2024 International Conference on E-mobility, Power Control and Smart Systems (ICEMPS 2024)

Thiruvananthapuram, India
18-20 April 2024

IEEE Catalog Number: CFP24UK7-POD
ISBN: 979-8-3503-9440-5

Copyright © 2024 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number: CFP24UK7-POD
ISBN (Print-On-Demand): 979-8-3503-9440-5
ISBN (Online): 979-8-3503-9439-9

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Industrial Automation and Implementation of Coconut Breaking System 1
Mayoorika Venu, G.K. Nisha, P. Sandhya, B Vaishnav Dev, Vivin John Thomas, J S Tomin

Utilizing SVM, CNN to Predict Alzheimer's Disease 7
Peddi Bharath, Pillella Jaswanth, Pnss Pranav, Chandana Shamshita Voleti, V Anitha

A Compact Automatic Utensil to Convert Kitchen Waste into Organic Fertilizer for Plants 12
C. Maheswari, B. Harshita Jane, N. Mallinirmalraj, K. P. Logesh, S. Albert Alexander Stonier

Schnorr Multi-Signatures with Key Aggregation for Privacy and Verifiable Randomness in Blockchain Cloud 18
Badugu Ranjith Kumar, M. Victor Jose, J. R. Jeba

Energy Optimization in Induction Furnaces and Rolling Mills for Medium-Scale Industries Through Energy Efficient Power Conversion Systems and Best Operational Practices 24
Aneesh Rajendran, Devendra L Deshmukh, Nehal Gupta, Aswin T, Vaibhav Sharma, Bhawani Singh Chundawat

Automatic Control of Solar-Powered Battery System with Maximum Power Point Tracking 30
Joshua Radeen, P Sandhya

AI-Enhanced Precision Crop Rotation Management for Sustainable Agriculture 35
Hafiyya R M, Jemsheer Ahmed P, Nabhan P A, Safvan Melethil, Nadhi Mohammed, Muhammed Murshid A P

FitCraft - Redefining Tailoring Precision Through Advanced Computer Vision and Machine Learning Integration 41
Mohammed A Najeebulla, Jemsheer P Ahmed, Mohammed V Thanveer, Mohammed Ummer Mukthar, P Mohammed Mahasooqe, T Mohamed Nuhman

Machine Learning Based Capacity Prediction of Lithiumion Batteries Using Charging Characteristics 47
Shalini Dwivedi, Aparna Akula

Enhancing Hyperspectral Image Classification Performance Using Adaptive Spectral Band Selection and Clustering-Based Mutual Information (ASBS-CMI) 53
A. Nisha, A. Anitha

Review of Autonomous Mobile Robots 58
Krishna S. Chinmay, G. K. Nisha

Body Language Recognition System for Communication Quality Enhancement 63
M Maharasi, V Nandhini, I Trisha

Optimization of PI Controller for Coupled Tank Systems Using Genetic Algorithm 68
Aishwarya Yadav, Vijaya Laxmi

Green Cloud: Navigating to a SustainableFuture Through Green Cloud Computing 74
Ramandeep Sadhu, Harpreet Kaur, Vishal Pattanaik

Smart Signal Speed Control System 79
Aiswarya Krishna, Taniya Jose, Ashin Antony, Fatima, Neethu Mary Raju, G.S. Vidya

Leakage Reduction on Universal Gates Using ONOFIC Technique 85
Anitha P Bose, N Santhi

Closed Loop Control of Three Level NPC Induction Motor Drive for Water Pumping Application 90
O. Praveen O, G.K. Nisha

Ferranti Effect on a Pi Model of an Overhead Transmission Line - a Detailed Analysis 95
Samat Iderus, Geno Peter, Vijayakumar Arun, Dishore Shunmugham Vanaja, A. R. Gayathri, Albert Alexander Stonier

Ocean Wings-Human Identification Using Drone for Sea Rescue Operations..... 101
K.G Sruthy, A.P. Sulthana Rinsy, R.M. Hafiyya, M. Hanan, K. Gokul Dev, Jithamanue Anand, Fairooz M. Muhammed

AI Based Early Flood Monitoring and Detection 106
Mohamed Nihal, Deena Aji, Arjun Prabhakaran, Kens Philip Siby, Leno Simon Anand, Vidyamol K

Detection of Water Quality in Sediment Filter for Water Purification System 111
T. Kalavathidevi, R. Mouleeshuwarapprabu, E. B. Priyanka, V. K. Shubhashree, K. Srihariramana, T. G. Thilochan

Cricket Player Prediction of Role in a Team Using ML Techniques 117
Myreddy Kumar Durga Trinadh, S. Tresa Sangeetha, K Deepa, Vivek Venugopal

Investigating the Effectiveness of Algorithms in Serverless Cloud Computing..... 122
Mayank Jindal, Sushant Mimani, Saniaikanth E Vadakkethil Somanathan Pillai, Nasmin Jiwani, T. Kiruthiga

