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COLLEGE OF ENGINEERING
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CRITERION: 3.3.3

Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during the year 2022-23

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Sl. No.	Name of the teacher	Title of the paper / Book / Book chapter	Name of the conference / Publisher	ISBN/ ISSN number of the proceeding	Name of the publisher
CIVIL					
1	K.Arun,R.Saravanan	Construction Materials and Technology	Suchitra Publications	978-81-953605-6-7	Suchitra Publications
2	D.Sharmila	Assessment of groundwater quality index in Kurungulam for drinking purpose	RACME 2023 - Proceedings	978-93-85057-31-1	Kings College of Engineering
3	R.Saravanan	Experimental investigation on structural behaviour of lightweight bamboo reinforced concrete	RACME 2023 - Proceedings	978-93-85057-31-1	Kings College of Engineering
4	R.Sundharam	Experimental investigation on bitumen road with waste plastic and crumb rubber	RACME 2023 - Proceedings	978-93-85057-31-1	Kings College of Engineering
5	K.Arun	Experimental investigation on partial replacement of fine aggregate in concrete using eco-friendly plastic sand aggregate	RACME 2023 - Proceedings	978-93-85057-31-1	Kings College of Engineering
6	R.Ramchandar	Experimental investigation on waste water treatment	RACME 2023 - Proceedings	978-93-85057-31-1	Kings College of Engineering
7	K.Elakkiya	Experimental investigation of partial replacement of cement and sand in paver block by using corn stalk and plastic waste	RACME 2023 - Proceedings	978-93-85057-31-1	Kings College of Engineering
8	D.Nandakumar	Development of low cost bio-mineralized bacterial baggage ash bricks	RACME 2023 - Proceedings	978-93-85057-31-1	Kings College of Engineering
9	D.Nandakumar	Prediction of Inhibition Efficiency of Organic Inhibitor on Mild Steel Corrosion Using Artificial Intelligence	ICCRCBM'23 Proceedings	--	NIT Surathkal
CSE					
10	Dr.S.M.Uma	Yoga posture analysis using deep learning techniques			Kurinji College of Engineering
11	Ms. K. Abhirami	Multilevel password authentication using bio metric verification for smart ATM	NCRTTC'22 Proceedings		Arasu Engineering college

12	Ms. K. Abhirami	Protection Of Crops from Wild Animals in Forest Area Using Artificial Intelligence Based Surveillance	NCRTTC'22 Proceedings		Arasu Engineering college
13	Ms. S. Puvaneswari	Secured application for E-Ballot using two factor authentication	NCRTTC'22 Proceedings		Arasu Engineering college
14	Ms. S. Puvaneswari	A smart android Application for real time accident alert			Kurinji College of Engineering
15	Ms. R. Sugantha Lakshmi	Block Chain based certificate validation			Kurinji College of Engineering
16	Ms. B. Sangeetha	Skin disease detection based on image processing technique- android application			Kurinji College of Engineering
17	Ms. G. Chandraprabha	Deep Learning based plant disease prediction using leaf images			Kurinji College of Engineering
18	Mr. M. Arun	Tamil Voice Assisstant for bus schedule			Kurinji College of Engineering
19	Mr. M. Arun	Effective Emergency doctor finding system - APP			Kurinji College of Engineering
20	Ms. R. S. Karthiga Ms. D. R. Saranya Ms. S. Priyadharshini	Study of several tools in big data analytics	NCRTTC'22 Proceedings		Arasu Engineering college
21	Ms. D. R. saranya Ms. S. Priyadharshini	Search engine development to enhance user communication	NCRTTC'22 Proceedings		Arasu Engineering college
22	S.M.Uma , K.Abhirami, R.Sugantha Lakshmi, S.Puvaneswari	Lung Cancer Disease Prediction using CNN algorithm	NCRACE"2023-Proceedings	978-81-962669-8-1	SRM TRP Engineering College, Trichy
23	R. Sugantha Lakshmi	Blockchain based certification validation system	Prodeedings of NCRTESM	--	Kurunji college of Engg and Technology
24	R. Sugantha Lakshmi	Blockchain based disk space rental system		978-93-91977-29-0	NIT Puduchery, karaikal
25	R. Sugantha Lakshmi	Cyber pulling detection on social media		978-93-91977-29-0	NIT Puduchery, karaikal

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ICRACME23-CE006	**Delineation of Groundwater Potential Zone Using Remote Sensing and GIS Techniques in Modjo River Catchment, Central Ethiopia** *Debisa Debela ,Shankar Karuppannan* *Adama Science and Technology University, Adama, Ethiopia*

Groundwater is a precious resource to a limited extent. A groundwater investigation needs a large volume of multidisciplinary data from various sources. Integrated Remote Sensing and GIS can provide the appropriate platform for convergent analysis of diverse data sets for decision-making in groundwater exploration. The present study adopted an integrated approach with remote sensing, Geographic Information Systems (GIS) and more traditional fieldwork techniques to map the groundwater potential sites in the central rift valley area of the Northern Modjo River catchment. Digital image processing of enhanced color from Landsat ETM+ was interpreted to produce thematic maps such as lithology, land use/cover, and geomorphology. Contours and drainage lines were digitized for slope and drainage density mapping. GIS analysis of distance for density for drainage, the slope for elevation, and reclassification was done for each factor map. Digital Elevation Models (DEM) derived from contours and acquired in the Shuttle Radar Topographic Mission (SRTM V-3) was compared in relation to drainage extraction, landform mapping, and catchments delineation. All the information layers are integrated through GIS analysis, and the criteria for groundwater prospective zones mapping are defined. The weighted overlay method is followed to delineate prospective groundwater zones. Spatially the very good and good categories are distributed along with plain geomorphic units, less dense drainage density, and where the lithology is affected by secondary structure and having interconnected pore spaces. Groundwater potential zones demarcated through the model are in agreement with borehole data collected from the area. The results demonstrate that the integration of remote sensing, GIS, traditional fieldwork, and geomorphology provide a powerful tool in assessing and managing water resources and the development of groundwater exploration plans.

Keywords: Groundwater potential zones, RS & GIS, Weighted overlay, Modjo River Catchment

ICRACME23-CE007	**Assessment of groundwater quality index in Kurungulam for drinking purpose** *D.Sharmila, R.Rengeswari, R.Madhumitha, M.Monika* *Kings College of Engineering, Pudukkottai*

This paper is about the assessment of groundwater quality index in kurungulam for drinking purpose. Groundwater quality assessment is necessary for observing the suitability of water for various purposes. So many studies have been carried out for the groundwater quality assessment using different techniques. The assessment of groundwater suitability for drinking purpose is needed for groundwater sustainability as a main source for drinking. The Water Quality Index (WQI) is an approach to identify and assess the drinking groundwater quality suitability.

ICRACME23-CE021	**Experimental investigation on structural behaviour of lightweight bamboo reinforced concrete** *R.Saravanan, B.Agalya, S.Divya, T.S.Janani* *Kings College of Engineering, Pudukkottai*

Bamboo is cheaper reinforcing material that can be used in concrete to reduce the cost of construction and it is easily available material through the world. Bamboo is natural, economical and lightweight material for reinforcement as compared to steel reinforcement in residential building. Aiming to mitigate this concern a sustainable, renewable, eco friendly material like bamboo has been used as substitute to steel in the present work. To reduce the use of steel in construction this project concentrate on the alternate of steel reinforcement to bamboo reinforcement. Bamboo is frequently referred as a highly renewable and high-strength alternative material to timber and, occasionally as a 'strong-as-steel' reinforcement for concrete. The high rate of biomass production and renewability of sustainably managed bamboo plantations are undeniably key benefits of bamboo.

Keywords: Bamboo, reinforcement, light weight, sustainable, concrete

ICRACME23-CE022	**Experimental investigation on bitumen road with waste plastic and crumb rubber** *R.Sundharam, S.Arunprasad, S.Santhosh, R.Vimal* *Kings College of Engineering, Pudukkottai*

The use of waste materials like plastics and rubber in road construction is being increasingly to encouraged so as to reduce environmental impact. Plastics and rubbers are both of them. . The plastic waste quantity in municipal solid waste is increasing due to increase in population and changes in life style. Similarly most tyres, especially those fitted to motor vehicles, are manufactured from synthetic rubber. Most of the tyres not possible recycle them. Disposal of both is a serious problem. At the same time, continuous increase in number of vehicles emphasizes on need of roads with better quality and engineering design. This waste plastic and rubber can be used to partially replace the conventional material which is bitumen to improve desired mechanical characteristics for particular road mix. In the present study, a comparison is carried out between use of waste plastic like plastic bottles and crumb rubber (3%, 4.5%,6%,7.5%,9%by weight of bitumen) in bitumen concrete mixes to analyze which has better ability to modify bitumen so as to use it for road construction.

Keywords: Tyre rubber, solid waste, recycling, coarse aggregate, bitumen

ICRACME23-CE023	**Experimental investigation on partial replacement of fine aggregate in concrete using eco-friendly plastic sand aggregate** *K.Arun, M.Jayaseelan, S.Anbumani, M.Arunkumar* *Kings College of Engineering, Pudukkottai*

In our day to day life conventional and recyclable materials play a major role due to its various benefits to the environment. In such way waste plastic materials were used in our project as a replacement of fine aggregate in concrete. Increasing consumption of various types of plastic products is one of the most important challenges in environmental protection. Large quantities of plastic waste and low biodegradability of these quantities negatively affect the environment. All types of plastic used by humans in daily life eventually becomes waste; several tons of these plastic wastes require large areas of land for storage and cannot be fully recycled at once. Every year, approximately 6.5 billion tons of plastic waste and discarded rubber is generated globally; the disposal of these plastics poses a considerable threat to the environment due to their long degradation periods. From different perspectives, waste reuse is important because, it helps to recycle and conserve energy in the production process, reduces environmental pollution, and helps sustain and conserve non-renewable natural resources. In this paper, eco friendly plastic sand aggregates are used as a partial replacement of fine aggregates in M20 concrete and results are discussed.

Keywords: Fine aggregate, plastic waste, waste disposal, recycling, eco-friendly concrete

ICRACME23-CE024	**Experimental investigation on waste water treatment** *R.Ramchandar, P.Stalin, J.Premkumar, N.Jayachandran* *Kings College of Engineering, Pudukkottai*

Treatment of waste water involves a variety of methods. Biological treatment using Aerobic Activated Sludge process has been in practice over a century. Conventional Activated Sludge Process (ASP) is the most common and oldest bio treatment process used to treat municipal and industrial waste water. Typically waste water after Primary Treatment i.e. suspended impurities removal is treated in an activated sludge process based biological treatment system comprising Aeration Tank followed by Secondary Clarifier. The Aeration Tank is completely mixed Bio Reactor where specific concentration of biomass (measured as mixed liquor suspended solids) (MLSS) is maintained along with sufficient Dissolved Oxygen (DO) concentration (typically 2 mg/l) to effect bio degradation of soluble organic impurities measured as Biochemical Oxygen Demand (BOD 5 days). The Hydraulic Retention Time (HRT) is varied in the range 3 - 8 hrs. The maximum BOD removal efficiency obtained was 93.7% and turbidity removal efficiency was 87.6% in the 8 hrs HRT.

