced to increase dis continuous current mode efficiency. Several SR called synchronous rectifiers auto operate devices are engaged, allowing the Synchronous Rectifier drives the potential to be decreased since the source voltage Vin to the optimum value, resulting in increased efficiency across the board. By minimizing the Vin for the second stage, a two-stage 12V VR and associated sophisticated controller techniques to progress light load efficiency has been presented.

The LLC DC Transformer (DCX) phase is generally applied as nonregulated to improve its efficiency owing to set switching frequency f_S. Many applications use topology change to the transaction with actual extensive source voltage and an output voltage ranges. The gain of the

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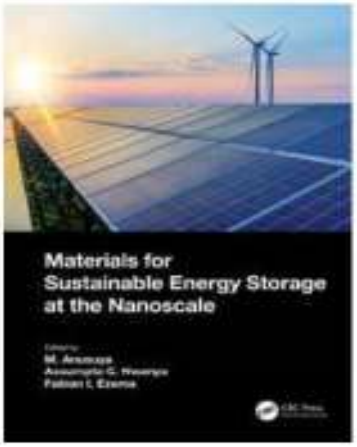

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Abstract

Power quality is an essential concern in the modern power system that can affect consumers and utility. Utility distribution networks, sensitive industrial load, and critical industrial load operations all suffer from service interruption which can cost significant financial loss. This includes voltage sag and swells in the distribution grid which is considered to be the most frequent type of power quality problem. To prevent voltage disturbance various solutions have been developed to protect sensitive loads but DVR is considered to be the most efficient and effective solution. Simulation results were presented to illustrate and understand the performance of DVR under sag conditions.

Modeling and Analysis of Hybrid Quadratic Boost Converter in MATLAB/Simulink Environment

Ramprasath Selvaraj ; Krishnakumar Chidhbabu ; Muthumariyammal Anandharaj ; Rameshbabu Perumal All Authors •••

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Solar Energy is abundant in nature. The power can be extracted in many forms from the Sun. Electrical Power Generation is one of the useful contribution of solar energy which can be generated using Solar Photovoltaic Cells. The basic parameters of the solar energy like irradiance, temperature, etc., are variables in nature. Solar PV power prediction is a critical aspect of solar PV system management and useful for load synchronization. The development of more accurate and reliable solar PV power prediction methods is essential for the continued growth and success of the renewable energy sector. Various machine learning algorithms can be used to develop a model that can accurately predict the output of a PV system. In this article, a simple random forest machine learning approach was used to predict the potential power generated by a PV system. The model is trained using historical data of the PV system output, such as the amount of energy produced, temperature, irradiance, and other factors. Results of the algorithm is presented, compared with Decision Tree algorithm and the output parameters are discussed.
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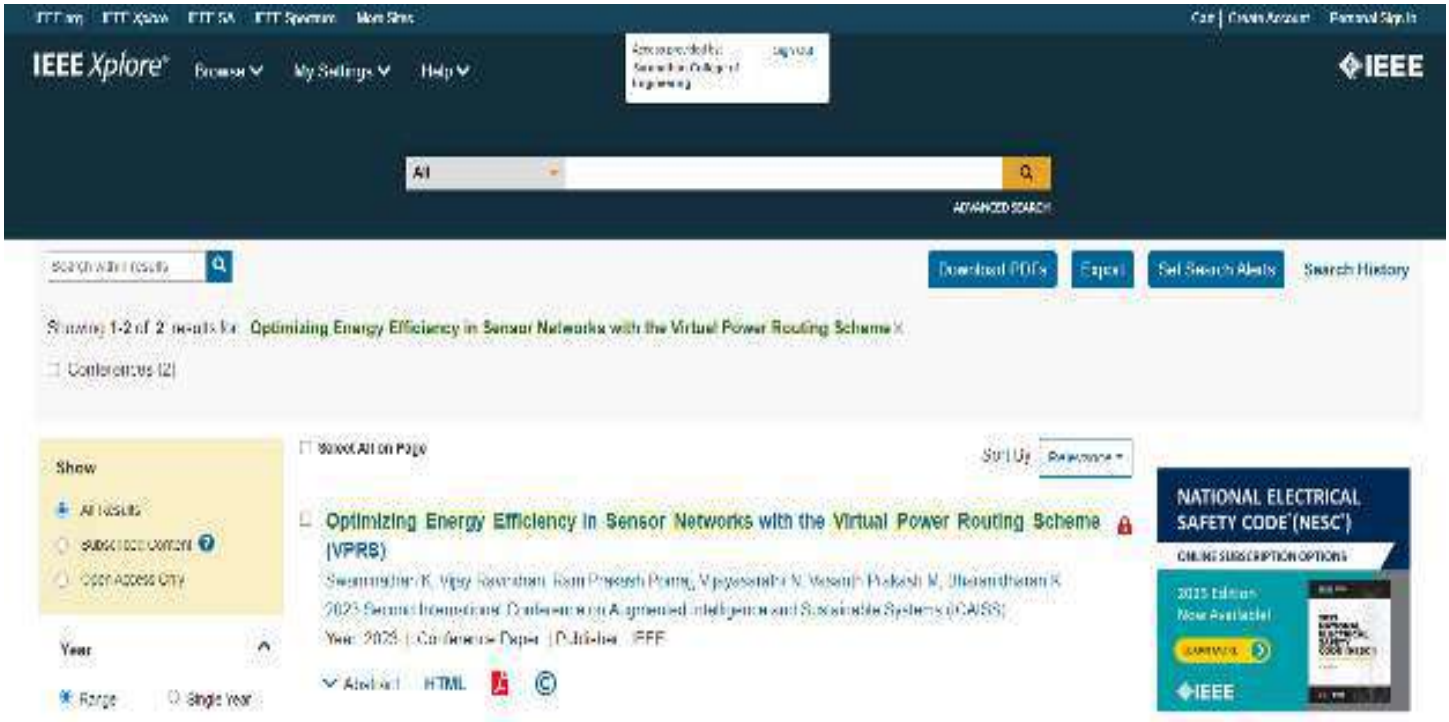
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Abstract

Congestion on the roads slows down the distribution of goods, which is essential for the rapid development of an economy. Additional workforce is required to track the delivery van's trip for its entire duration and the unexpected presence of a pedestrian or animal in the roadway often results in a fatal accident. This chapter presents a self-driving vehicle to overcome the drawbacks, equipped with the sensors and computing power to find its way around public highways. It also reports its precise location in real time to authorities through a map and functions with little more than its own internal systems and algorithms. The vehicle may reach its destination without any interference from the driver, eliminating the possibility of human error. A hardware prototype of the proposed autonomous vehicle with a Raspberry Pi 3 processor and a web camera is implemented. Since the GPS system transmits live data on the

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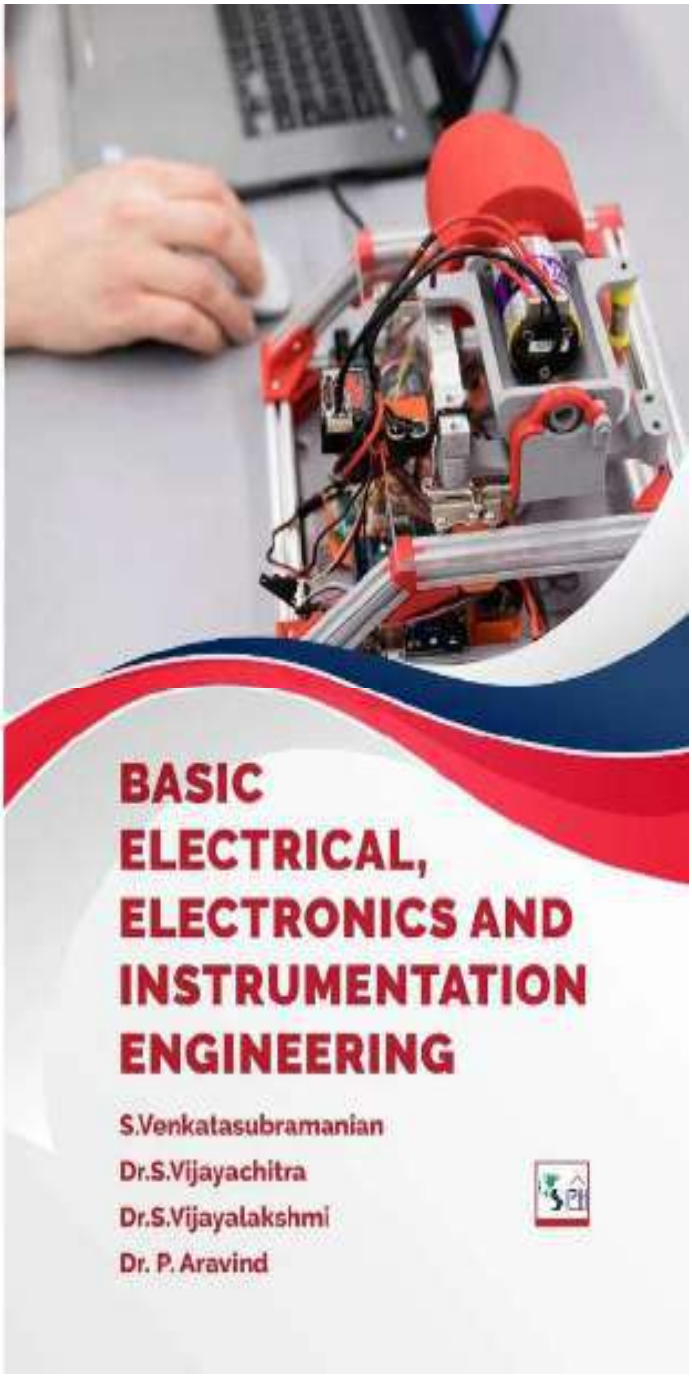