Evaluating Resource Allocation Strategies in Mobile Ad Hoc Networks with Cloud Computing Algorithms..... 129
Sanjaikanth E Vadakkethil Somanathan Pillai, Mayank Jindal, Sushant Mimani, Nasmin Jiwani, T. Kiruthiga

Feasibility of Wide Area Network Traffic Distribution in Cloud Computing Enabled Wireless Networks 136
Sushant Mimani, Sanjaikanth E Vadakkethil Somanathan Pillai, Mayank Jindal, Nasmin Jiwani, T. Kiruthiga

Dynamic Scheduling Algorithms for Serverless Computing Solutions in the Cloud 143
Abdul Sajid Mohammed, Venkata Ramana Saddi, Santhosh Kumar Gopal, Nasmin Jiwani, J. Logeshwaran

Exploring the Quality of Service Impacts of Cloud Computing Over Wireless Networks..... 150
Santhosh Kumar Gopal, Abdul Sajid Mohammed, Venkata Ramana Saddi, Nasmin Jiwani, J. Logeshwaran

Torque Ripple Reduction of SynRM Using Rotor Structure Modification 156
M P Nikhila, V P Mini, R Harikumar, N Mayadevi, M Sabna

Uncovering the Benefits of Machine Learning for Automating Financial Regulatory Tasks..... 162
Sagar Varma Samanthapudi, Piyush Rohella, Sheetal Temara, Ketan Gupta, S. Dhanasekaran

Utilizing Genetic Algorithms for Detecting Congenital Heart Defects 168
Sachin C. Patil, Balaram Yadav Kasula, Vazeer Ali Mohammed, Ketan Gupta, T. Thamaraimanalan

Using AI and Natural Language Processing to Enhance Consumer Banking Decision-Making 174
Sheetal Temara, Sagar Varma Samanthapudi, Piyush Rohella, Ketan Gupta, S.R. Ashokkumar

Investigating the Role of AI in Personalized Consumer Banking Experiences 180
Piyush Rohella, Sheetal Temara, Sagar Varma Samanthapudi, Ketan Gupta, K. Suganyadevi

Ferranti Effect on a T- Section Model of an Overhead Transmission Line – a Detailed Analysis 186
Samat Iderus, Geno Peter, Vijayakumar Arun, Dishore Shunmugham Vanaja, K. Ezhil Vignesh, Albert Alexander Stonier

Android Based App Development for Remote Logging and Control with Smart Home Watering System 192
Abhilasha Dhanraj, Soumil Sharma, Divyanshu Pethe, Mousumi Bhanja

Switching Loss Analysis and Efficiency Comparison of DS-LCL and L2CL-LCL Compensation Systems in Wireless Power Transfer 198
Jenson Jose, Jose P. Therattil, T. Jarin, B. Deepanraj, M. Sumbwanyambe

DC-DC Converter with Wide Voltage Conversion Ratio and Improved Current Capability for Charging Ultracapacitor Bank 204
P P Parvati, M P Shreelakshmi

DriveQ: A Dedicated Vehicle-To-Vehicle Communication System for Enhancing Road Safety and Traffic Management 210
K. S. Sunil, Alan Biju, Aiswarya, Arun G, Prince V Joy, R Rathul Krishnan

Unlocking the Future of Stroke Diagnosis-Bayesian CNN and MRI Fusion 216
Beevi Fathima M, N. Santhi, N. Ramasamy

Case Study on Predictive Modeling of UAV Battery Remaining Useful Life Using Machine Learning Regression Techniques 221
Polu Sainadh Reddy, K Deepa, S. Tresa Sangeetha

A Context-Aware Emergency Assistance Chatbot Employing Recurrent Neural Networks for Personalized First Aid Guidance 226
Jivantika Gulati, Ramakrishnan Raman

Closed-Loop Speed Control of BLDC Motor Using Flyback Converter for Electric Vehicle Applications 231
N L Surasmi, S Anjana, Titto S Babu, R S Rahul, S S Vignesh

Data-Driven Drive Safety with Cloud-based Adaptive Cruise Control Using K-Nearest Neighbors Algorithm 237
Subramani Roy Choudri, T. J. Nagalakshmi, Peddi Sai Krishna, K. Balasubadra, S K Mouleeswaran, S. P. Maniraj

State of Health Estimation for Lithium-Ion Batteries Based on Charging Curve and Machine Learning 243
Sachin Patel, Sushant Khade

Embedded Floating Bag for Military Use 249
Rashmi. L. Sharma, Komal. K. Misal, Kajal. S. Raskar, Pramod. R. Dhepe

Charging Up the Future: Capacitive and Inductive Wireless Power Transfer 254
P Sandhya, G K Nisha, S.S Aiswarya

Predicting Warehouse Location of Online Shopping Platforms with Machine Learning Algorithm – A Case Study 260
T H Hrithik, K Deepa, S. V. Tresa Sangeetha

Disturbance Estimation and Rejection in an Underwater Autonomous Vehicle 265
Ann Reji Thomas, P S Lal Priya, R Hari Kumar