ICRACME23-CE025	**Experimental investigation of partial replacement of cement and sand in paver block by using corn stalk and plastic waste** *K.Elakkiya, P.Sathya, S.Abirami, M.Rubika* *Kings College of Engineering, Pudukkottai*

A large number of plastic wastes have been collected from several places such as tourist and public places etc., High density polyethylene bags are collected, cleaned, and used as a replacement for cement in the manufacturing of Paver Blocks. Plastic waste is available in large quantity and hence the cost factor comes down. When we having waste plastic then we can use as reuse, recycle and reduce. Cornstalk ash is one of the most abundant, renewable and green supplementary cementitious materials, which is an effective approach to decrease the amount of cement in concrete structures for reducing CO_2 emission. Concrete is the most widely used material in the world. Therefore it is essential to minimize the effects of this on the environment. By the production of cement a large volume of $co2$ is emitted.

ICRACME23-CE026	**Development of low cost bio-mineralized bacterial baggage ash bricks** *D.Nandakumar, R.Kuralarasan, F.Daniel Navis, R.Karthikeyan* *Kings College of Engineering, Pudukkottai*

In this study, we utilize different industrial waste materials. The raw materials lime, sugarcane bagasse ash, bacteria are added with varying percentage to produce bio bricks. The lime reacts with silica to form hydro (di) calcium silicates that bind the brick and provide high dimensional stability. In the manufacturing of bio bricks using MICP, Sugarcane bagasse ash as a principal raw material. Sugarcane bagasse ash is a tree-free renewable resource. By using sugarcane bagasse ash we can manufacture a 'Greener' brick to the environment. The advantage of using sugarcane bagasse ash (SBA) helps to improve the quality of the brick and maximum compressive strength can be attained. Bio bricks is one such material which is cost effective and it has the potential to be a sustainable one.

Experimental Study On Effect Of Dracaena Trifasciata As Green Corrosion Inhibitor In Steel Reinforced Cement Concrete

R. Malathy[1], *, D. Nandakumar[2], B. Sakthivellan[3], R. Amirthaa[4]

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Abstract. Due to the creation of stable chemical oxides, which speed up corrosion rates, corrosion is a natural process that can harm structures. Inorganic inhibitors, though they can also assist prevent corrosion, can also include toxic substances. We did a research study employing an organic inhibitor that is natural, eco-friendly, biodegradable, and reasonably priced to address this problem. In order to evaluate its effectiveness as an environmental corrosion inhibitor on Tor steel in a 1M H_2SO_4 acidic medium solution, we conducted a targeted test on Dracaena Trifasciata Leaf Extract (DTLE) at a concentration of 30 ppm. To evaluate the efficacy of the DTLE inhibitor, we compared the outcomes of our corrosion, surface, and spectroscopic experiments (including weight loss, Half-cell, accelerated corrosion test, SEM, EDX, AFM, and FTIR). According to our findings, a thin layer of inhibitors that contained S, N, O, and P as well as phytochemicals such alkaloids, tannins, flavonoids, and steroids formed on the steel surface.

Graphical Abstract:
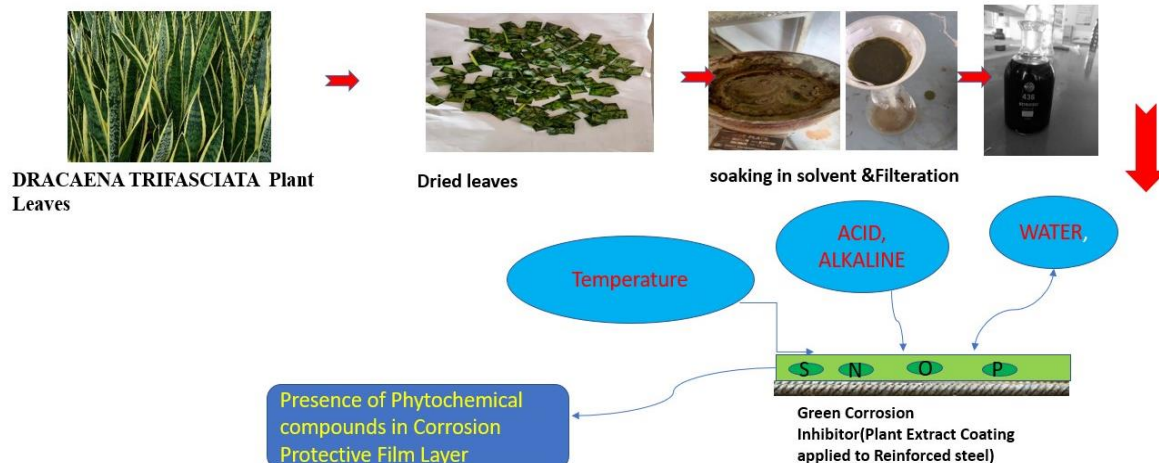
1. Introduction

Corrosion is a natural, unavoidable phenomenon in which metals undergo chemical and electrochemical reactions with their surroundings to change into more stable forms such oxides, hydroxides, and sulphides [1]. The corrosion of tor steel, which is frequently employed in reinforced concrete structures, is particularly prone [2]. Corrosion inhibitors is accustomed to impede the

corrosion reaction and lower the rate of corrosion [3] in order to combat this. Yet, non-toxic and sustainable substitutes for

International Conference on Climate Resilient Construction and Building Materials (ICCRCBM – 2023)
& Prof. Leon Black and Prof. Biswajeet Bhattacharjee Symposium
March 3rd – 5th, 2023

To,   **Date**: 24/01/2023

"R. Malathy[1], D. Nandakumar[2], B. Sakthivellan[3]"

Email ID: "Sakthi.bjn@gmail.com"

Sub: Acceptance of your abstract

Ref: Abstract ID: CRCBM_074   Date of submission: 23/01/23

Dear Sir/Madam,

I am glad to inform you that the review committee has accepted your abstract of your paper titled "**Experimental Study On Effect Of Dracaena Trifasciata As Green Corrosion Inhibitor In Steel Reinforced Cement Concrete**" to be presented for the International Conference on Climate Resilient Construction and Building Materials (ICCRCBM 2023) at National Institute of Technology Karnataka, Surathkal during March 3rd - 5th, 2023.

On behalf of organizing committee, I invite you to participate in this conference. Kindly confirm your participation by submitting the full-length paper and also the registration fees. The guidelines for submission of full-length paper is provided in the link below. The last date for submission of full-length paper is till **February 20th 2023**.

Click on the below link for the template of the full-length paper.
https://docs.google.com/document/d/1VWDFnE1rI7B1cQ-b4JtmjfLao55WG1va/edit?usp=share_link&ouid=104963824282455562740&rtpof=true&sd=true

Look forward to seeing you at NITK Surathkal.

Thanking you with best regards

Bibhuti Bhusan Das
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NITK Surathkal, Mangalore - 575 025, Karnataka, India.
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Technical Paper

Prediction of Inhibition Efficiency of Organic Inhibitor on Mild steel Corrosion using Artificial Intelligence

Authored By

R. Malathy, D. Nandakumar, R. Priyadharshini, R. Amirthaa, S. Rahul, T. Kamaleswaran, B. Sakthivellan

Presented By

D. Nandakumar

at International Conference on

Climate Resilient Construction and Building Materials

organized by the Sustainable Construction and Building Materials Laboratory,
Department of Civil Engineering

from 3rd – 5th March 2023

Dr. Salim Barbhuiya	Dr. Bibhuti Bhusan Das	Prof. Venkatesh Kodur	Prof. Bishwajit Bhattacharjee
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(NCRTTC'22)

On

01-JUNE-2022

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Multilevel Password Authentication Using Bio-Metric Verification for Smart ATM

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Abstract- The importance of security in the authentication process as well as the increase in threat level posed by such malware has attracted many researchers to the field. Many attacks are successful in accessing social network accounts since the current password-based authentication paradigms are not efficient and robust enough as well as vulnerable to automated attacks. The simplest alternative is complementing the single factor (password-based) authentication process with additional identification elements, such as one-time PIN codes, generated by the user's own device (e.g. the smartphone) or received via SMS. In this project, a novel method using three layer based authentication is proposed to address the problem of shoulder-surfing attacks on authentication schemes. First layer based on biometric based authentication system, which provides new solutions to address the issues of security and privacy. So implement real time authentication system using face biometrics for authorized the person for ATM system. Second layer provide OTP verification with reverse processing. Then implement PIN-based authentication method that operates on ATM Application. Hybrid keypad uses the technique to blend two keypads with different digit orderings in such a way, that the user who is close to the device is seeing one keypad to enter the PIN, while the attacker who is looking at the device from a bigger distance is seeing only the other keypad. The three layer authentication process enabled when user login into the application and also when a transaction is done.

NCRTTC 135

Protection of Crops from Wild Animals in Forest Area Using Intelligence Surveillance

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Abstract- In the case of farmlands or agricultural lands surveillance is very important to prevent unauthorized people from gaining access to the area as well as to protect the area from animals. Implementation of animal detection in farming can be used to prevent the wild animals from entering the farm fields, thereby reducing the damage caused by them to the property and the people working there. This would be of great relief to farmers since as per the reports by the All India Kisan Sabha, the loss due to these damages is considered high and the attacks are increasing in number every year. Animal detection can be implemented using computer vision and machine learning. It will help in detecting and identifying the animal which tries to enter the field. The details which are collected in turn are sent to field owners and other officials through an Hardware. They could make use of these details to take necessary actions to prevent the damage that could be caused by these animals which otherwise would be of great difficulty. Index Terms: Contour, Dataset, Support vectors, Instance, Classification, Feature. This system helps us to keep away such wild animals from the farmlands as well as provides surveillance functionality.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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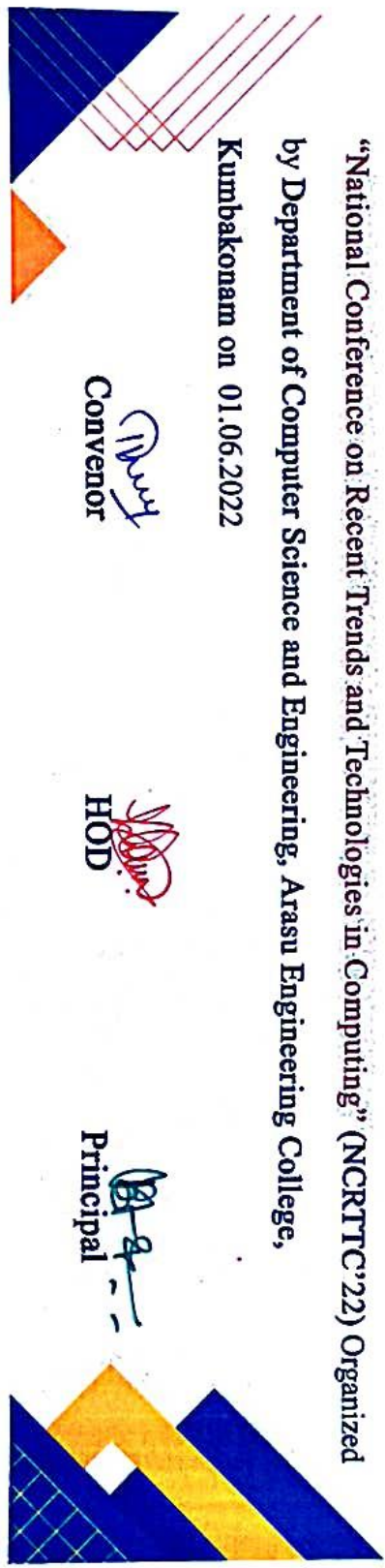
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Block chain Based Certificate Validation System

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Abstract- During the course of education, the students achieve many certificates. Students produce these certificates while applying for jobs at public or private sectors, where all these certificates are needed to be verified manually. There can be incidents where students may produce fake certificate and it is difficult to identify them. This problem of fake academic certificates has been a longstanding issue in the academic community. This problem can be solved by storing the digital certificates on the Block chain. The Block chain technology provides immutability and publicly verifiable transactions, these properties of Block chain can be used to generate the digital certificate which is anti-counterfeit and easy to verify.