PROCEEDINGS

of

National Conference

on

Cutting Edge Technologies in Electrical, Communication, and Soft Computing Techniques (NCCECS'23)

(10th May-2023)

Organized by

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

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SARANATHAN COLLEGE OF ENGINEERING

Venkateswara Nagar, Panjappur, Tiruchirapalli-620012

HEAT TRANSFER ANALYSIS USING SOLAR PANEL WITH CONVECTION METHODS

Mohamed Fahim[1],Nithish.S[2], Subash.N.S[3] ,Muthu Kumaran K[4], Gopi Krishnan[5]

(Assistant Professor, Instrumentation and Control Engineering, Saranathan Collegeof Engineering)

(UG Students, Department of Instrumentation and control Engineering, Saranathan college of engineering)[1,2,3,4,5]

Abstract--The sun provides an abundant source of energy,which can be harnessed through the use of solar panels to produce electricity. When photons of light from the sun strike the photovoltaic cells within the solar panel, they generate an electric current. However, losses occur during this process, with one of the most significant being the production of heat beneath the panel, which can reduce its efficiency. To counteract this, fluid is circulated through the ducts beneath the panel to absorb the heat and transfer it away. This convective heat transfer process can increase the power output of the solar panel beyond its typical levels.

DESIGN OF PLANT DISEASE IDENTIFICATION SYSTEM USING SVM CLASSIFIER

Dr.S.M.Giri Rajkumar[1], I.Shanjith Kumar[2], Mr.S.Hari Prasath[3], S.SyedAthaullah[4], G.Ragavantiran[5], S.K.Syed Fizal[6]

(Assistant professor,Instrumentation and control engineering,Saranathan College of Engineering)[1]

(UG Students,Instrumentation and control engineering, Saranathan College of Engineering)[2,3,4,5,6]

Abstract--Finding plant leaf diseases is a crucial responsibility in agriculture to keep an eye on and preserve the health of crops. Machine learning techniques have been used recently to automate the

ANALYZE OF HAND WRITTEN DIGIT CLASSIFIER USING SVM CLASSIFIER

Girirajkumar M[1] ,Hariprasath S[2], Sivabalan D[3],Sakthiganesh K[4] ,Varun K[5],Thangasabari S[6]

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Abstract-The development of machine learning algorithms for the recognition of hand written numbers has made great strides in recent years. The Support Vector Machine (SVM) classifier is one of the most often used methods for this task. In this research, we want to examine how well an SVM classifier recognizes handwritten numbers. We achieve this using the 70,000handwritten digit images from the MNIST dataset. To improve the digit characteristics, we preprocess the photos using method sincluding normalisation, denoising, and edge detection.

VIBRATION CONTROL OF A PIPELINE USING DSPACE

M.Shanmugavalli[1],D.Bharath Samvel[2],G.P.Jayakanthan[3],R.Dhinesh[4],K.Hariharan[5]

(Professor, Instrumentation and control engineering, Saranathan College of Engineering)[1]

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Abstract— Vibration of a pipeline is being controlled. This pipeline setup is comprised of actuators and sensors placed above and below the pipes. Numerous factors, including human action and nearby motorized equipment, can result in vibrations. Turbulence in flow can also cause vibration in the pipelines. In this instance, the flow creates the disturbance. The piezoelectric sensors are used to detect the vibration. The PID controller simultaneously transmits a control signal through dSPACE to the actuator through which the vibration can be reduced. Using Ziegler-Nichols, a PID controller is designed for the non-linear pipeline for vibration suppression in order to maximize outcomes. The model of the system which includes the dynamics of the structure together with the sensor/actuator dynamics is obtained through the calculations. The performance of PID controller is evaluated experimentally using dSPACE controller board.

AIR POLLUTION MONITORING SYSTEM USING MYRIO

M. Shanmugavalli[1], S. Regena Arshni[2], A. Sharlene[3], ASwathi[4]

(Professor, Instrumentation And Control Engineering, Saranathan College Of Engineering)[1]

(UGStudent, , Instrumentation And Control Engineering, Saranathan College Of Engineering)[2,3,4]

Abstract--From contaminating our environment to damaging our health, poor air quality is a major global challenge. No one is immune to the negative effects of air pollution, but many think this shared burden doesn't affect their lives. Clean air is everyone's business and air pollution is preventable. The solutions to this pressing issue are also the key to tackle the climate crisis fostering inclusive societies and improving childhood development. By working together, we have a golden opportunity to transform our approach to one of the great hidden killers. But the first step is to know, what are the causes? According to the survey, about 50% of the diseases are caused by the pollutants in the air. Our project focuses on a remote air quality monitoring based on my RIO-Lab VIEW, which could monitor the quality of air via detection of Carbon Monoxide (CO), Ozone gas and strong oxide like C12,NO2 etc, also the hazardous gas like smoke,benzene, vapors rate in indoor locations within buildings. The sensors used to detect these gasses are MQ-7, MQ-131 and MQ135, that are connected to the Arduino Uno and My RIO controllers;the outputs are processed by the Lab VIEW software on the user computer remotely. My RIO will continuously save the gas rates data when the substance exists around these locations. In this way, the Lab VIEW can process and display the data to the user wirelessly or remotely. Subsequently, the average rate could also be calculated. The system is very useful and can be used in the future.

DESIGN AND SIMULATION OF PIEZORESISTIVE PRESSURE SENSOR USING INTELLISUITE

Dr M. Shanmugavalli[1], Vignesh.G[2], Harish.R[3], Nicolas Nesan.G[4],Parithi Kumar.J[5]

(Assistant professor, Instrumentation and Control Engineering Saranathan College of Engineering)[1]

(UG students,Instrumentation and Control Engineering Saranathan College of Engineering)[2,3,4,5]

Abstract-- The Piezoresistive Pressure Sensor given in this study describes the best methods for enhancing the sensor's performance. To get findings that are roughly equivalent to theoretical values, finite element analysis is used as part of the design process. The size, shape, and position of the piezoresistors are taken into account during the simulation. The piezoresistors, which are coupled in the shape of a Wheat stone bridge, convert the applied pressure into electricity. By choosing the appropriate membrane geometry and piezo resistor placement, the sensitivity of the sensor can be increased, and the results are also acquired in this manner.

LABVIEW BASED EV CHARGING STATION WITH GSM CONNECTIVITY

Dr.K.Gaayathry[1], Darwin I,Thaneshwaran S[2],Raghuram M[3],Sundharadevan S[4]

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(UG Students, ,Department of instrumentation and control engineering,Saranathan college of engineering)[2,3,4]

Abstract-- This study proposes a new method for wirelessly charging electric vehicles (EVs) using RFID tags and optimized path planning to reduce charging costs. The current manual charging process is time-consuming and lacks security. The suggested system utilizes RFID technology for user identification and charging authorization, ensuring EV security and preventing unauthorized access. Additional safety measures, such as user authentication and real-time monitoring, enhance the overall charging infrastructure. As the demand for EVs and charging stations increases, reliable and secure charging infrastructure becomes crucial in contemporary smart cities to accomadate the growing environmentally conscious population.

BOILER PARAMETER CONTROLLING USING LABVIEW

Mr.R.Seetharaman[1],Arunkumar.R[2],Deepak.B[3],Vigneshwararajan.K[4]

(Assistant Professor, Instrumentation and Control Engineering, Saranathan College of Engineering)[1]

(UG Student, Instrumentation and Control Engineering, Saranathan College of Engineering)[2,3,4]

Abstract--The project described in the abstract for "Boiler Parameter Controlling Using Lab VIEW" involves utilizing Lab VIEW to regulate several boiler system parameters. A graphical programming language called Lab VIEW can be used to create user interfaces and control systems for a variety of applications. The project will entail creating a Lab VIEW programme to track and manage crucial boiler system variables including temperature, pressure, and flow rate. In order to maintain optimal boiler performance, the programed would measure these parameters and make the necessary adjustments using sensors and actuators. The advantages of adopting Lab VIEW for this application, such as its simplicity and adaptability as well as its capacity to interact with a wide range of hardware components, would be covered in the abstract. Additionally, it would emphasise how crucial precise boiler parameter control is for reasons of efficiency, environmental protection and safety. The abstract would, in general, give a

Proceedings of International Scientific-Practical Conference «Sustainable Development Goals: Youth Policy and Innovative Technologies», February 15-16, 2023, Oguz Han Engineering and Technology University of Turkmenistan, Ashgabat, Turkmenistan

A NOVEL APPROACH TO INTERFACE SENSOR AND ACTUATOR USING NI DAQ HARDWARE

Aravind Pitchai Venkataraman[1*], Khalid Ali Khan[2], Suleyman Malikmyradovich Nokerov[3], Subramanian Pitchai Venkataraman[4], Perman Ezizgulyyevich Hojagulyyev[5]

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DoI: https://doi.org/10.5281/zenodo.7775847

Controller design for the interfacing of sensor and actuating element in closed loop is the most important part for process control researchers. For effective closed control system, the researchers were proposed various control algorithms and analyze the response in closed loop environment. In general, sensor output signal range is (4-20) mA and actuator input signal is (4-20) mA. In market data acquisition systems (DAQ) are available to acquire and generate signals in the range of (-10 to +10) V. It is highly need to convert the sensor output range of (4-20) mA to the range of (1-10) V to send signal to computer through DAQ and vice versa. For converting both input and output signal to the required range, the researchers have to design an appropriate electronic circuit with necessary components [1-7]. Many researchers are working directly on inbuilt real time interfaced process station. So, there is no need for them to design interfacing circuit. This lacks the researchers' knowledge in electronic circuit design for interfacing and some are interested in designing those circuit are facing problem due to availability of circuit components. This paper proposed a simple method to map the input and output signal using simple electronic circuit.