Skin Disease Detection Using Image Processing – Android Application

B.Sangeetha[1], T.Sivaranjani[2], S.Sneka[3], K.Sowmiya[4]

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Abstract- Skin diseases are most common form of infections occurring in people of all ages. As the costs of dermatologists to monitor every patient is very high, there is a need for a computerized system to evaluate patient's risk of skin disease using images of their skin lesions. It requires dataset of unhealthy skin images. This system designed to detect the skin disease from unhealthy images. Pre-processing of the images will be compared by finding the difference in threshold value. The difference in threshold value will be put forward in the decision-making against suspected unhealthy skin that being detected. Android-based mobile applications have been successfully created, and it is able to detect the skin disease image. However, based on detection, it is providing a suggestion of the disease. The system uses color image processing techniques K-means clustering and color gradient techniques to identify the diseased skin. In our project, we present a completely automated system of dermatological disease recognition through lesion images, a machine intervention in contrast to conventional medical personnel based detection.

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Deep Learning Based Plant Disease Predictions Using Leaf Image

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[1] Assistant Professor, Department of Computer Science and Engineering,

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ABSTRACT— Accurate diagnosis of leaf disease is a complex challenge faced by Farmer during the growth and production stages of leaf. In order to address this problem, This paper proposes a method based on K-means clustering and an improved deep learning model for accurately diagnosing common diseases of leafs an recommendation with fertilizer. First, To diagnose three diseases, Use the K-means algorithm to cluster sample image and then feed them into the improved deep learning model. This paper investigate the impact of various K values (2,4,8,16,32 and 64) and models(VGG/16,ResNet 18,inception V3,VGG-19 and the improved deep learning model) on leaf disease diagnosis.

KEYWORDS— ImageProcessing, Deep Learning, Data science.

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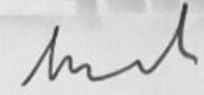
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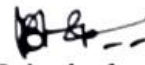
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NCRTTC 124

Study of Several Tools in Big Data Analytics

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Abstract— The field big data has wonderful changes in the last few years. Data are collected very massive amount and cheaply through network devices such as mobile, camera, microphone, software logs etc. Information is coming various sources and also the nature of the information is different. It is very difficult to perform with very huge data sets and different nature by using traditional data application software techniques. For many field we need to take out the valuable information from enormous and noisy data sets. In this paper we analyses the characteristics among four different tools and the comparison value is very useful to determine the efficient analytic tool. Based on the value which made user to select the best tool for to advance the performance of big data in a easiest way.

Index Terms— Effective analytical tool, Software techniques, Traditional data

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NCRTTC 123

Search Engine Development to Enhance User Communication

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Punalkulam.

Abstract: Search Engine Optimization (SEO) is important for websites to improve the rank for search results and get more page views requested by the user. A search engine ranks provide the better and optimized result to user, which will help them to view the popular page among the number of pages available in the search results. Apart from this search engine ranking, it also enables the websites to compete with other rival's website as each website owner expects to see their own website on the list before other's websites. This paper puts forward idea about SEO principles and basic strategies. It also expresses different techniques that are employed by search engines to improve its results. In addition, it presents the observation section, which gives the comparative analysis of SEO techniques. Update concepts sent to concern SEO search member.

Keywords: Search Engine Optimization (SEO), Search engine ranking.

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LUNG CANCER DISEASE PREDICTION USING CNN ALGORITHM in the 2nd National Conference on

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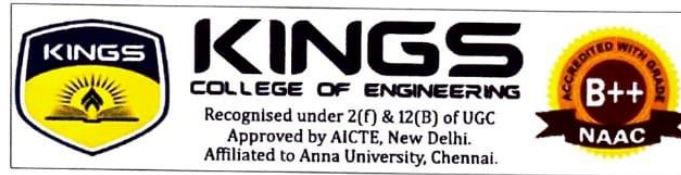
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Title: .......HEALTH....CARE.......SUPPORT.......SYSTEM....FOR.....DISEASE.....DIAGNOSIS....USING. ...NEURAL...NETWORK.....TECHNIQUE...

Dr. A. Albert Martin Ruban
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Dr. S. Sivakumar
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Title: INTEGRATION...OF...BLOCK..CHAIN..TECHNOLOGIES...IN...HEALTH.CARE.............. .SYSTEMS..

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Title: STRESS...DETECTION...IN....HEALTH.CARE.....SYSTEM.................................. ....

Dr. A. Albert Martin Ruban
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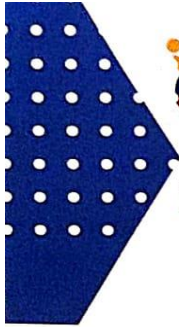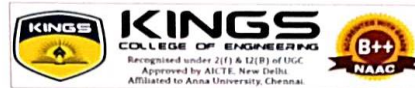**International Conference on Computing, Communication and Control (IC4)**

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Title: .ANALYZING AND SYNTHESIZING IN EARLY PREDICTION OF CARDIAC ARREST........... ..USING MACHINE LEARNING BASED ON A MULTILAYERED INTEGRATIVE FRAMEWORK SURVEY...........

Dr. A. Albert Martin Ruban
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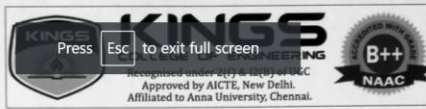
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Title: ....DETECTION......OF NUMBER PLATE AND HELMET VIOLATION......USING........ .DEEP.....LEARNING ALGORITHM...

Dr. A. Albert Martin Ruban
Convener

Dr. S. Sivakumar
Publication Chair

Dr. J. Arputha Vijaya Selvi
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International Conference on Computing, Communication
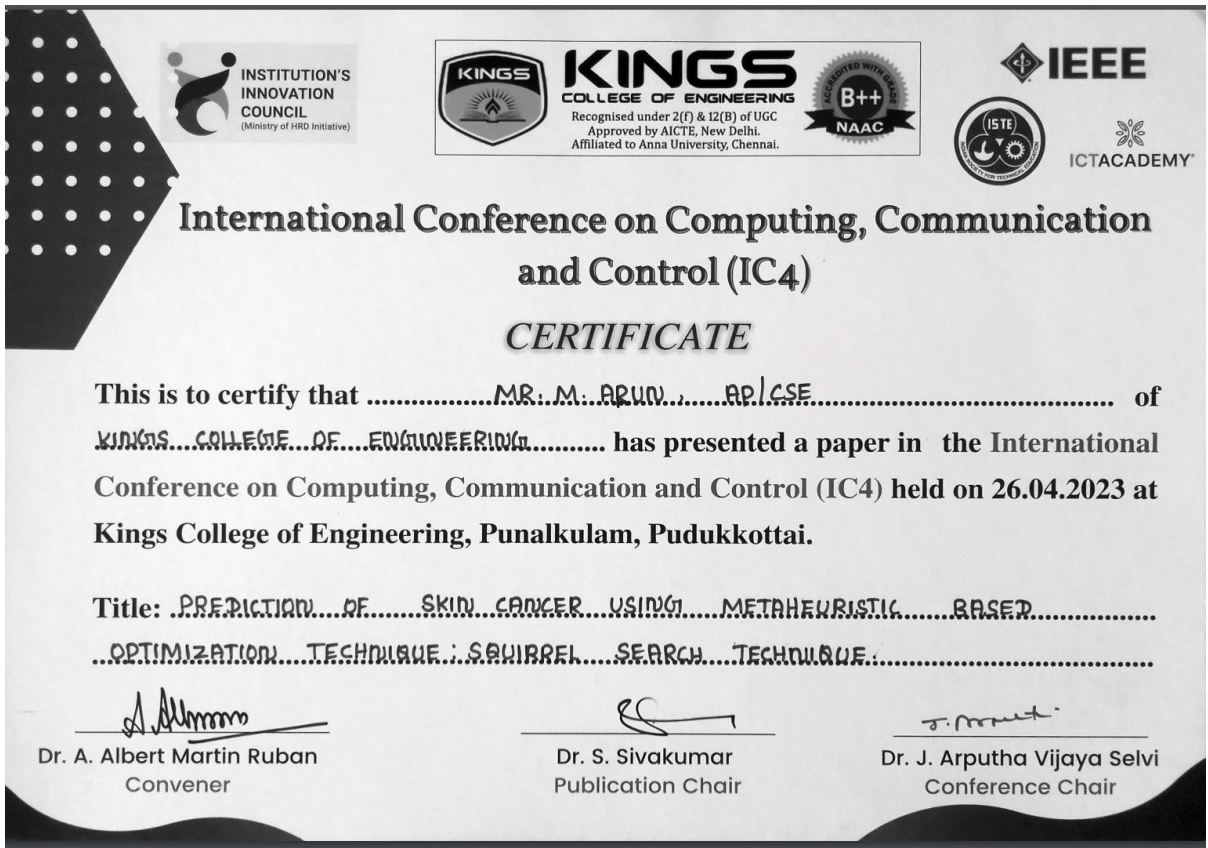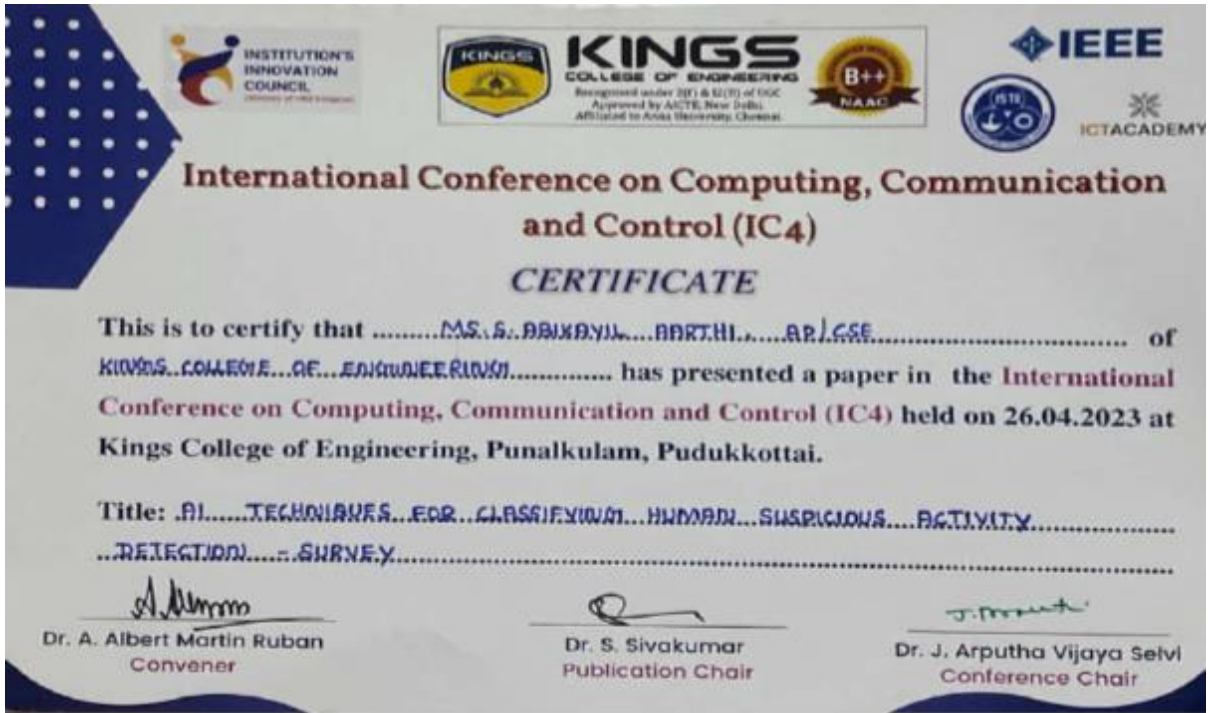and Control (IC4)

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Kings College of Engineering, Punalkulam, Pudukkottai.