The proposed interface circuit is shown in figure 1. Illustrated circuit is not only quite simple and has the advantage of using simple laboratory level components like variable resistor (DRB), power supply, and a basic level DAQ interfacing system. For evaluating the proposed method, two cases (table 1) were considered and results were given in table 3, and table 4. Output voltage values were noted using multi-meter (DMM) or voltmeter before connecting to DAQ.

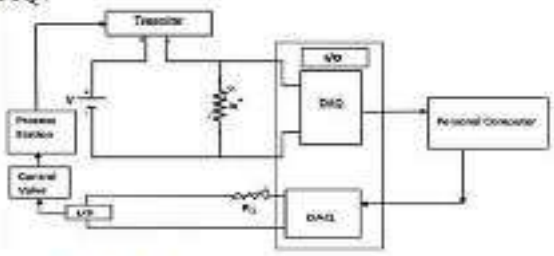

Figure 1. Interfacing of sensor and actuating element

Table 1. Values of operating parameters

Parameters	Case 1	Case 2
X_{ai}	1.28 V	1.28 V
X_{an}	5.41 V	5.41 V
X_{diff}	4.13 V	4.13 V
n	9	8
$X_{@v}$	0.458889	0.51625
Output signal range	(1-9) V	(1-8) V

In figure 1, process variable level was measured from the process station using sensor (transmitter). Signal from computer was given to process station through current to pressure (I/P) converter and as pressure signal (3-15) was given to control valve as control signal. For

Department of Information Technology

ISBN : 978-81-955250-8-9

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International Research Conference on Engineering Management Science and Technology (IRCEMST'23)

ISBN : 978-81-955250-8-9

SaaS PROJECT MANAGEMENT APPLICATION

Naveen T[1], Ramachandran[1], Vaitheeswaran I. M[1], Venkat Bharathi S[1], Thillaikarasi R[2]
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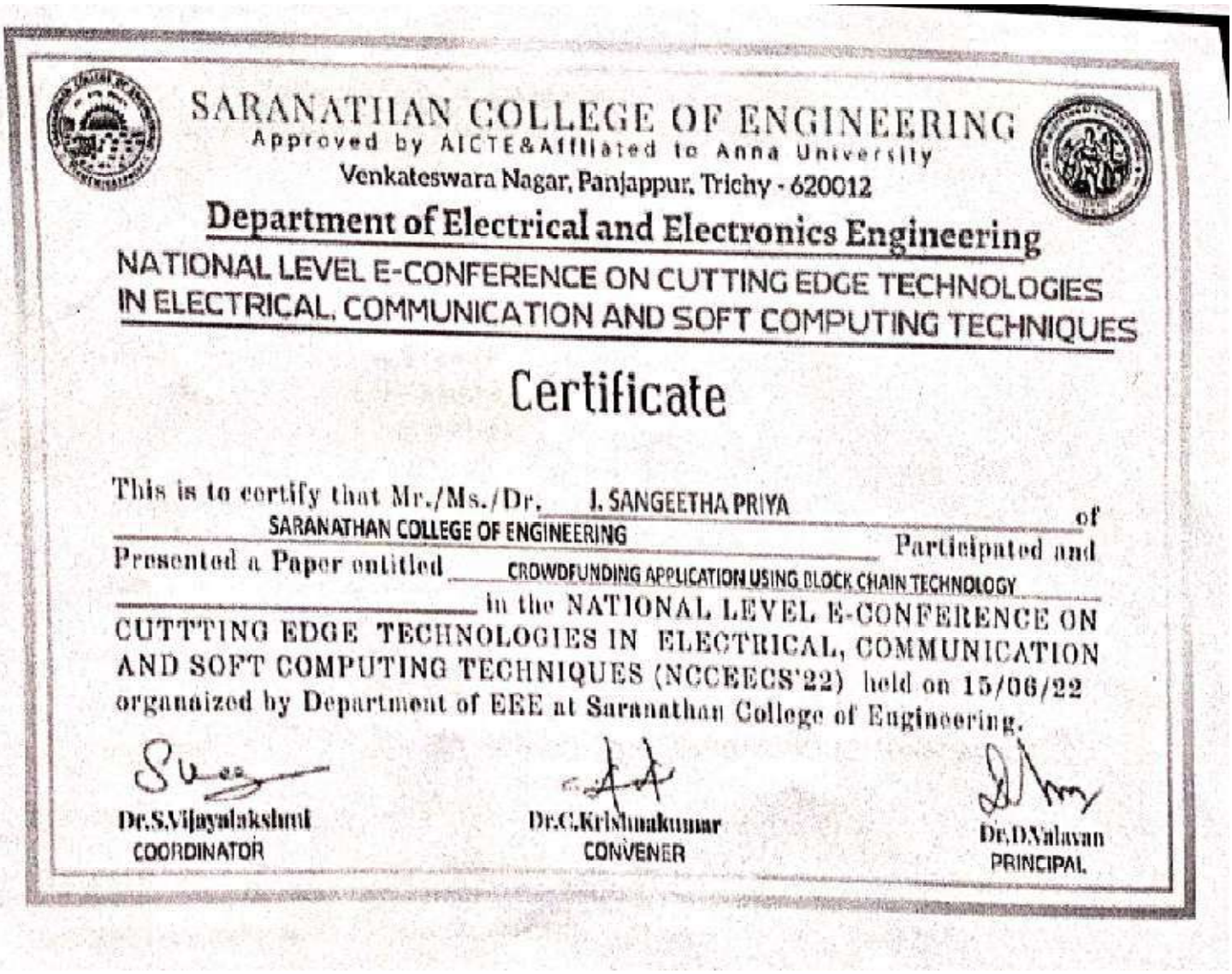
ABSTRACT

The SaaS Project Management Application is a web-based platform designed to streamline project management processes for businesses of all sizes. This application provides users with a centralized location to plan, organize, track, and collaborate on projects, enabling them to stay on top of deadlines and deliverables. Key features of the platform include task management, time tracking, team communication, project dashboards, and reporting. By leveraging the power of cloud technology, this application provides users with real-time updates, seamless integration with other business tools, and the ability to work from anywhere at any time. Ultimately, the SaaS Project Management Application empowers businesses to increase productivity, reduce costs, and improve project outcomes. Around 95 percent of Indonesia's total workforce are being employed by micro and small and medium enterprises (MSMEs) and cover around 99 percent of existing business enterprises in Indonesia, and many of them are managing projects for their business but lack on the usage of the appropriate tool for managing projects. The research described in this paper was undertaken in a MSME company in Indonesia, specialized in offering event management. Along with the observation and interviews to the MSME company, literature review is also done in the area of project management, SaaS and MSMEs to identify on the mandatory features of project management tool that are needed to sustain a project successfully. The main goal of the Project is to develop a feature list or framework for project management SaaS tools to improve the performance of the company.



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Volume 2, Book 15, 2022, IIP Proceedings

Futuristic Trends in IOT

Title of the Book: Futuristic Trends in IOT

Edition: Volume 2, Book 15, 2022, IIP Proceedings

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ISBN: 978-93-95632-69-0

Publisher, Printed at & Distribution by:
Selfypage Developers Pvt. Ltd.,
Pushpagiri Complex,
Beside SBI Housing Board,
K.M. Road Chikkamagaluru, Karnataka.
Tel.: +91-8861518868
E-mail: info@iiponline.org

IMPRINT: I I P Iterative International Publishers

CONTENTS

Futuristic Trends in IOT
ISBN: 978-93-95632-69-0
IIP Proceedings, Volume 2, Book 15, Part 1, Chapter 1
DIGITAL TWIN IN IOT CONTEXT INSIGHTS

DIGITAL TWIN IN IOT CONTEXT INSIGHTS

Abstract

Digital twin (DT) is a sophisticated technology that combines several engineering specialties. Industry is being revolutionised by digital twin. The technology of digital twins will eventually allow for the digital replication of everything in the real world. Digital twin is a cutting-edge technology that has drawn a lot of interest. Many engineering researchers and participants are unsure about the best technologies and tools to utilize. In order to give technologies and different tools standard for the applications of digital twin in the future, this literature review attempts to examine and describe the frequently used enabling technologies and tools by top Indian companies.

Keywords: Digital Twin, DT technologies, Five DT model, tools, Applications

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A ROADMAP TO SMART HEALTHCARE AUTOMATION SENSORS AND TECHNOLOGIES

Abstract

Life is pleasant simpler and easier in practically every way as automation technology advances. A wireless automation system that uses the internet to monitor health, functionality and features from anywhere in the world is known as a smart health automation. With the use of sophisticated data retrieval and classification models, disease may potentially be studied or even unusual health problems could be predicted. Employing Internet of Things (IoT) technology to observe human daily life, which includes activities, physiological characteristics, stress, and vital signs. There are numerous uses for the Internet of Things (IoT), including in manufacturing, healthcare, agriculture, and other industries. Wearable technology has become widely used in the health monitoring system in recent years, which has encouraged the development of the Internet of Medical Things (IoMT). The IoMT can significantly lower the mortality rate by aiding in early disease detection. Because of their various applications to users, smart healthcare systems have gained importance. It can be monitored and controlled remotely. This chapter includes a roadmap on IoT, automation technology and various recommendations into smart healthcare automation system sensors.