Title: ....A..SURVEY....OF..SMALL....CELL....LUNG....CANCER....DETECTION..USING....MACHINE
.LEARNING....ALGORITHMS..

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Kings College of Engineering, Punalkulam, Pudukkottai.

Title: .SIGN.....LANGUAGE.....INTERPRETER..USING...MACHINE....LEARNING.................
....

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This is to certify that .... MS. S. ABIVADYL, AARTHI., AP/CSE .... of KINGS COLLEGE OF ENGINEERING .... has presented a paper in the International Conference on Computing, Communication and Control (IC4) held on 26.04.2023 at Kings College of Engineering, Punalkulam, Pudukkottai.

Title: AI TECHNIQUES FOR CLASSIFYING HUMAN SUSPICIOUS ACTIVITY DETECTION – SURVEY

Dr. A. Albert Martin Ruban
Convener

Dr. S. Sivakumar
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Dr. J. Arputha Vijaya Selvi
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Title: PREDICTION OF SKIN CANCER USING METAHEURISTIC BASED OPTIMIZATION TECHNIQUE: SQUIRREL SEARCH TECHNIQUE.

Dr. A. Albert Martin Ruban
Convener

Dr. S. Sivakumar
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Conference Chair

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Conference Proceedings on
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DRIVER ASSISTANT FOR THE DETECTION OF DROWSINESS AND EMERGENCY ALERT

ABIKAYIL AARTHI S, BAVITHRA B

KINGS COLLEGE OF ENGINEERING

ABSTRACT

A Real-Time accident-avoidance system has been projected in which the sleepy condition of the driver can be detected and appropriate action will be performed automatically. In the present world, road accidents are incurable. To decrease such accidents and their cruelty, we have introduced the Drowsy Driver Detection and Alert System. The system works on the concepts of 'Image processing'. The major concept includes the detection of the face (facial features) and these features are taken as the basis for the processing additionally, if the User had any needs or in any emergencies, this system shows the nearest service provider who can provide appropriate service. In the event that the vehicle stops because of any issue, for example, fix or puncture, a notice will send to be the close by enrolled repair and fix zones. Any of the requests can be picked and the particular garage or fix zone will send partners to serve the vehicle driver. Likewise, one can send warnings to local fuel stations, food providers, and well-being focuses to get their individual administrations. At last, this venture forestalls mishaps and furthermore gives a brilliant manual for the vehicle driver.

ANALYSING METHODS AND CHALLENGES OF AODV ROUTING USING MANET

B S VIJAY BASHAR

ER.PERUMAL MANIMEKALAI COLLEGE OF ENGINEERING

ABSTRACT

A Mobile Ad-hoc Network is a collection of autonomous nodes or terminals which communicate with each other by forming a multichip radio network without the aid of any established infrastructure or centralized administration such as a base station. Routing is an important component in mobile ad hoc networks and it has several routing protocols, which are affected from different attacks. Ad hoc on demand Distance Vector (AODV) is one of the most suitable routing protocols for the MANETs and it is more vulnerable to black hole attack by the malicious nodes. In this paper we attempt to focus on analyzing method and challenges of AODV routing in MANET.

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and detect the first symptoms in order to prevent the spread of a plant disease, with low cost and save the major part of the production. Hiring professional agriculturists may not be affordable especially in remote isolated geographic regions. Deep learning algorithm in image can offer an alternative solution in plant monitoring and such an approach may anyway be controlled by a professional to offer his services with lower cost. It includes image segmentation which includes active contour method and image classification approach which includes neural network algorithm to predict various types of diseases. And also extend the approach to recommend the fertilizers based on severity analysis with measurements.

HUMAN SUSPICIOUS ACTIVITY DETECTION USING AI TECHNIQUES

S. ABIKAYIL AARTHI
KINGS COLLEGE OF ENGINEERING

ABSTRACT

Due to the rise in shootings, knife assaults, terrorist attacks, etc. that occur in public spaces around the world, it has become crucial to identify suspicious activity in these areas. This study employs convolutional neural networks and deep learning to identify suspicious activity in videos and photos. We examine various CNN architectures and contrast their

precision. We describe the design of our system, which can analyses live video feed from cameras and determine whether an activity is suspicious or not. We also make suggestions for potential future advancements in the field of detecting suspicious activity.
Key words: neural networks, CNN architecture, suspicious, detection

FOCUS EXPLORER WITH API

PRADEESH S, PRAVEEN , DIVYA BHARATHI

BANNARI AMMAN INSTITUTE OF TECHNOLOGY

ABSTRACT

The web is now a significant component of the recruitment and job search process. However, very little is known about how companies and job seekers use the web, and the ultimate effectiveness of this process.Findings Results indicate that individuals seeking job information generally submit in the application.We achieve the best results by combining job titles with full-text job descriptions.The practice of issuing a vacant position and applying for a job via a website has increased steadily. The internet has helped in attracting potential candidates to an organization from the recruitment process, which is referred to as E-

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Lung Disease Detection Using Deep Learning

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Kings College of Engineering, Pudukkottai, Tamil Nadu*
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Nowadays, COVID-19 outbreak and respiratory symptoms globally take a huge number of people's lives away. Especially, COVID-19, which is a pandemic initially spreading out in the first quarter of the year 2020, heavily affects many people to die. Most countries have tried to find ways to solve and mitigate this outbreak including respiratory diseases due to the mentioned reason. We also face with insufficient number of medical personnel and equipment to treat the diseases. The need of technology to analyze the images for the disease detection is quite a challenge. In this work, we consider detecting and classifying many lung diseases from chest X-ray images using a deep learning (artificial intelligence) approach with VGG16 models. The lung diseases are COVID-19, Pneumonia and Pneumothorax. We use quite large published disease datasets. Our detection and classification models give impressive results providing between 93% and 100% accuracy, precision, recall and F1-measure.

Keywords: Chest- Xray, COVID-19, pneumonia, Tuberculosis, VGG16

Bitcoin Price Prediction Using Machine Learning

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The goal of this project is to predict the future price of Bitcoin using machine learning algorithms. The project will utilize historical data from the Coin Market Cap API to build a predictive model. The model will be trained using a variety of techniques such as Linear Regression, Decision Trees, Support Vector Machines, and Neural Networks. The Bitcoin system is a set of decentralized nodes that run the Bitcoin code and store its Blockchain. The results of the model will then be compared to actual market prices in order to assess the accuracy of the predictions. Finally, the project will provide insight into the most effective machine learning techniques for predicting the future price of Bitcoin.

Keywords: Bitcoin; machine learning; random forest regression; LSTM

IOT BASED HOME AUTOMATION WITH TIMER AND SENSOR

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IoT (Internet of Things) based home automation systems have gained a lot of popularity in recent years. These systems use various sensors and timers to automate different tasks and improve the overall efficiency of a home. The basic idea behind an IoT based home automation system is to connect various home appliances and devices to the internet, so that they can be controlled and monitored remotely. This is achieved using different sensors and controllers that communicate with each other over the internet. The use of timers is also an important aspect of home automation. Timers can be used to control the lighting and temperature of a home, as well as other tasks such as watering the garden, switching off appliances when not in use, and so on. In an IoT based home automation system, various sensors are used to detect changes in the environment and trigger the appropriate action. For example, a motion sensor can be used to turn on the lights when someone enters a room, or a temperature sensor can be used to adjust the heating or cooling system based on the temperature inside the home. Overall, an IoT based home automation system can help to improve the comfort and convenience of a home, while also reducing energy consumption and saving money on utility bills.

Keywords: *Arduino, Blynk, temperature, Sensor, timer*

MENTAL HEALTH PREDICTION USING MACHINE LEARNING

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This paper introduces a machine learning approach to predict the mental health of individuals from their personal characteristics. Using a supervised machine learning method, features such as age, gender, income, education level and other demographic attributes are used to build a model for predicting mental health outcomes. The model is evaluated using cross-validation and compared to traditional statistical methods. Results indicate that the machine learning approach produces more accurate predictions of mental health outcomes. The paper concludes with a discussion of potential applications of the model and recommendations for future research.

Keywords: *Machine Learning, Supervised Learning*

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AI Based Smart Video Player using Face Recognition

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An AI-based smart video player with face recognition can be developed using computer vision and machine learning techniques. The video player can be trained to recognize faces in the video using deep learning algorithms such as Convolutional Neural Networks (CNNs) and FaceNet. Here are the basic steps for building an AI-based smart video player with face recognition. Data Collection: Collect a large dataset of face images that includes multiple views of each person's face. This dataset should be diverse and include people of different ages, races, and genders. Preprocess the face images by resizing them to a standard size, cropping them to remove any unwanted background, and converting them to grayscale.Face Detection: Use a pre-trained face detector such as Haar Cascade or MTCNN to detect faces in the video frames.Face Alignment: Align the detected faces to a common coordinate system using techniques such as facial landmarks or affine transformations. Face Embedding: Use a pre-trained face recognition model such as FaceNet or VGGFace to extract a feature vector (embedding) from each face.Face Recognition: Compare the extracted face embeddings with those of the faces in the database to identify the person in the video. Video Playback: Once the person is identified, the video player can skip to the section of the video where the person appears or highlight the section of the video where the person is present. User Interface: Develop a user-friendly interface for the video player that allows users to add new faces to the database, view the list of recognized faces, and manage the settings. Overall, an AI-based smart video player with face recognition can provide a more personalized and engaging video viewing experience by automatically identifying the people in the video and highlighting their appearances.

Keywords: *Face Recognition, Video player*

Multiple Disease Prediction System using Machine Learning

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This article reviews the application of AI techniques in the medical field for the diagnosis and prediction of various diseases. It examines the use of Machine Learning (ML) and Deep Learning (DL) algorithms to automate forecasting and diagnosis processes, with a focus on Support Vector Machine (SVM) and Convolutional Neural Networks (CNN) as the most widely used methods. It also discusses the successes of AI in diagnosing and predicting cancers, heart, lung, skin, genetic, and neural disorders, as well as its existing challenges and limitations.

Keywords— *Image processing, Healthcare, Clinical Decision Support, Artificial intelligence, Deep learning, Machine learning, Diseases diagnosis, Medical image processing*

SOFTWARE DEFECT PREDICTION USING RFC

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This era has grown up with new technology such as mobile phones, tablets and laptops. In our day today lives, we are often related to those technologies for many specific purposes. Apps and software program have become increasingly vital in our lives in recent times. We download applications and software to access digital information, play games, learn languages and communicate with each other. They may have bugs/defects, which is essential to predict defects before deploying them to the market. Many people are progressively laid low with software program downloads, and customers waste no time in the use of software program after they find working and non-working troubles. Software flaws can resultin unforeseen outcomes or actions when used, which, under extreme circumstances, might result in catastrophic damage. Diagnose the problem to present a danger to restore the bug earlier than the usage of it. In order to accurately predict defects in new software, software defect prediction (SDP) is used to evaluate the previous defect data and determine the distribution rule of historical degeethfects. So that you can efficaciously predict defectsin the new software. The duplicate and irrelevant feature in the software defect data sets cause impact in the performance of the defect predictors. RFC uses the K-models approach to divide features into K clusters, and then it chooses the representative features from each cluster to create the final feature subset.

Keywords: *Software defect datasets, Releif F based Clustering, Diagnose problem, Feature selection.*

Chronic Kidney Disease Prediction

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[1]Associate Professor, [2,3,4] UG Scholars

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One of the most important areas of healthcare analytic is the prediction of chronic renal disease. It may be difficult to identify chronic kidney disease (CKD) in its early stages because there are no symptoms. A kidney transplant and dialysis are required since, on average, a person can only survive without their kidneys for 18 days. The main causes of this condition are low water intake and unhealthy eating habits. It is gradually turning into a crisis of world health. The ability to identify diseases using predictions based on symptom data sets has recently been developed by neural network algorithms. This paper proposes a system that comprises data pre-processing, a mechanism for handling missing values, and feature encoding to predict CKD status using a clinical dataset. Five machine learning classifiers were employed for the analysis of a dataset with 26 features on chronic renal illness from the Kaggle Machine Learning Repository: K-Nearest Neighbours (KNN), Decision Tree (DT), Random Forest (RF), XgBoost (XGB), and Back Propagation Neural Network (BPNN). Of all the machine learning models, the back propagation neural network delivers the best results with a 99.5% accuracy rate. The Flask app is developed for the user convenience to check whether they have a chronic kidney disease or not.

Keywords - *Back Propagation Neural Network*

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Multiple Heat Pipes Assisted Cooling System For Milling

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Milling is one of the important metal cutting operations suitable for both roughing and finishing metal parts. However the intermittent nature of its cutting and the heat generated during the process results in frequent issues like temperature and force variations, poor surface finish and wear on the cutting edge. Traditional cooling methods provided to reduce the cutting temperature; they are not free from some opposing effects on the economy and environment. In this paper, dry machining is carried out using a heat pipe firmly assembled on a customized milling tool. The heat pipe effectively transfers heat from the cutting edge. Milling operations with different combinations of speed, feed and depth of cut are carried out with the heat pipe embedded milling cutter and was compared with traditional dry milling. It is evident that the multiple heat pipes assisted milling performed better to reduce heat and force of machining thereby improvement in the surface roughness was achieved.

Keywords: Heat pipe assisted machining, Green machining, Surface finish.

ELECTRONIC PILL CAMERA IN HEALTH MONITORING

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The aim of technology is to make products in a large scale for cheaper prices and increased quality. The current technologies have attained a part of it, but the manufacturing technology is at macro level. The future lies in manufacturing product right from the molecular level. Research in this direction started way back in eighties. At that time manufacturing at molecular and atomic level was laughed about. But due to advent of nanotechnology we have realized it to a certain level. One such product manufactured is PILL CAMERA, which is used for the treatment of cancer, ulcer and anemia. It has made revolution in the field of medicine. At that time manufacturing at molecular and atomic level was laughed, But due to advent of nanotechnology we have realized it to a certain level. One such product manufactured is PILL CAMERA, which is used for the treatment of cancer, ulcer and anemia. It has made revolution in the field of medicine. This tiny capsule can pass through our body, without causing any harm. It takes pictures of our intestine and transmits the same to the receiver of the Computer analysis of our digestive system. This process can help in tracking any kind of disease related to digestive system. Also we have discussed the drawbacks of PILL CAMERA and how these drawbacks can be overcome using Grain sized motor and bi-directional wireless telemetry Capsule. Besides this we have reviewed the process of manufacturing products using nanotechnology.

Keywords: Capsule, Nano technology, PILL Camera

Crop Yield Prediction and Support System to Farmer Using Machine Learning Technique

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Agriculture is one of the most essential economic activities and also plays significant role in social and environmental aspects of the countries that primarily depend on Agriculture. The proposed methodology is used to predict Weather, temperature, humidity, rainfall, and moisture—are taken into account to arrive at the solution. Both classification and regression tasks can be accomplished using the efficient supervised machine learning method known as random forest. It works by building several decision trees during the training phase and producing output. Farmers should go to laboratory for testing the fertility of the soil and it's time consuming. An optical transducer is developed to measure and to detect the presence of Nitrogen (N), Phosphorus (P) and Potassium (K) of soil. Crop Yield Prediction involves predicting yield of the crop from available historical data like weather parameter, soil parameter and historic crop yield.

Keywords— Agriculture, Classification, Random Forest, Yield, prediction

Image Steganography Using Least Significant Bit (LSB) Method

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In steganography, an innocent-looking image is taken as an example and a message is embedded in the image by changing the number of pixels selected by the encryption algorithm. By embedding a hidden message or file in an image, the number of pixels can be changed. In short, this means we use the encrypted RGB data to include other data, which significantly impairs the visual representation of the image. The hidden message is transmitted by increasing the bandwidth of the original message or by manipulating the file format. Since steganography is often used in phishing and as a way for malicious software to exfiltrate data, it is very difficult to detect it.

Keywords: Steganography, Encryption Algorithm, Bandwidth, Malicious Software.

Online Class Proctor Application

[1]M. Maharasi, [2]Sesharvind.N, [3]Suresh.S

[1]*Assistant Professor,* [2,3,4]*Student, Department of Computer Science and Business Systems, Rajalakshmi Engineering College, Chennai, India*

Education system are also going in online mode due to technology advancement, but at the same time particularly in online classes for students many teachers face difficulties that the students are not attending the class properly where the switch-off camera, microphone when teacher ask them to turn on to ask any question, switching to other tab unnecessarily which cannot be known to the teacher and also leaving the meet wantedly by saying network issue. So this kind of malpractices affect students education and gives a stress to teacher while teaching in online mode. So this project helps to give a solution for this problems and also make sure that no student can do any malpractice in online class even if they try to do it their activities will be monitored and will be sent to the teacher so that the teacher can take action on the students so that this project helps students also to strictly attend the class properly.

Keywords: COVID'19, online exam, online proctoring, remote teaching, ICT, evaluation, flexible learning

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A SMART SYSTEM TO CLASSIFY THE GARBAGE WASTES USING IOT

Dr.S.M.Uma, Ms.S.Puvaneswari

Assistant Professor, Department of Computer Science & Engineering

Kings College of Engineering, Anna University , Chennai

ABSTRACT

Due to urbanization, the quantity of waste produced by the people is increasing day by day. The overflowed bin may create an unhealthy environment and make it a source of diseases. The sanitary workers have spent most of the time to classify the garbage. It is a time consuming process as well as the workers also affected by the diseases. To reduce the workflow of that worker, we proposed a system that classifies the waste and deposits the waste to its corresponding without human intervention. The system has a sensor to separate the metal waste, biodegradable and non biodegradable from the waste. Using IoT these details are sent to the corresponding authority. A mobile application is used to monitor the workflow of a dustbin. When the dustbin is full, it intimates the authority to issue an order to empty the bin. The main advantage of the system is to reduce the time of a worker and prevent them from infectious diseases.

COVID-19 PREDICTION USING MACHINE LEARNING

Abikayil Aarthi S, Dhamayandhi N, Bavithra B

Department of Computer Science & Engineering, Kings College of Engineering

Anna University, Chennai

ABSTRACT

Machine Learning based gauging systems have demonstrated their importance to expect in per employable results to further develop the dynamic on the future course of activities. The identification and prioritization of negative factors for a risk were two tasks that needed the use of ML models, which have been used in many application domains for a while.A few expectation strategies are prominently used to deal with gauging issues.This work demonstrates the ability of ML models to predict the number of oncoming Coronavirus patients, which is now thought to be a potential threat to humanity. Specifically, four standard gauging models, like straight relapse (LR), least outright shrinkage and choice administrator (Tether), support vector machine (SVM) have been utilized in this review to figure the undermining variables of Coronavirus. Three sorts of expectations are made by every one of the models, like the quantity of recently tainted cases, the quantity of passes, and the quantity of recuperations in the following 10 days. The outcomes delivered by the review demonstrates it a promising instrument to involve these strategies for the ongoing situation of the Coronavirus pandemic. The results show that the ES outperforms all other pre-owned models, followed by LR and Tether, which are good at predicting new affirmed cases, passing rates, and recovery rates, while SVM is useless in all forecasting scenarios given the available dataset.

Corresponding Author E-mail ID: aarthi.cse@kingsengg.edu.in.

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113.SURVEY ON ASPECT-BASED SENTIMENT ANALYSIS

Jitendra Soni * , Dr. Kirti Mathur ** , Mr Arpit Agrawal *,Karan Bais * ,Pravar More * ,
Harsh Gehlot *
* Institute of Engineering & Technology, Devi Ahilya VishwaVidyalaya, Indore
** International Institute of Professional Studies, Devi Ahilya Vishwavidyalaya,
Indore

Sentiment analysis is the process of determining the Sentiment depicted in a statement by the author. Sentiment analysis has been a growing field since the last decade and with the ever-increasing demand of companies and individuals to understand the needs and opinions of their audience has led the field to go the extra mile by introducing many different algorithms and techniques to achieve more correct and informative conclusions about their offerings. The field has been subdivided into different branches each addressing a different level of analysis and ideas. The following survey focuses on the current work in this field, especially the new idea of aspect-based sentiment analysis, which focuses on finding the individual sentiment about entities discussed in the sentence and document. The importance of Aspect Based Sentiment analysis lies in its ability to yield much more fine-grained sentiment information than its peers which is discussed in detail. The paper goes into detail about the works done on Aspect Based Sentiment analysis in the near past and breaks down the exact motives and features of these works, :Talong with describing the proposed solutions in detail and comparing their performance based on the standard metrics. Finally, the paper also discusses the challenges and problems faced in the task and expands on what future work can be done to tackle them.

114. STUDENT MANAGEMENT SYSTEM - KINGS APP

Dr.S.M.UMA - HOD/CSE,
E. RAMAKRISHNAN, S. VENGATRAMANAN, K. VIGNESH
IV/CSE KINGS COLLEGE OF ENGINEERING, PUNALKULAM, NEAR
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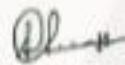
Yoga Posture Analysis Using Deep Learning Techniques

in the "13th International Conference on Science and Innovative Engineering 2023" held on 14th May 2023.