Keywords: Internet of Things (IoT), Smart health montoring, Smart Technologies, Smart Applications, Sensors, healthcare, machine learning (ML), deep learning (DL).

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IIP Proceedings

www.iipproceedings.org

Iterative International Publishers

Chikmagalur, Karnataka-577102, India
Paisley Circle, Novi, Michigan-48377, USA

ISO 9001:2015 as Publisher with imprint IIP under Raja Ram Muhan Roy National Agency, Ministry of Education, Government of India and also under Bowker ISBN Agency, USA

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IIP Proceedings, Volume 2, Book 15, Part 1.
ISBN: 978-93-95632-69-0
Publication Date: 01-November-2022

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Director, IIP Proceedings

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Iterative International Publishers

Chikmagalur, Karnataka-577102, India
Paisley Circle, Novi, Michigan-48377, USA

ISO 9001:2015 certified, registered as Publisher with imprint IIP under Raja Ram Mohan Roy National Agency, Ministry of Education, Government of India and also under Bowker ISBN Agency, USA

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Sheelavathi A
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IIP Proceedings, Volume 2, Book 15, Part 1.
ISBN: 978-93-95632-69-0
Publication Date: 01-November-2022

Nanjesh Beunur
Director, IIP Proceedings

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www.iipproceedings.org
Iterative International Publishers
Chikmagalur, Karnataka-577102, India
Paisley Circle, Novi, Michigan-48377, USA
ISO 9001:2015 certified, registered as Publisher with imprint IIP under Raja Ram Mohan Roy National Agency, Ministry of Education, Government of India and also under Bowker ISBN Agency, USA
Unit of Selfypage Developers Pvt Ltd

Certificate of Publication

This is to certify that

Muthukarupaee K
Department of Information Technology
Saranathan College of Engineering
Tiruchirappalli

has published a chapter titled "A ROADMAP TO SMART HEALTHCARE AUTOMATION SENSORS AND TECHNOLOGIES" in the edited book Futuristic Trends in IOT
IIP Proceedings, Volume 2, Book 15, Part 1.
ISBN: 978-93-95632-69-0
Publication Date: 01-November-2022

Nanjesh Bennur
Director, IIP Proceedings

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" INTERNATIONAL RESEARCH CONFERENCE ON ENGINEERING MANAGEMENT SCIENCE AND TECHNOLOGY (IRCEMST'23) " held on 12.05.2023 organized by Department of Computer Science and Engineering, J.J. College of Engineering and Technology, Trichy-09, Tamilnadu, India.

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Dr. M. P.REVATHI

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ISBN : 978-81-955250-8-9

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ISBN : 978-81-955250-8-9

Intelligent Automation & Soft Computing
DOI: 10.32604/iasc.2023.029495
Article

Tech Science Press

Gorilla Troops Optimizer Based Fault Tolerant Aware Scheduling Scheme for Cloud Environment

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Received: 04 March 2022; Accepted: 12 April 2022

Abstract: In cloud computing (CC), resources are allocated and offered to the clients transparently in an on-demand way. Failures can happen in CC environment and the cloud resources are adaptable to fluctuations in the performance delivery. Task execution failure becomes common in the CC environment. Therefore, fault-tolerant scheduling techniques in CC environment are essential for handling performance differences, resource fluxes, and failures. Recently, several intelligent scheduling approaches have been developed for scheduling tasks in CC with no consideration of fault tolerant characteristics. With this motivation, this study focuses on the design of Gorilla Troops Optimizer Based Fault Tolerant Aware Scheduling Scheme (GTO-FTASS) in CC environment. The proposed GTO-FTASS model aims to schedule the tasks and allocate resources by considering fault tolerance into account. The GTO-FTASS algorithm is based on the social intelligence nature of gorilla troops. Besides, the GTO-FTASS model derives a fitness function involving two parameters such as expected time of completion (ETC) and failure probability of executing a task. In addition, the presented fault detector can trace the failed tasks or VMs and then schedule heal submodule in sequence with a remedial or retrieval scheduling model. The experimental validation of the GTO-FTASS model has been performed and the results are inspected under several aspects. Extensive comparative analysis reported the better outcomes of the GTO-FTASS model over the recent approaches.

Keywords: Cloud computing; gorilla troops optimizer; task scheduling; fault tolerant; task completion time; failure probability

1 Introduction

Over the past decade, Cloud computing (CC) is emerging as a prominent paradigm and its usage had witnessed considerable development [1]. Small scale users and largescale commercial businesses and scientific applications get benefitted from using cloud. By the use of minimum involvement, clients can benefit service from CC since it allows universal and on demand access to a common pool of CC resources which can be hardware, software, and applications are communal resources. Fault might take place on each of these layers; nonetheless, software enabled algorithm is recognized and employed to

CHAPTER 4

A smart and efficient IoT-AI and ML-based multifunctional system for multilevel power distribution management

Lakshmi Kanthan Narayanan[1], Priyanga Subbiah[3], S.A. Sahaaya Arul Mary[2], R. Rengaraj Alias Muralidharan[4], Iswarya Gururajan[2], Ranjani Sampathkumar[2] and Arun Prasad Baskaran[2]

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4.1 Introduction

Friction is the least accurate of the six power processes. When a fabric scrapes against another object, friction electricity happens. As a result of the rubbing process, the object acquires charge and now possesses an electrical charge. Positive and negative electrical charges are the two most common forms. The positive and negative charge forms attract the positive and negative charge types, but the same charge type repels itself. For example, when contrary charges come into touch, they repel one other, and when same charges come into contact, they attract each other. Van de Graaff generators, which are used to generate large voltages to test the dielectric strength of insulating materials, are most commonly used for static electricity. Other uses include electrostatic painting and sandpaper manufacturing. The coarse grains create a negative charge when they pass across the negative plate. The coarse grains are pulled to the positive plate despite the fact typically opposing charges attract, allowing particles to be buried in the cement due to their high impact velocity.

The voltage established by the junction of two metallic materials is a function of temperature, as Thomas Seebeck discovered in 1821. When a

Smart Energy and Electric Power Systems
DOI: https://doi.org/10.1016/B978-0-323-91664-6.00008-5

CHAPTER 5

A survey on AI- and ML-based demand forecast analysis of power using IoT-based SCADA

Lakshmi Kanthan Narayanan[1], Priyanga Subbiah[4], R. Rengaraj Alias Muralidharan[3], Arun Prasad Baskaran[2], Venkatasubramanian Srinivasan[2], Aravind Prasad Baskaran[2], Punitha Victor[2] and Hema Ramachandran[2]

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5.1 Introduction

Since we are living in the technological era of Industry 4.0 and marching toward Industry 5.0, it, therefore, depicts that there is a huge demand of electric power at present and in the near future. In the recent past, we were aware of the power crisis evoked in the Republic of China, and it is feared that the shortage of power may get impended.

It is important to utilize the precious resource called energy in an appropriate manner, so that it paves way for our younger generation to get inspired as well. As we failed to identify the alternate energy generation resource in advance, indefinite closure of industry has occurred as a result of the aforementioned coal crisis. Drastic increases in population size is one major reason for the increase in unaccountable demand hike and on the other hand, the usage of electrical gadgets in our day-to-day life become inevitable [1]. Electric vehicles have the potential to reshape the transportation sector; whose insistence directly alarmed the human community about the demand of electricity is creeping up in an unimaginable spike. Therefore, the need for power audit is highly essential to combat the shortcoming power scarcity. The day zero of power has already raised the alarm for the emergency in the immediate damage control needed to be made toward power audit and supply [2].

Smart Energy and Electric Power Systems
DOI: https://doi.org/10.1016/B978-0-323-91664-6.00010-3

BREAST CANCER PREDICTION

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Abstract --Breast cancer is the most frequent cancer among women and the leading cause of cancer deaths in women. Breast cancer outcomes have improved the most in high-income countries(HICs). Breast cancer death rates in the United States fell by 34% between 1990 and 2014, thanks to increased earlier identification and effective adjuvant therapy. On the other hand, is becoming an increasingly pressing issue in low and middle-income countries (LMICs), where previously low incidence rates are growing by upto 5% each year. The advances shown in HICs have not been replicated in LMICs.

ISBN : 978-81-955250-8-9

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ISBN : 978-81-955250-8-9

SERVICE SELLING PLATFORM

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ABSTRACT

In today's fast-paced world, having a proposed work that can deliver essential household services right at our fingertips is incredibly helpful. Applications have completely transformed our lives and have made it easier for us to access services from the comfort of our homes. Such a proposed work can offer all fundamental home functions, including tracking an older adult's daily physical activity at home. This can have a positive impact on their health and wellbeing by providing important information on their functional, cognitive, and social health status. Moreover, it is essential that these proposed works are built using a disease-neutral design that can be reused for any chronic illness, providing a useful and generalizable foundation for future research and applications that can be tailored to various healthcare needs. By incorporating technology like GPS and considering advancements in machine learning and IOT, home service proposed works can further be improved to offer a more personalized and efficient experience for users.