Dr. Akhatov Akmal Bustamovich	Dr. Christo Ananth	K. Janani	Ms. P. Arunsrinivas
Vice Rector – International Affairs	Professor	CEO, OSIET	Convener – ICSIE
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UZBEKISTAN	UZBEKISTAN		

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122.INDIAN PAPER CURRENCY DETECTION FOR BLIND AND VISUALLY IMPAIRED PEOPLE

M.Arun-Assistant Professor
D.Parkavi-Student
N.N.Varsha-Student
S.Ajay-Student
S.Deepan-Student
E.Muhilan-Student
M.Siva-Student
Kings College of Engineering, Pudukkottai

This project proposes an Indian currency detection system for visually impaired people using deep learning techniques. The system aims to provide a simple and efficient solution to help visually impaired individuals identify Indian currency notes accurately and quickly. The system utilizes a camera and image processing algorithms to extract features from banknotes and classify them according to their denomination. The proposed system uses a convolutional neural network (CNN) to automatically detect and classify different Indian currency notes, including the Rs.10,Rs.20, Rs.50, Rs.100, Rs.200, Rs500, and Rs.2000 notes. The input image of the currency note is processed and analyzed using the CNN model, which produces a prediction output identifying the denomination of the note. The system achieves an accuracy of 98% on the testing dataset, demonstrating its reliability and effectiveness in real-world scenarios. Overall, this system could potentially improve the independence and quality of life for visually impaired individuals in India.

123.SIGN LANGUAGE RECOGNITON AND DETECTION USING DEEP LEARNING ALGORITHM

Deepu G Thamma Balasai Leela Kishore A G
Department of Computer Science
SRM Institute of Science and Technology
Chennai,India

Dr. Rajasekhar V, B.E.,M.Tech.,Ph.D
Associate Professor,
Department of Computer Science
and Engineering
SRM Institute of Science and Technology
Chennai,India

Humans may engage with computers in a natural way by using hand gestures to carry out a variety of tasks. However, elements like the hand's complexity. Gesture structures, differences in hand size, posture, and ambient illumination can all have an impact on how well hand gesture recognition systems perform. Due to recent advancements in deep learning, picture recognition algorithms now perform significantly better. Real-time picture segmentation is essential for many uses of autonomous vehicles. Due to recent advancements in deep learning, picture recognition algorithms now perform significantly better. The Deep Convolutional Neural Network has shown improved performance in visual representation and classification, especially when compared to traditional machine learning methods. In this study, a Convolutional Neural Network (CNN) for hand gesture detection is proposed. In order to quantitatively increase the size of the dataset and provide the resilience required for a deep learning approach, data augmentation is initially utilised, which randomly moves photos both horizontally and vertically to an extent of 20% of the original dimensions. A gesture can be used

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SMART ENERGY METER AND DIGITAL BILLING SYSTEM USING ANDROID APP

S. ABIKAYIL AARTHI, N. DHAMAYANDHI

COMPUTER SCIENCE ENGINEERING, KINGS COLLEGE OF ENGINEERING, PUDUKKOTTAI, TAMIL NADU

Abstract:

Recently, it has been discovered that the electricity department's significant income loss is a result of the metering and billing system. At every level of the billing process, errors can occur due to malfunctioning meters, processing faults when processing bills, or human error when recording meter readings. According to a few study estimates, 40% of India's electricity bills are unpaid. In the nation, almost one-fourth of the electricity produced is either stolen or lost during transmission. A smart system for measuring electricity can solve these issues. Designing a smart electricity meter with an Android-based payment system is the goal. We suggested a wireless IOT-based system for smart electricity meters and billing (Internet of Things). We also employed relays to turn off an unpaid user's power supply, which was managed wirelessly in accordance with the IOT principle. Users will receive notifications via message using cloud notification after reading is automatically taken place.

Keywords — Internet of Things, OCR operation, smart electricity meter, billing system using IOT.

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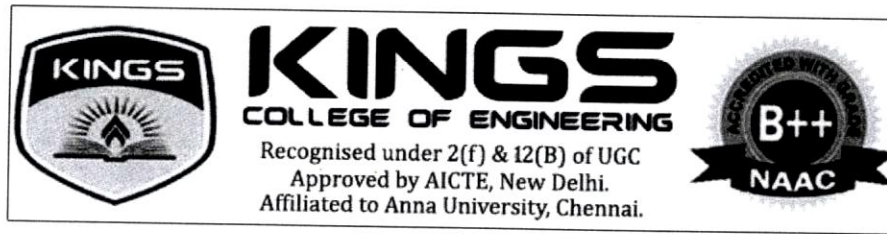
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Title: ...Design and Sleep apnea keeper for continuous ....monitoring and screening.........................

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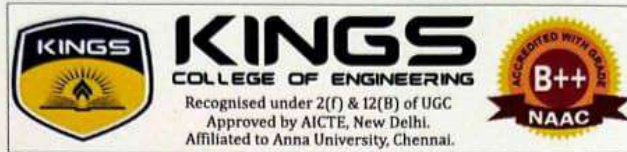
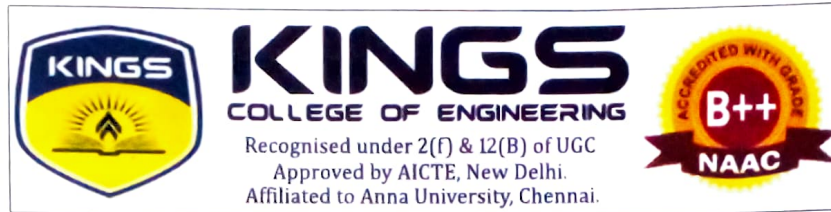# International Conference on Computing, Communication and Control (IC4)

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Title: ...IoT...Based...Intelligent...Surveillance...System...Using........... ......Raspberry Pi with Telegram...

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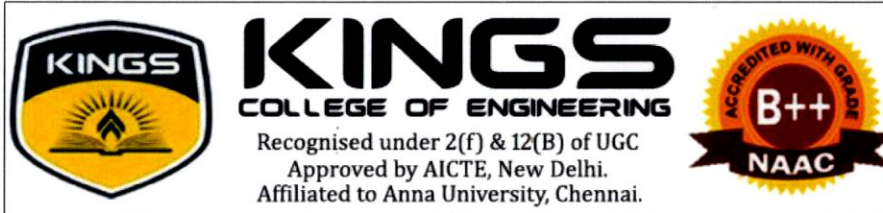
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Title: ...Machine Learning based oil spill detection using image Processing technique...

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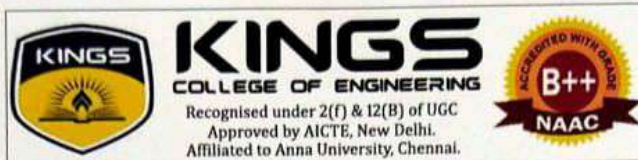
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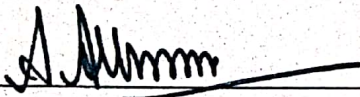This is to certify that .... Ms. Dr. T. Shanthi Associate Professor/ ECE .... of .... kings college of Engineering .... has presented a paper in the International Conference on Computing, Communication and Control (IC4) held on 26.04.2023 at Kings College of Engineering, Punalkulam, Pudukkottai.

Title: .... Wireless Sensor networks based Power transmission system .... using IOT technology ....

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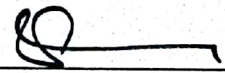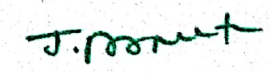
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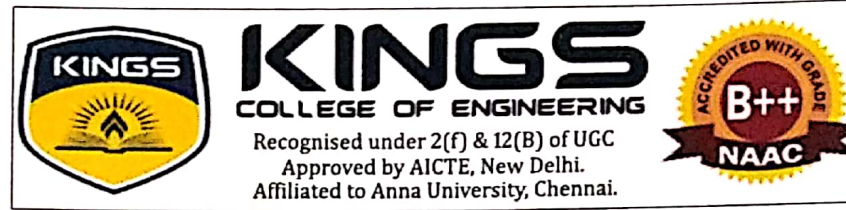
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Title: .... Under water visible light Communication System for human health monitoring and vehicle applications ....

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Title: ...... IOT based Safe Water drinking Specialties ......
...... System for rural Area ......

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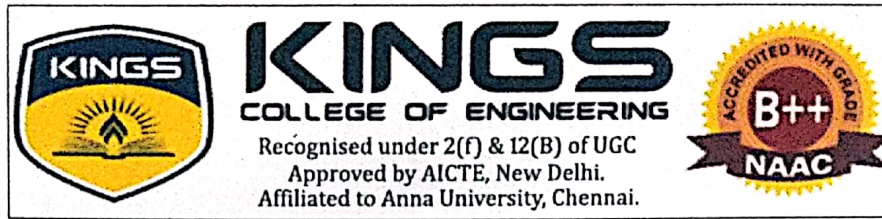
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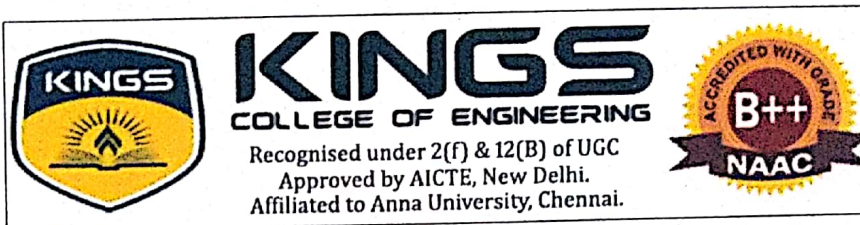
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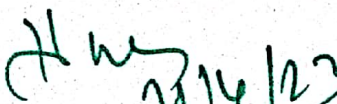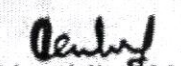
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IC423-EEE13	IoT Based Oxygen Cylinder Monitoring and Alert System [1] *N. Dhanasekar,* [2] *M. Latha* [1]*Professor, Department of EEE,* [2]*Associate Professor, Department of EEE* *A.V.C College of Engineering, Mayiladuthurai, Tamil Nadu, India*

Oxygen is our primary life-support. The air we breathe is so vital that without it we would rapidly die. Clean air is made up of several gases of which Oxygen is the most important to us. Clean air contains 19% to 21% Oxygen. When body oxygen falls to extremely low levels for prolonged periods of time, the body may become a breeding ground for harmful bacteria, viruses, fungi, parasites, and other infectious agents. Most of these are anaerobic, i.e., they cannot live in an oxygen-rich environment. Some research indicates that when the oxygen content of the body is within the normal level, infectious microorganisms have a more difficult time for breeding and multiplying. The partial pressure of oxygen in normal blood should be approximately 97%. Within each red blood cell there are iron-rich hemoglobin molecules. Approximately 97% of the oxygen carried to the cells is attached to these hemoglobin molecules and 3% of the oxygen supply dissolved in the blood plasma. When the blood oxygen levels remain low for extended periods of time, the cells cannot get an adequate and consistent supply of oxygen. The main aim of this paper is to provide uninterrupted oxygen to the patient and to monitor and display the status of all oxygen cylinders in the hospitals at any point of time.