A study of Recommender systems in Healthcare domain

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ABSTRACT –*The overwhelming amount of healthcare data dispersed over numerous websites on the Internet prevents individuals from finding useful information for improving their well-being. In addition, the abundance of medical information (such as that on medications, diagnostic procedures, and suggested treatments) has made it difficult for medical professionals to make decisions that are patient-focused. These problems highlight the necessity for recommender systems to be used in the healthcare industry to aid in the efficient and accurate decision-making of both end users and healthcare professionals. We give a thorough overview of the literature on healthcare recommender systems in this post. Our article offers insights into recommendation scenarios and recommendation approaches, in contrast to existing related overview papers. Food recommendations, prescription recommendations, health status predictions, healthcare service recommendations, and recommendations from healthcare professionals are a few examples of this.*

KeyWords:Health recommender systems, Drug recommendation Systems, Food recommendation, Healthcare service recommendation, Health status prediction Systems, Healthcare professionals recommendation

1 INTRODUCTION

Over the past few decades, a significant amount of clinical data describing patients' health status (such as doctor reports, test results, and illness treatment plans) has been gathered. The amount of digital information available for patient-centered decision-making has considerably increased as a result. The fact that this digital content is typically scattered across numerous websites makes it challenging for people to locate useful information for enhancing their wellbeing. Recommender systems for medical use should be implemented to close these gaps and aid patients and medical professionals in making better healthcare-related decisions. To help users choose items, recommender systems have been included into social networks, streaming services, and online stores (Felfernig and Gula 2006). In order to better support medical recommendations, these systems, also known as "Health Recommender Systems" (HRS), have recently been widely used in the healthcare industry. In contrast to their predecessors in the same domain (such as medical expert systems), HRS provide a greater personalisation that increases the complexity of provided recommendations and improves users' awareness of their medical condition. These technologies also enhance the patient experience, enhance the patient's health, and encourage the patient to lead a healthy lifestyle. Additionally, they help medical professionals with disease predictions and treatments.

A personalised diet, exercise programme, medication regimen, disease diagnosis, or other healthcare service should be suggested after HRS evaluates the health status of the patient. The accuracy, reliability, and privacy of patient information are of utmost importance to HRS. This is done while sending the appropriate information to patients at the appropriate time. Additionally, these systems are anticipated to reduce the time and effort costs associated with healthcare-related decision making.

Our article offers a more comprehensive view of HRS-supported recommendation scenarios accepted by various carefully chosen studies. End-users (patients and healthy users) and healthcare professionals (such as doctors, nurses, clinicians, or physicians) are the main emphasis of the scenarios that are being explored. Nutritional advice, medications, treatment programmes, disease diagnoses and prognoses, physical activities, and other healthcare services (including assisting patients in finding certified medical professionals or the proper medical care) are all included in HRS. In order to help healthcare providers make more accurate recommendations for patients, HRS uses medical resources.

2 STUDY METHODOLOGY

The methodology used in this study, a bibliographic review, offers a systematic investigation of domain-specific information. Using the terms "health recommender systems," "medicine recommender systems," "recommender platforms in the health domain," and "e-Health systems," we first gathered a number of studies pertaining to HRS. Using additional keywords such as "food recommendation," "nutrition recommendation,"

Emotion Based Music Player Using CNN

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Abstract - Facial expressions give important clues about emotions. Interaction-based computer systems could be crucial in the next generation of computer vision systems. The proposed system is created by combining machine learning algorithms to classify the emotions of the users and play music based on it. In this system, the facial points are extracted and the emotions are classified using a convolutional neural network(CNN) algorithm. Then it compares emotions from pre-defined datasets as accurately as possible. Finally, the music is played based on recognized emotions. An emotion-based music player is a type of music player that uses artificial intelligence (AI) and machine learning algorithms to analyze the user's emotional state and then selects and plays music that matches the user's mood. The goal such a music player is to enhance the user's listening experience by providing personalized and emotionally resonant music. In this paper, we propose an emotion-based music player that uses machine learning algorithms to classify music based on the emotions it evokes. The system takes to classify music into different emotional categories such as happy, sad, surprise, and angry. The user can then choose the emotional category they want to listen to and the music player will generate a playlist accordingly.

Keywords—Emotion, music player, CNN

I. INTRODUCTION

Emotion-based music players are an emerging technology that aims to improve the user experience of listening to music by creating playlists based on the user's current emotional state. These systems typically use a combination of audio and visual cues to determine the user's emotional state and select appropriate music. One approach to building an emotion-based music player is to use convolutional neural networks (CNNs) to analyze facial expressions and determine the user's emotional state. In addition to CNNs, face mesh detection tools like Mediapipe can be used to precisely detect the user's facial features and movements, allowing for even more accurate emotional state analysis.

By combining CNNs and face mesh detection, an emotion-based music player can accurately detect the user's emotional state and select music that matches that emotional state. For example, if the user is feeling sad, the music player could select slow, mellow songs to help them relax and process their emotions. Overall, an emotion-based music player that uses CNNs and face mesh detection has the potential to revolutionize the way people listen to music by tailoring the listening experience to the user's emotional state.

II. EXISTING SYSTEM

Karthik Subramanian Nathan et al. developed an emotional music player for Android devices. The input message is saved as a photograph from the camera or gallery. The image is then transformed into a rectangle representing a face using the Face API. The facial features were obtained using the Viola-Jones (HAAR filter) technique. Microsoft Cognitive Service Emotion API is used to detect emotions. Each emotion is labelled. Songs are classified, and playlists are created for each emotion.

P. Vishali et al. developed an emotion-based music player using PCA. The facial image is given as input. Principal Component Analysis (PCA) is used for feature extraction and emotion classification. Even in noisy images, image patterns may be obtained due to the principal features. Those facial features are called eigenfaces. Eigenfaces denote the similarities between faces. Eigenfaces are extracted from the original image using PCA. Similarly, there will be facial features that differentiate faces. Those are known as fisher faces. They are difficult to implement in this model. After the identification of emotion using PCA, music will be played based on emotion.

Shlok Gilda et al. used CNN for their application. The application recommends music based on the recognised emotion. The emotions are predicted using CNN. OpenCV is used for capturing the face image. They take the facial image's features and train the datasets on Kaggle. Angry, sad, happy, and neutral are the emotions predicted in this application. The music associated with the predicted emotion is played. For music extraction, LibROSA and Aubiobitch are used. The songs are suggested based on the user's mood and preferences.

Krittrin Chankuptarat et al. developed an application that requires hardware such as a smart band and a camera. Heartbeat and facial images are input for the application. A Firebase database is created to store the music. Over 200 songs are stored in the database. The songs are manually differentiated into emotions by the admin. Based on a heartbeat or facial image, the emotion is detected, and a playlist is generated based on the emotion. Angry, happy, sad, and neutral are the emotions predicted by the application. The heartbeat range changes with different emotions. The face detection API of Microsoft Azure is used to identify the

NATIONAL E-CONFERENCE PROCEEDING

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ARTICLE IN PRESS

Materials Today: Proceedings xxx (xxxx) xxx

Contents lists available at ScienceDirect

Materials Today: Proceedings

journal homepage: www.elsevier.com/locate/matpr

Optimization of cylindrical grinding process parameters on austenitic stainless steel 304 using Taguchi based Grey Relational Analysis

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ARTICLE INFO

Article history:
Available online xxxx

Keywords:
Cylindrical grinding
Austenitic Stainless Steel 304
Taguchi's Design of Experiments
Grey Relational Analysis

ABSTRACT

A cylindrical grinding machine is used to grind and form an object's exterior and is generally used in finishing process. Though near-net shape technology is evolving, finishing processes are frequently required to achieve dimensional accuracy and a satisfactory surface quality. Cylindrical grinding machine can operate with different types of shapes, provided the workpiece should have a rotating axis at center. In this study, austenitic SS304 was selected as the material of workpiece. It is used for domestic as well as industrial applications. This research focuses on applying Taguchi technique and Grey Relational Analysis for selecting optimal cylindrical grinding process variables for austenitic stainless steel 304. The process parameters in grinding operation serve as the input factors, the combination of which greatly affects the output responses. The grinding process variables investigated in this research work are workpiece speed, longitudinal feed, transverse feed and flow rate of the coolant. The effect of these grinding factors is analyzed on the performance measures: surface roughness and material removal rate. The experimentation was done based on L_9 orthogonal array generated using the Taguchi technique. Further, optimal grinding process parameters (work speed = 20 m/min, longitudinal feed = 6 m/min, transverse feed = 0.02 mm, coolant flow rate = 1.43 l/min) which satisfy both the responses (surface roughness = 0.395 μm and Material Removal Rate = 189.57 mm^3/s) were predicted using Grey Relational Analysis.

Selection and peer-review under responsibility of the scientific committee of the International Conference on Processing and Characterization of Materials.

1. Introduction

The important needs of the manufacturing sector are quality, dimensional accuracy, production at a low cost, and reduced material waste. To meet those needs, different industries use different machining technologies and processes. As a result, in the engineering sector, machining is the most significant and commonly used industrial processes [1,2]. Machining is essentially required to achieve high tolerances on dimensions and surface finish. Machining is subdivided into turning, milling, drilling, grinding, etc. Grinding is an effective material removal method for hard materials that demand a high level of surface quality and precision. Grinding cylindrical jobs and eliminating metal as small chips is known as the process of cylindrical grinding. The cylindrical grinding method may create a superior finish with high precision and near-dimensions [3,4]. In the process of cylindrical grinding operation, the job is supported in amid both centres after which the process is carried out with the assistance of a grinding wheel. Due to the complicated set-up and high sensitivity of a variety of kinematical, dynamical and geometrical influencing parameters, centre less grinding is hardly used in limited lot manufacturing. Finishing of components demanding good surface finis and high tolerances requires cylindrical grinding[5,6]. Grinding is an expensive process which must be used with ideal parameters as compared to other machining techniques. Grinding, despite its widespread usage in industry, is probably the less understood of the machining operations. The process parameters like machining speed, transverse feed, rate of feed and coolant are the key operational input factors that determine the output parameters, that is, surface roughness, metal removal rate, tool wear and surface damage, among others [7].

In the MILANO RICEN RUM 1 Cylindrical Grinding Machine, [8] I M Chandran et al. attempted to establish an analytical model for surface roughness. An empirical equation linking many process elements has been created, which may be used to pick the best

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https://doi.org/10.1016/j.matpr.2022.10.120
2214-7853/
Selection and peer review under responsibility of the scientific committee of the International Conference on Processing and Characterization of Materials.

Please cite this article as: R. Rekha, S. Vinoth Kumar, V. Aravinth Raj et al., Optimization of cylindrical grinding process parameters on austenitic stainless steel 304 using Taguchi based Grey Relational Analysis, Materials Today: Proceedings, https://doi.org/10.1016/j.matpr.2022.10.120

Key Engineering Materials
ISSN: 1662-9795, Vol. 933, pp 97-106
doi:10.4028/p-19hm0h

Submitted: 2022-04-06
Revised: 2022-07-05
Accepted: 2022-07-06
Online: 2022-10-17

Multi-Objective Optimization of Metal Removal Rate, Dimensional and Profile Accuracy during Drilling of ASTM A516 (Grade70) Steel

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Keywords: Dimensional accuracy, Profile accuracy, Metal removal rate, Drilling, Full factorial method, Artificial Neural Network.

Abstract: The aim of this research work is identification of optimum drilling parameters to increase material removal rate, dimensional and profile accuracy during drilling. ASTM A516 (Grade70) which is a boiler quality plate of 12 mm thickness was considered as the specimen for conducting the experiments. The experiment was done based on full factorial design using 18 experiments generated using Minitab Software. Two levels for tool material and three levels for feed-speed combination and cutting environment were considered. Two runs were carried out for each trial. The metal removal rate was calculated for each hole drilled. The mean result of the two runs of a trial was taken as the result of the trial. The drilled holes were then tested for their dimensional, profile accuracies. With these results in hand the Artificial Neural Network software was trained to predict the optimized input parameters for drilling a hole of required dimensional and profile accuracies and with required metal removal rate.

Introduction

Drilling is an imperative machining operation that is required to be carried out in various machine parts for assembly. It is widely used in industries such as automotive, aeronautical, medical equipments, electrical components etc. The importance of the drilling process is so obvious that constant research is being carried out in order to increase not just the performance of the drilling operation as well as cost effective [1]. During drilling operation, the material is considerably affected by dimensional and profile inaccuracies. Achieving perfection is tedious due to the inaccuracies in connecting the structures through the attachment process. Because of the imperfection, even if it is minor, leakage occurs by means of these fixed joints, which leads to trouble during functioning of the assembled machine structures. Careful selection of the tool, process variables and operating settings can produce high quality holes productively, both traditional and non-traditional drilling methods. The quality of the holes is highly dependent on the drilling process variables and tool material, although the material has a crucial function. Proper selection of the parameters mentioned for a chosen work material would result in reasonable and acceptable well quality at low cost.

The use of multi-objective optimization increases flexibility in choosing the optimal process variables for machining operation [2]. When productivity and surface quality are considered as optimization goals, the best solution for each operation can be found [3]. According to M. Saravanan et.al [4], about 20% deviations in material removal rate and eccentricity were found out in comparison of the results obtained by numerical method compared with that of experimental results. The variations of the drilling parameters achieved using the Genetic Algorithm (GA) approach was 10%. This was found to be considerable compared to the results of numerical method. Surface roughness in deep hole drilling was primarily affected by cutting parameters such as speed, feed, and cutting fluid, in addition to hole depth [5]. Spindle speed and feed value mainly affect the

This edition has been published by Central West Publishing, Australia

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A catalogue record for this book is available from the National Library of Australia

ISBN (print): 978-1-922617-53-8

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Chapter 2

Multi-Attribute Decision Making based Selection of Optimal Combination between different grades of Aluminium based Composites

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Abstract

Due to its abundance in nature, aluminium is widely employed in vehicles, ships, airplanes, cars, electrical wires, and household appliances. It has a significant affinity for oxygen and forms a protective oxide layer on the surface when exposed to air. When aluminium is used to make composites, it has efficient characteristics and can be used in Automobile and Aerospace industries. A composite material is one that consists of two or more constituent materials. It is often referred to as a composition material or composite. These constituent materials each have distinct chemical or physical characteristics, and when combined, they create a substance with characteristics not present in any one of the elements alone. The topic of this study is the selection of the optimal combination between several grades of Aluminum-based Composites using Multi-Attribute Decision Making. This research work is an attempt to select the optimal combination process parameters in aluminium alloy-based Metal Matrix Composites (MMCs) using a novel Multi- Attribute Decision Making (MADM) technique. Initially, Stir Casting, one of the most well-liked and often utilised methods, is employed to create MMCs with natural ceramic (Agricultural waste) reinforcements. After conducting relevant tests, Optimization has been done with MADM (Additive Ratio ASessment - ARAS) method.

Chapter 10

Optimization of Micro Sensor for Pore Pressure Measurement to Detect Landslides

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ABSTRACT

The pore water pressure is detected using piezometer. The Deep Earth Probe (DEP) is used to detect the landslides. The piezometer which is used at present is bulk and costly. The piezometer could be replaced with a low cost, small size micro piezoresistive pressure sensor. The size of pressure sensor reduces by 30 times and cost by 100 times. The size of the diaphragm is $\mathbf{400 \times 400 \times 10\mu m^3}$. The paper provides the optimization of the sensor by varying, diaphragm size, thickness, piezoresistor size, thickness and position. The sensor is numerically simulated using FEA CAD tool, Intellisuite.

10.1 Introduction

This Landslides are one of the major natural hazards that occur, frequently, in different areas of the world. They cause considerable loss of life and property. Landslides cause roughly 1000 fatalities and $4 billion worth of property damage each year worldwide. [1]. In order to facilitate deployments, a standardized design for the Deep Earth Probe (DEP), geophysical sensors mounted on a vertical pipe, and sensor placement techniques at the DEP were created. The following sensors are used in rainfall detection systems to monitor landslides: strain gauges, which attach to the outside of Deep Earth Probes (DEP), rain gauges, which measure the rate of rainfall, dielectric moisture sensors, which detect the volumetric water content in the soil, pore pressure piezometers, which measure the accumulation of pore pressure within the perched water table or within other vari-

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SCOPE OF MILLING PROCESS IN MANUFACTURING SECTOR - RESEARCH REVIEW

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Machining is a process of cutting a material into a desired final shape and size by a controlled material-removal process. Different types of machining process are available in the industries, such as drilling, turning, grinding, rolling, milling, etc. are used to convert the raw materials into finished products Milling is a very flexible machining technique that creates flat and curved surfaces using spinning, multi-edge cutters. Manufacturing industries strive to manufacture high-quality products at a lower price in order to remain competitive in the market. One of the most popular machining methods for producing flat surfaces with quick material removal and high surface quality is milling. Finding the ideal machining parameter values has been the subject of numerous attempts since the turn of the century. Surface roughness, temperature, hardness, and microstructure of the machined components as well as the rate of material removal are examined using output indicators such as spindle speed, feed rate, depth of cut, and geometry as input process parameters Machining parameters are crucial for effective and successful machining. So, in today's industrial environment, it is imperative to optimise machining settings. In this study, a detailed review of various literatures with respect to different types of milling process and optimization are summarized for future recommendations.

Keywords: Machining, Milling process, Optimise machining, Microstructure.

 ISBN NO. 978-93-5777-612-7

Proceedings
of

Second National Conference on Recent Innovations in Mechanical Engineering 2022

RIME'2K22

18th November 2022

Organised by

Department of Mechanical Engineering

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of

2nd NATIONAL CONFERENCE ON RECENT INNOVATIONS IN MECHANICAL ENGINEERING- 2022
(RIME'2K22)

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SPHERE SPLIT PATTERN RISER IN SANDCASTING

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ABSTRACT:

Casting process plays very crucial role in Manufacturing industry to develop components.During Sand casting process, the final metal product may get shrink and forms cavities on theproduct at the time of cooling. However to avoid this, the cylindrical or frustum shape riser isused in the foundry, which is not that much efficient. Achieving more effectiveness bychanging the shape of the riser instead of using these shapes. According to Chvorinov's rule,the sphere shape riser is more effective than any other shape but it is too complicated to use itin the molding process. It is found that, a solution for an easy method to use this sphere shaperiser inthe molding process. By using this method, more effective riser is developed whichavoids shrinkage and cavity on the final metal product produced in sand casting process.

Keywords: Sand casting, Sphere shape riser, Chvorinov's rule, Casting Shrinkage.