IC423-EEE14	Efficient Load Scheduling for Energy Management in Residential Areas Using Artificial Intelligence with Integrated Hybrid Energy Source [1] *S.Shelaa,* [2] *A.Albert Martin Ruban* [1] *PG Scholar,* [2] *Associate Professor, Department of EEE* *Kings College of Engineering, Punalkulam, Tamil Nadu, India*

The smart grid revolution in the electric power sector is a key factor in the future. The grid is made smarter through the integration of modern technology and communication infrastructure. There are various technological obstacles to overcome to integrate intelligence into the grid, including energy storage systems, power quality, communication, protection, control, and demand side management with customer involvement. Demand Side Response effectively realizes the goal of smarter markets, a crucial component of the smart grid. Energy flexibility has only been implemented on the supply side thus far. The two-way connection between supply and demand can be successfully implemented thanks to smart grid intervention. Demand Side Response (DR) is a strategy for reducing carbon footprints without building new power plants and saving energy.

Index Terms: Load Scheduling, optimization, hybrid energy source, Peak hours to peak off hours.

IC423-EEE15	Power Quality Mitigation Problems and Alternative Solutions [1] *A.Prabha,* [2] *A.Albert Martin Ruban,* [3] *S.R.Karthikeyan,* [4] *J.Arokia Raj* [1,3,4] *Assistant Professor, Department of EEE* [2] *Associate Professor, Department of EEE,* *Kings College of Engineering, Punalkulam, Tamil Nadu, India*

Any power issue that causes utility or end-user electrical equipment to malfunction or fail is referred to as power quality. This issue may appear as voltage, current, or frequency aberrations. In the highly connected culture of today, reducing the impact of power quality is no longer an option; it is imperative. Modern data management (ISP) and communications centres, telecommunications networks, industrial, commercial, and institutional power systems, as well as microwave relay towers that feed data, all require electrical utilities to provide them with uninterrupted, unpolluted electric energy. Power outages cost a lot of money and can seriously hurt a company's bottom line. Voltage fluctuations, voltage sags, under-voltage, voltage swells, over-voltage, voltage transients, surge currents, voltage interruptions and outages, harmonic voltage distortion, harmonic content distortion, low power factor, electromagnetic interference (EMI / RFI), and voltage notching are just a few of the many power quality issues that can affect a typical electrical load. The majority of harmonic issues can be identified by measuring waveforms, which can then be followed by other measurements like those of the harmonic spectrum, power data, voltage and current magnitudes, etc. Longtime electrical engineering and maintenance employees are aware of the importance of locating, monitoring, and fixing power quality and grounding issues to maintain the functionality of buildings and power distribution systems. The most recent information about issues with power quality, power factor, power conditioning, electronic device technologies, power quality businesses, power analyzers, and power quality applications and alternative solutions were discussed in this paper.

IC423-EEE16	Multi-objective Optimization for Scheduling of Energy Production in Micro Grids
	[1] *S. Naveen Prakash,* [2] *S. Vasantharaj*
	[1,2] *Assistant Professor, Department of EEE,* *Kings College of Engineering, Punalkulam, Tamil Nadu, India*

A novel energy production scheduling technique is suggested that relies on resilient multi-objective optimization with multi objective criterion in order to improve the economic and environmental benefits of microgrids (MGs) under numerous uncertainties in renewable energy resources and loads. To begin with, a mixed integer minimax multi-objective formulation is developed with the aim to minimize economic and environmental goals while also accounting for uncertainties. Second, the primary problem is split into a bi-level optimization problem that aims to find a reliable scheduling scheme in a multi-objective framework under the worst-case realization of uncertainties. The rebuilt problem is then solved using a hierarchical meta-heuristic solution method that incorporates a multi-objective cross entropy algorithm and a δ Plus indication. Comparing the proposed scheduling method to single-objective robust optimization and multi-objective optimization scheduling approaches, numerical findings show that the suggested scheduling method can effectively attenuate the disruption of uncertainties as well as minimize energy costs and emissions. This research may provide insightful information that aids decision-makers in balancing robustness and all-inclusive benefits in the operation of MGs.

Index Terms: Microgrid; multi-objective optimization; scheduling; uncertainty

IC423-EEE17	Whale Optimization Algorithm based Economic Power Dispatch of Micro-Grid Including Distributed Generation and Energy Storage [1] *S. Naveen Prakash,* [2] *S. Vasantharaj* [1,2] *Assistant Professor, Department of EEE,* *Kings College of Engineering, Punalkulam, Tamil Nadu, India*

The micro-grid (MG) system has become considerably more focused on distributed generation (DG) technology as a result of the decline in fossil fuel energy resources and the rise in system power demand. The addition of DG to MG improves power quality while lowering system costs associated with generation and emissions. By minimizing the total cost objective function, which includes both the generating cost and the emission cost in this study, the environmental economic dispatch problem is resolved. The different DG technologies that are integrated into the MG alongside battery energy storage (BES) include photovoltaic (PV), fuel cell (FC), wind turbine (WT), gas-turbine (GT), and diesel engine (DE). The whale optimization algorithm (WOA) is used in this work to tackle the optimization problem of the environmental economic dispatch of the MG. The suggested methodology is tested on a typical MG system, and by contrasting the outcomes with those of other optimization techniques, the efficiency of WOA is demonstrated.

Index Terms: Micro-grid, Distributed Generation, Environmental Economic dispatch, Whale optimization algorithm, Total cost reduction

IC423-EEE18	DC-link Voltage Control of Interlinking Converter in an Islanded Hybrid AC/DC Microgrid using Space Vector Modulation [1] *S. Vasantharaj ,* [2] *S. Naveen Prakash,* [3] *P.Thirumagal* [1,2,3] *Assistant Professor, Department of EEE,* *Kings College of Engineering, Punalkulam, Tamil Nadu, India*

The improvement of distribution grids resulted in the evolution of power systems towards the smart grid. The microgrid has a significant impact on the improvement of power systems, which refer to loads that are organized and synchronized way and distributed energy resources. To function in "islanded" mode, the microgrid must be completely off-grid or connected to the main power grid. A bipolar hybrid microgrid may serve local loads with local resources since it has both a DC and an AC bus running at the same time. The Interlinking Converter (ILC), which is used in microgrid applications, is considered to be essential. These ILCs are capable of removing lower order harmonics. SVM is used to reduce THD and increase dc-link voltage usage. This study will demonstrate a completely automated system with increased system performance and exceptional reliability. The MATLAB simulation results validate the unique switching modulation strategy, which will result in lower switching losses, current ripple, and THD of grid current.

Keywords: Total Harmonic Distortion, Hybrid AC/DC Microgrid, Interlinking Converter, Space Vector Modulation

IC423-EEE19	Design and Implementation of Vacuum Robot Electric Vehicle for Domestic Application [1] *R.Sundaramoorthi,* [2] *V.Rahul, K.Vetrivel* [1] *Assistant Professor,* [2] *UG Scholar* *Department of EEE,* *Kings College of Engineering, Punalkulam, Tamil Nadu, India*

In this paper implementation of vaccum robot based Electric vehicle for domestic application is presented**.** There are various automatic design controllers based on electric vehicle executed in recent days. But compact based with low cost design is not implemented till date. Hence this paper which involves design and implement a vacuum robot prototype by using Uno, Motor, Ultrasonic Sensor, Vacuum pump motor, Battery and water level sensor for domestic and industrial application. Robot vacuum cleaners are among the first service robots to enter daily life. However, robot vacuum cleaners are currently inaccessible to many due to their high cost. In order for these robots to become widespread, they must be cheap and functional. This autonomous robot moves around the obstacles, vacuums the dust from the floor, performs basic navigation and also it is manually controllable. Designing of a vacuum cleaner robot is divided into three parts which are the mechanical, electrical and software design. **.** In the software design; an easy to use Android application for remote control has been created, autonomous algorithms such as random walk and snake algorithms have been designed. Remote controlling of the robot has been provided by using Bluetooth connection between the Raspberry Pi and Android smartphone. The developed robot is disk-shaped, equipped with vacuuming and cleaning technology and controlled by Arduino controller light weight battery, cardboard based dustbin and small blower used, its weight is about 1.5 kg**.** Hardware structure implementation diagram and results are executed in this paper.

Index Terms: Battery, Controller, Bluetooth, Vaccum robot

IC423-EEE20	Multilevel Inverter for Electric Vehicle Applications [1] *P.Narasimman,* [2] *M.E.Krishna, R.Bharanidharan, Purushothaman* [1] *Assistant Professor,* [2] *UG Scholar* *Department of EEE,* *Kings College of Engineering, Punalkulam, Tamil Nadu, India*

In this paper, performance of an Induction motor (IM) with the cascade multilevel inverter has been presented. The features of IM are robust, high torque, and a wide range of applications with different control mechanisms. In most of the Electric Vehicles, BLDC has an enormous wait-age due to its simplicity and load characteristics. But the triggering point is the cost, performance in hard surface conditions and DC brushless drives need an out-and-out position sensor, as induction drives needs only a speed sensor. As the required power to the motor is supplied by the battery bank, the available DC should convert into AC by using a Power Electronic converter (Inverter) and it has to drive the motor with a suitable control mechanism. In this paper design of MLI-fed IM with lower harmonic content and reducing the converter cost for Electric vehicle applications.

Index Terms: Hybrid Multilevel Inverter ,Electric Vehicles, Induction motor

IC423-EEE21	A Microgrid's Economic Dispatch with Regeneratable Energy Sources Using an Improved Intelligent Algorithm [1] *A.Prabha,* [2] *R.Regina,* [3] *M.Pandidevi* [1] *Assistant Professor, Department of EEE ,* [2,3] *UG Scholar* *Department of EEE,* *Kings College of Engineering, Punalkulam, Tamil Nadu, India*

The idea of a micro grid system is the small-scale generation and distribution of power to a constrained geographic area in order to prevent transmission losses and maintain a steady supply of electricity. The use of accessible renewable energy sources (RES) has been mandated by protocol in an effort to reduce the amount of dangerous pollutants released into the atmosphere. By reducing fuel costs, economic load dispatch (ELD) addresses the optimal sizing of distributed energy resources (DERs). The best DER sizing is performed via a multi-objective Economic Dispatch (ED), which offers a trade-off between reducing fuel costs and polluting emissions. Using a recently built Competitive Swarm Optimizer, this article conducts all activities on an island and a micro grid that is integrated with renewable energy separately.

Index Terms: Index Terms—Economic Dispatch, Competitive Swarm Optimizer, Large Scale Global Optimization, Evolutionary Algorithms, Swarm Intelligence.

IC423-EEE22	Smart Energy Metering and Power Theft Control using Arduino & GSM Technology [1] *S.R.Karthikeyan,* [2] *J.Arokia Raj,* [3] *R.Sarathkumar, M.Yugeshwaran* [1,2] *Assistant Professor, Department of EEE ,* [3] *UG Scholar* *Department of EEE,* *Kings College of Engineering, Punalkulam, Tamil Nadu, India*

In nations like India, where the population is growing and energy consumption is rising steadily, energy theft is a major issue. Due to energy theft, utilities in the power grid are losing significant amounts of money every year. The newly developed AMR for energy measurements reveals the idea and operation of a new automated power metering system, however this increased electricity theft from administrative losses due to less frequent interval checkout at the consumer's home. Theft cannot be checked and solved by going door to door among customers. The energy meter is protected against power theft in this study using a novel method based on the microcontroller Atmega328P that can be solved by remotely cutting off and restoring the service.

IC423-EEE23	A SC²DH Based Multi-Source Multilevel Inverter for High-Frequency AC Applications [1] *P.Narasimman* [1,] *Assistant Professor, Department of EEE* *Kings College of Engineering, Punalkulam, Tamil Nadu, India*

This paper proposes a multi-source multilevel inverter (MSMLI) for HFAC applications. The proposed topology employs lesser number of power switches while generating a higher number of voltage levels. Thereby reducing the requirement of large filtering. Structurally, the proposed topology is made up of a Switch Capacitor Clamped Diode H-bridge (SC²DH) multilevel inverter. Two modulation methods based on fundamental and high-frequency switching are applied for the generation of multilevel waveform. PLECS simulation software is used to validate the operation of the proposed topology. In addition, thermal analysis taking into account the variation into load power factor (PF) is carried out and the results are presented.

Index Terms: SC²DH MLI, HFAC

IC423-EEE24	Battery Management Systems in Electric Vehicles-Optimization Approach [1]*R.Sundaramoorthi1,* [2] *P.Thirumagal* [1,2] *Assistant Professor* *Department of EEE, Kings College of Engineering*

In this paper, Battery Management systems using optimization approach is analyzed. The creation of a precise and reliable state-of-charge (SOC) estimation is necessary for EV safety, battery lifetime, efficiency, charge control, and SOC estimation. In this study, Radial basis algorithm-based enhanced data-driven method for estimating state of charge (SOC) in lithium-ion batteries is proposed. As a result, the improved firefly algorithm (iFA) optimizes the Radial Basis algorithm to determine the ideal number of input time delay (UTD) and hidden neurons (HNs). This study examines the effectiveness of lithium nickel cobalt aluminium oxide (LiNiCoAlO2) and lithium nickel manganese cobalt oxide (LiNiMnCoO2) towards SOC.The development of an accurate and robust state-of-charge (SOC) estimation is essential for the battery lifetime, efficiency, charge control, and safe driving of electric vehicles (EV). This paper proposes an enhanced data-driven method based on a Radial basis neural network (RBNN) algorithm for state of charge (SOC) estimation in lithium-ion batteries. Hence, the Radial Basis algorithm is optimized by the improved firefly algorithm (iFA) to determine the optimal number of input time delay and hidden neurons. This work investigates the performance of lithium ion battery performance toward SOC estimation under two experimental test conditions: the static charge and discharge test (SDT).Also, the accuracy of the proposed method is evaluated under different EV drive cycles and temperature settings. The results show that Radial Basis Neural network achieves precise SOC estimation results with a root mean square error (RMSE)below 5%. In addition, the effectiveness and robustness of the proposed approach are validated against uncertainties including noise impacts and aging influences.

Keywords - Electric vehicle, extended fire fly algorithm, Radial Basis neural network, State of Charge(SOC)

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Abstract:

Due to the increasing cost of fossil fuels and other non-renewable resources, Environmental conditions and higher capacity accumulator's transformation method has been changing day by day. Though modern controllers are adopted in Electric vehicles, the primary source of battery which causes error and need to enhance the parameters. In this paper, an Improvement of the dynamic performance of the Battery Electric drive is presented. Here DC-DC Converter with different topologies has been compared for the performance of Electric Vehicles. Battery current ripples and converter losses which creates problem in Electric vehicles. Hence Improved SEPIC Converter is designed for the improvement of Electric vehicles. The Conventional linear controllers such Proportional Integral and Derivative (PID) which require analytical modeling system. Besides a Digital Controller FPGA is complete opposite PID which is based trial and error method, and doesn't include any mathematical analyze modeling of the system. However the FPGA is more sturdy (tough), has more

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strong study state response, and it is able to attain transient and steady state response as compared to PID controllers. The above approach is applied and experimented with simulation software for the performance the SEPIC (DC to DC converter) is discussed here in this research. Finally, the investigations of selected drive performance such as Battery Voltage, Current, Ultra Capacitor current and PID Controllers parameters and digital controllers Evaluation Parameters are presented here.

≡ Contents

I. Introduction

Due to the demand of fossil fuels, our world moved to Electric vehicles. In order to protect and safe the environment conditions, Electric vehicles are the alternative choice. In Today's modern world, Battery operated vehicles are most popular in recent years. In order to avoid the pollution, Battery operated vehicle is the right choice.[2] There are many types of Batteries are used in Electric Vehicles tor the solution of dynamic perform ance of the vehicles. Multiple researches are in progress in the area of battery operated vehicles.

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Challenges with Power Quality Mitigation and an Alternative Solutions

PRABHA[a]*, G. THEMOZHI[b], S. M. BALAMURUGAN[c]

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Abstract: Any power issue that causes utility or end-user electrical equipment to malfunction or fail is referred to as power quality. This issue may appear as voltage, current, or frequency aberrations. In the highly connected culture of today, reducing the impact of power quality is no longer an option; it is imperative. Modern data management (ISP) and communications centres, telecommunications networks, industrial, commercial, and institutional power systems, as well as microwave relay towers that feed data, all require electrical utilities to provide them with uninterrupted, unpolluted electric energy. Power outages cost a lot of money and can seriously hurt a company's bottom line. Voltage fluctuations, voltage sags, under-voltage, voltage swells, over-voltage, voltage transients, surge currents, voltage interruptions and outages, harmonic voltage distortion, harmonic content distortion, low power factor, electromagnetic interference (EMI / RFI), and voltage notching are just a few of the many power quality issues that can affect a typical electrical load. The majority of harmonic issues can be identified by measuring waveforms, which can then be followed by other measurements like those of the harmonic spectrum, power data, voltage and current magnitudes, etc. Longtime electrical engineering and maintenance employees are aware of the importance of locating, monitoring, and fixing power quality and grounding issues to maintain the functionality of buildings and power distribution systems. The most recent information about issues with power quality, power factor, power conditioning, electronic device technologies, power quality businesses, power analyzers, and power quality applications and alternative solutions were discussed in this paper.

I Introduction

The degree to which the voltage, frequency, and waveform of a power supply system conform to specified requirements is referred to as electric power quality. A stable supply voltage that stays within the prescribed range, a steady AC frequency near to the rated value, and a smooth voltage curve waveform are all indicators of good power quality (which resembles a sine wave). In general, power quality can be defined as the compatibility between what comes out of an electric outlet and the load hooked into it. [1] The phrase refers to the electric power that powers an electrical load as well as the load's ability to perform effectively.

There are numerous ways in which electric power might be of poor quality, as well as numerous causes of such power. The electric power industry consists of energy generation (alternating current power), transmission, and finally distribution to an electricity metre installed at the end user's premises. The electricity is then routed through the end user's wiring system until it reaches the load. The intricacy of the infrastructure used to transport electric energy from point of production to point of consumption, combined with variations in weather, generation, demand, and other factors, creates several opportunities for supply quality to be compromised.

While "power quality" is a convenient term for many, the term actually describes the quality of the voltage rather than power or electric current. The current demanded by a load is mostly unregulated, and power is just the movement of energy.

The quality of electrical power can be expressed as a set of parameter values, such as: Service continuity, Magnitude variation in voltage, Voltage and current transients, Harmonic content in AC power waveforms. It's helpful to think of power quality as a compatibility issue: is the equipment connected to the grid compatible with the grid's events, and is the power given by the grid, including the events,

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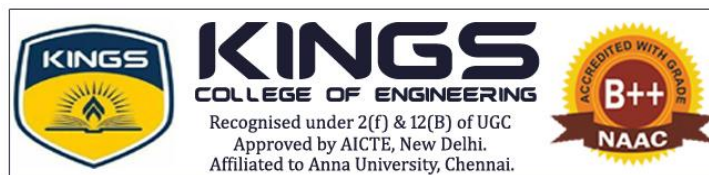
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INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN CIVIL AND MECHANICAL ENGINEERING (RACME)

PROGRAMME SCHEDULE

27th April 2023	
Time	**Events**
09.00 – 10.00 a.m.	Registration
10.15 a.m.	*Inaugural Function* @ **Chera Hall**
10.20 a.m.	**Welcome Address** Dr.J.Arputha Vijaya Selvi, Conference Chair & Principal
10.30 a.m.	**Lighting of Lamp**
10.40 a.m.	**Honouring the Guests**
10.45 a.m.	**Presidential Address** Dr.R.Rajendran, Secretary & Conference Patron, Kings College of Engineering
11.00 a.m.	**Inaugural Address** Dr. Tanmay Basak, Professor, Department of Chemical Engineering, Indian Institute of Technology Madras, Chennai
11.30 a.m.	**Release of Conference Proceedings**
11.35 a.m.	Refreshment
11.45 a.m.	*Invited Talk: "Natural Convection and Distributed Solar Heating Applications".* Dr. Tanmay Basak, Professor, Department of Chemical Engineering, Indian Institute of Technology Madras, Chennai @ **Chera Hall**
11.45 a.m.	*Invited Talk:* **Dr.Shankar Karuppannan,** Department of Applied Geology, Adama Science and Technology University, Adama, Ethiopia @ **Pallava Hall**
01.00 p.m.	*Lunch Break*
01.45 p.m.	**Technical Session – Parallel Session of Civil and Mechanical at designated Presentation Halls**
	Tea Break
04.15 p.m.	**Valedictory Function** @ **Chera Hall**
	Feedback from participants
	Conference Summary – Dr. P.P. Shantharaman, Convener – RACME
	Distribution of Certificates
	Vote of Thanks – Dr. R. Saravanan, HoD/Civil
	National Anthem

Guest Profile

Dr. Tanmay Basak

Professor, Department of Chemical Engineering,

Indian Institute of Technology Madras,

Chennai

Dr Basak has been trained on finite element method in Thermo-Fluids. Finite element based simulations emanated from his in-house computer codes are applied in Thermo-Fluids area: `microwave heating in dielectrics' and `thermal & mixed convection in various cavities'. Microwave heating analysis has been broadly applied for 1D and 2D dielectrics where Dr Basak & coworkers elucidate on resonance of waves and counter-intuitive heating pattern. CFD simulations are focused on natural and mixed convection within various cavities to elucidate energy flow visualization via heatlines and efficiency via entropy generation minimization. Fundamentals of convection have also been studied on multiple steady states with various flow and thermal maps associated with bifurcation patterns. Works on microwave heating appear over 60 journal papers while CFD simulations have been appeared in 140+ journal papers. Till date, Dr Basak authored around 225 International journal publications which received around 9000 citations (Google Scholar Report).

Dr. Shankar Karuppannan

Professor

Department of Applied Geology, Adama Science and Technology

University, Adama, Ethiopia

Dr. Shankar Karuppannan is working as an assistant professor in the Department of Applied Geology, School of Applied Natural Sciences (SoANS), Adama Science and Technology, Adama, Ethiopia. Dr. Shankar received his PhD degree in Applied Geology (Hydrogeology, Remote Sensing and GIS) from the Department of Earth Sciences, Annamalai University, India. He has successfully carried out research projects in collaboration with overseas and local researchers through the financial support of the Union Grants Commission, India, and Adama Science and Technology University ranked second-best research projects at the School of Applied Natural Sciences in 2018. He is also an active researcher in the fields of hydrogeology, environmental hydrogeochemistry, remote sensing, and GIS applications.

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