RECENT RESEARCH ON UNDERWATER WINDMILL

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ABSTRACT

The analysis on underwater windmill, which is completely similar to a normal windmill, both in principle and working. Except for wind, here ocean currents are the main source of energy production. This falls under the category of renewable energy sources hence depletion of nature is impossible. The initial construction cost of underwater windmill is high but the maintenance cost is moderate, the amount of power that can be produced is up to 700 Kw/grand its efficiency is proven up to 80 % with longer lifetime. It was constructed to work with both inflow and outflow of current from either side of the turbine. Based on various invention, it too has a list of cons to consider, but with the developing technology, they can be turned into pros. Nonetheless it has proven to be a great source of energy producer in the near future since it's such a game changer in the field of energy production without imposing a threat on the nature.

Keywords: Renewable Energy Sources, Underwater Windmill, Turbine, Electrical Energy

EFFECT OF WELDMENTS ON METAL INERT GAS WELDING PROCESS PARAMETERS ON AISI 1018 MATERIAL

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ABSTRACT

The effectiveness of the welding process is crucial for the manufacturing industry to achievecustomer satisfaction. Welded joints have superior mechanical properties in general, especiallywhen compared to screwed joints. Heat energy is important in the joining of materials with (or)without filler rod. Metal Inert Gas (MIG) welding has been used filler rod to join similar/dissimilar material combinations. The AISI 1018 material is used as a welding testspecimen and has many applications in the automotive, aerospace, nuclear, and manufacturingindustries. The input process parameters such as voltage, current, flow rate and the outputresponse is weldment which is determined using vernier height gauge. Taguchi Design ofExperiments (DOE) of L9 Orthogonal Array (OA) has been used for experimentation, withthree levels and three factors. The quality of the weldment is determined by the input processparameters recommended based on customer requirements and satisfaction. From the results ofthis experimental investigations, the S/N ratio is optimized and ANOVA is used to establishthat current is a major dominating parameter in welding of AISI 1018 material.

Keywords: Metal Inert Gas welding, AISI 1018, Weldments, Taguchi Design of Experiments,ANOVA Analysis.

COMPREHENSIVE STUDY ON QUADCOPTER

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ABSTRACT

Drone engineering develop drones based on their knowledge of different branches of engineering, such asaeronautical, electronics and electrical, mechanical and robotics engineering. Drones are now being embraced in a variety of sectors to deliver tangible benefits for engineers the Unmanned Aerial Systems (UAS) are becoming tools that drive greater accuracy in data collection, reduce project costs and improve efficiency. A drone adjusts its yaw by applying more thrust to rotors rotating in one direction. Drones now have many functions, ranging from monitoring climate change to carrying out search operations after natural disaster photography, videography and delivering goods. The most controversial use is by the military for reconnaissance, surveillance and targeted attacks. It has two basic functions flight mode and navigation. Drone use alternative power sources like hydrogen fuel cells and hybrid gas-electric generators have been used to dramatically extend endurance because of the increased energy density of both hydrogen and gasoline, respectively. Theevolution of complementary technologies like 5G, augmented reality and computer vision is expected to drive drone market growth and improve drone communication and intelligence.

Keywords: Unmanned Aerial Vehicle (UAV), Quadcopter

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Jai Shriram Engineering College was endowed by Shenthil Velevan Trust in the year 2009 with a motto of equipping and implanting the seed of higher education blended with communal harmony to the rural community in and around the Textile City. JSREC reinforces to impart knowledge, teamwork innovation,entrepreneurship, courage, sacrifice and duty which are innards of a meaningful life. Here we look at education as a complete experience. Not just as academics and it laid a pavement for JSREC to a world-class education environed with an eco-friendly greenery rich campus life.

JSREC is also promoted by leading industrialist having 3 major manufacturing divisions in Coimbatore with international reputation and hence we stand forth in creating great minds with optimal advantage in terms of advanced technical knowledge and skills in the distinct aspects of intellectual growth and development JSREC is renowned for its Industry Academic Interaction.

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ABOUT THE DEPARTMENT

The department was started in the year 2009 for the undergraduate program in B.E. Mechanical Engineering with an intake of 60 students. The department offers high quality education to the students through very good infrastructure, laboratories, and faculty and by means of exposure to latest technologies.

The department has highly qualified and well experienced teaching staff, who take extreme care for the development of the careers of the students. The department is very much oriented towards research and development as well as in consultancy.

ABOUT THE CONFERENCE

Jai Shriram Engineering College, Tiruppur is one of a pioneer in the field of Technical Education happy to declare its National Conference on Recent innovations in Mechanical Engineering (RIME2'k22) on November 18, 2022 sa platform for intellectuals from anousuniversibes, research institutes, terprises and experts across the globe to gather and exchange their ideas and findings of recent developments in Mechanical Engineering This conference is also promulgated through presentations basic expeditions applcations and case studies in the broad area of Mechanical Engineering.

RIME 2k22 acts as a forum for the academic as well as industrial community to address the opportunities & challenges and to discuss the scope for future research The conference will bring together academicians research scholars, engineers and scientists to exchange and share their expertise. The conference will provide an opportunity for the presentation of new advances in theoretical and experimental research in the fields of Mechanical Engineering. It will also focus on emerging fields Like Energy, Robotics, Mechatronics, Automation, CAD/CAM, Composite Materials, Green Manufacturing and Nanotechnology. These are expected to create new job opportunities for Mechanical engineers in our country.

ISBN 978-8-19-551315-4

Department of Science and Humanities

SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING, KALAVAKKAM-603110

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING & SSN RC

Certificate of paper presentation

This is to certify that

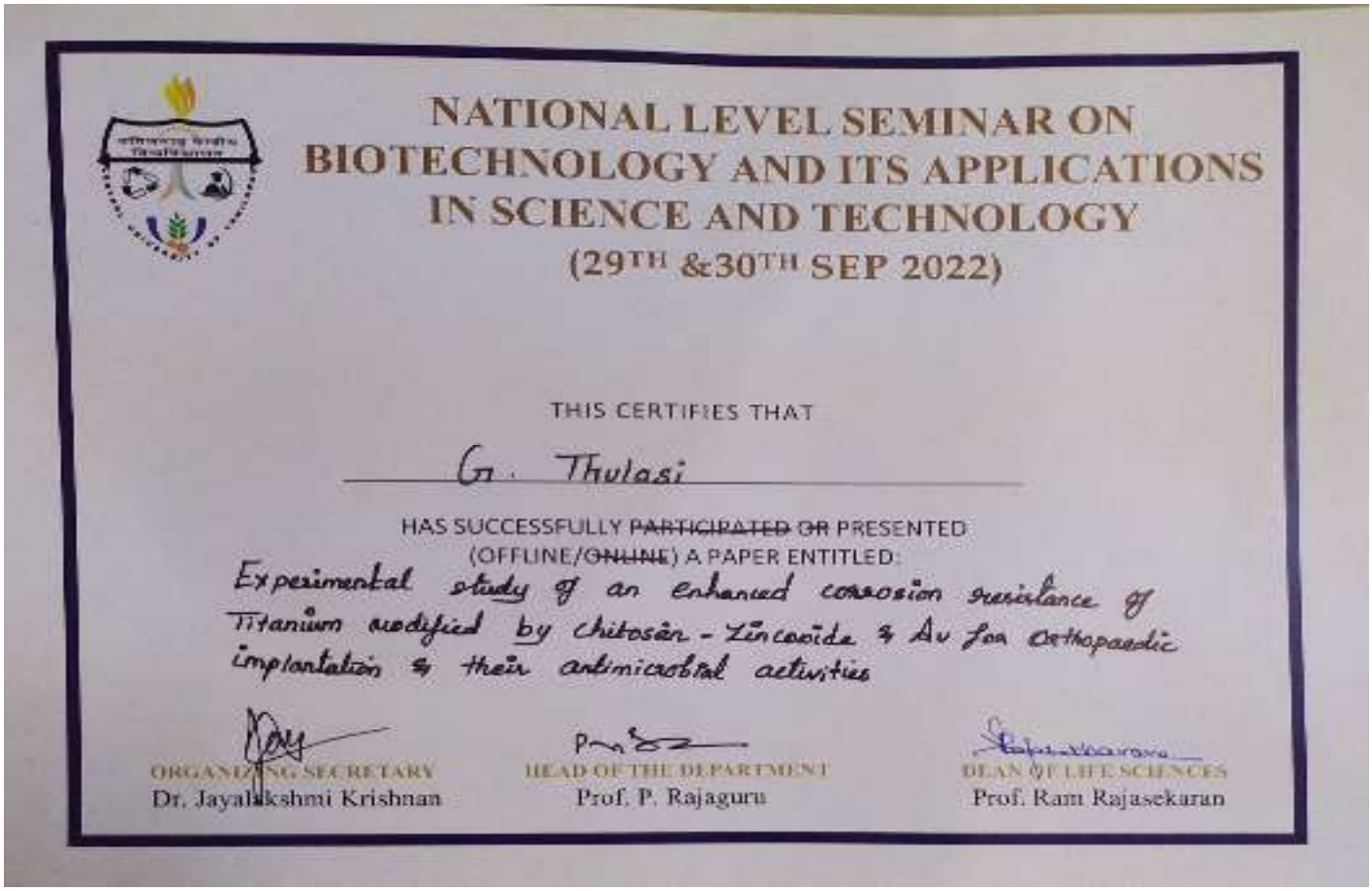
Dr.V.Balamurugan of Saranathan College of Engineering

has presented a paper entitled

"Synthesis, Characterisation, Structural, Morphological, Optical and Antibacterial Properties of Lanthanum Ions Doped CeO2 Nanoparticles with Aloe Vera Leaf Extract"

in the 2nd International Conference on "Sustainable Materials and Technologies for Bio and Energy Applications SMTBEA-2022", during 13-15th, July 2022 Organized by SSN Institutions, Kalavakkam, Chennai-603110, in association with Elavenil Science Association & Indian Science and Technology Association.

Convener Convener Dean, Research



NATIONAL LEVEL SEMINAR ON BIOTECHNOLOGY AND ITS APPLICATIONS IN SCIENCE AND TECHNOLOGY

(29TH &30TH SEP 2022)

THIS CERTIFIES THAT

G. Thulasi

HAS SUCCESSFULLY ~~PARTICIPATED~~ OR PRESENTED

(OFFLINE/~~ONLINE~~) A PAPER ENTITLED:

Experimental study of an enhanced corrosion resistance of Titanium modified by chitosan - Zinc oxide & Au for orthopaedic implantation & their antimicrobial activities

ORGANIZING SECRETARY Dr. Jayalakshmi Krishnan

HEAD OF THE DEPARTMENT Prof. P. Rajaguru

DEAN OF LIFE SCIENCES Prof. Ram Rajasekaran

NATIONAL LEVEL SEMINAR ON BIOTECHNOLOGY AND ITS APPLICATIONS IN SCIENCE AND TECHNOLOGY

(29TH &30TH SEP 2022)

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Biosimilars: An Overview

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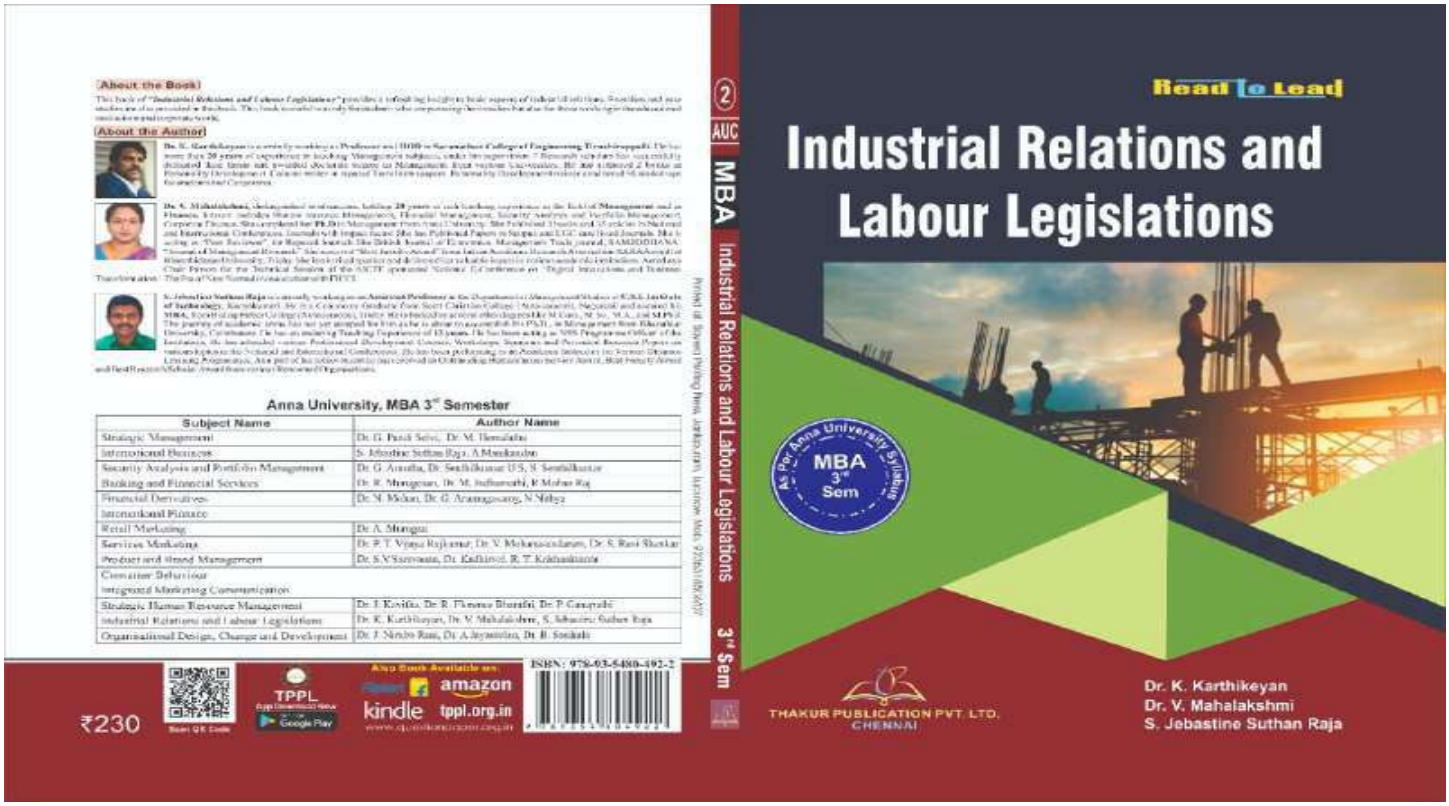
Prof. P. Rajaguru

DEAN OF LIFE SCIENCES
Prof. Ram Rajasekaran

Department of Master of Business Administration



MBA 012 - A STUDY ON CUSTOMER BASED BRAND EQUITY IN AMONG APPARELS YOUNG MALE ADULTS IN TRICHY CITY

[1]M.Anubama, [2]V.Mahalakshmi, [3]R.Murali
[1]PG Scholar [2]Assistant Professor [3]Assistant Professor
Department of Management Studies
[1&2]Saranathan College of Engineering , Trichy [3]St.Joseph's College (Autonomous), Tiruchirappalli

ABSTRACT:

India is witnessing change in life styles of large section of the population. The need to understand the emerging markets and consumers has become a big challenge for the corporate world especially in creating and managing a powerful brand. By developing a powerful brand, corporate can establish 'brand equity' and the equity assists firms in a variety of ways to manage competition and to maintain market share. Due to the globalization process, Indians are getting attracted to readymade dresses, particularly Multinational brands. Buying behavior of men on branded shirts is changing one. Number of people visits the showroom with a brand in mind because the quality and comfort of that brand are suitable for them. It becomes important for the marketers to understand these relationships for successful design and execution of brandingstrategies. The present study investigates men's perception towards branded shirts and to ascertain the brand of shirt most preferred by respondents in Trichy city. The study also examines consumer's perception towards retail garments showrooms in Trichy city. The study is a descriptive study. Primary data was collected with the help of structured questionnaire administered to 100 male respondents in Trichy city and the type of sampling was convenient sampling. Pilot study was conducted and the necessary additions and deletions were made in the questionnaire. To check the reliability and validity of the data collected Cronbach's alpha test was administered and the value of Cronbach's alpha is 0.932. Tools used for the analysis are Chi-square and Multiple Regression. Based on the test result some of the relevant finding were derived that will be use full to find the factors that really influences men's towards particular brand of shirts. The manufactures can come out with suitable strategies to overcome the problems.

BHARATH NIKETAN ENGINEERING COLLEGE

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ICESTEM '23

CERTIFICATE

This is to certify that Mr. / Ms. S. Syed Mutthaliff, AP, MBA, SCE, Trichy has presented a paper entitled A Study On Influence of Social Media On Online Buying Decision with special Reference To Management Students At Trichy in the International Conference on **"Emerging Trends in Science, Technology, Engineering & Management '23"** on 28th & 29th April 2023.

CONFERENCE CHAIR

PRINCIPAL

CHAIRMAN

MBA 013 - A STUDY ON INFLUENCE OF SOCIAL MEDIA ON ONLINE BUYING DECISION WITH SPECIAL REFERENCE TO MANAGEMENT STUDENTS AT TIRUCHIRAPALLI CITY.

[1]C.Aishwarya, [2]S.Syed Muthaliff
[1]PG Scholar, [2]Assistant Professor
Department of Management Studies
Saranathan College of Engineering, Tiruchirappalli.

ABSTRACT:

Social Media Marketing is an umbrella term that can be described as the utilization of social media platforms as marketing tools. According to Weinberg (2009), he refers social media marketing as leveraging the 'social' through the 'media' to 'market' businesses' constituents; in other words, it is a process in empowering individuals to promote their websites, products, and/or services through online social channels, to interact with and to tap into a much larger community that may not have been available via traditional advertising channels. The main objective of this research is to study the effectiveness of social media on online buying decisions among the management students. Effectiveness here denotes the impact of social media advertising on the purchase decision of the students of Anna University affiliated in Tiruchirappalli City, Tamilnadu.

The objective of the study is to identify which students are mostly influenced by online purchasing reasons that trigger students to purchase online and types of social media that are mostly used by the students in Trichy. The source of data involves both primary and secondary data. The period of study in this research is undertaken for 2 months with the sample size of 100. Descriptive research was used in the research since it involved survey to describe the state affairs as it at present. The questionnaire used in this study is comprised of two paths. Tools used for analysis is Factor Analysis & Multiple Regression The result of the study reveals that it would be a better idea to recommend businesses about the best Social Media to be utilized so they can benefit from them to enhance the purchase process and products to satisfy student needs. Finally, students are encouraged to purchase particular products online using appropriate Social Media.