Obstacle Avoidance in Snake Robot Navigation Using Artificial Potential Field 271
Gowthami Krishna, P S Lal Priya, R Hari Kumar

Choosing LS-Stat Confidence Scores for Neural Networks Predictions 277
Hubert Kyerematen-Boateng, Darsana Josyula

Combined Model of Incineration and Dispenser for Sanitary Napkins 283
Mayuri B. Gawande, Lalesh V. Kokat, Neeta D. Jakate, Abhijeet A. Kodlinge

How Robotic Process Automation and Blockchain Can Work Together? 287
Dileep Kumar Yendluri, Jainath Ponnala, Ramya Thatikonda, M. Kempanna, Reshmi Tatikonda, A. Bhuvanesh

Viability of Long Short Term Memory Networks in the Health Prediction of Lithium-Ion Batteries 293
V. S Sidharth, R. S Praveen Raj

Evolving Energy Landscapes: A Comprehensive Analysis of Renewable Power in the 21st Century 299
Gopalam Rahul Malik, Nallabothu Chidvilash, Borra Niteesh, Somanaboina Mani Teja, Chagarlamudi Rama Krishna Prasanth, Vishakh Hariharan, Manjula G Nair

Leveraging Deep Learning Models for Accurate and Reproducible Cardiac Measurements in Echocardiography 306
Aleksandar Stojmenski, Martin Mihajlov

Enhancing Network Security: A Comparative Analysis of Deep Learning and Machine Learning Models for Intrusion Detection 312
Arunima Ajeesh, Tessy Mathew

A Robotic Manipulator with Conveyor System for Visual Sorting of Work Pieces 318
Adarsh V S, Jedin Jebi Mathew, Joseph Mathew Thuruthiyil, Sidharth Sunil, Georgina Binoy Joseph

IoT-Based Flood Early Warning System for Effective Disaster Management 324
Ramakrishnan Raman, Syed Mohd Uzair Iqbal

Semi-Autonomous Robotic System for Efficient Recycling of Lithium-Ion Batteries 329
Shreyash Gadgil, Durva Gaikwad, Bijo Sebastian, Alpana Dubey, Abhinav Upadhyay

Functional Electrical Stimulation with Machine Learning for Stroke Prediction and Rehabilitation 336
Abhinav Suresh, R S Abhishek, P Akash, B Anudev, K H Vishakh

Malware Detection Using a Novel Machine Learning Dynamic Ensemble Classification Approach 344
Srinivasa Rao Dangeti, PBV Raja Rao, A Satya Mallesh, M Suma Bharati, Yesujyothi Yerramsetti, Yeddu Sabitha

Secured and Transparent Transactions Using IOTA Tangle Distributed Ledger Technology in Dairy Supply Chains 349
Sajeesh Eringotkavil Raman, D. Venkatramaraju

Load Flow of Radial Distribution Network by Using Artificial Neural Network 355
Cyril K. Babu, J. S. Savier

Lane Detection Using Hough Transform and Kalman Filter 361
Rajesh Kannan Megalingam, Nidhin Chuzhiyil Pradeep, Aswin Reghu, Sreesankar Ajith Sreemangalam, Abdul Ayaaz, Avinash Hegde Kota

Annapoorna – Food, Water and Medicine Delivery Teleoperated Robot with Telemedicine Facility 366
Rajesh Kannan Megalingam, Sakthiprasad Kuttankulangara Manoharan, Avinash Hegde Kota

Grid Integrated Hybrid Renewable Energy System for Power Quality Improvement Using Open End Winding Transformer 372
N L Surasmi, G Shiny, B R Vinod

Next-Generation Traffic Control: Adaptive Timer and Emergency Vehicle Priority in Intelligent Traffic Management 378
S G Devika, A Govind, D Lekshmi

Interactive Learning: Travelling Through History Using Augmented Reality 384
Sanchit Vashisht, Bhanu Sharma

GhoomAR: Experience the Rich Heritage and Culture Using Augmented Reality 390
Sanchit Vashisht, Bhanu Sharma

Enhancing Your Car-Buying Experience: Augmented Reality for Color Customization 395
Lav Soni, Amanpreet Kaur

Innovating with Arduino and Unity: Building Bridges Between Physical and Digital Environments 400
Lav Soni, Amanpreet Kaur

Advanced Monkeypox Classification Using EfficientNet B3: A Promising Method 405
Poonam Shourie, Vatsala Anand, Deepak Upadhyay, Vijay Singh, Sheifali Gupta, G Sunil

Mapping AI's Influence on Cardiac Healthcare: A Bibliometric Analysis (2014-2023) 410
Tanishq Soni, Deepali Gupta, Mudita Uppal

Enhanced Classification of Turmeric Leaf Disease Severity Levels Using an Optimized Hybrid Deep Learning Model: LevelPrecisionRecallF1-ScoreAccuracy 415
Vishesh Tanwar, Vatsala Anand, Rahul Chauhan, Ramesh Singh Rawat, Gotte Ranjith Kumar

Advancements in the Internet of Medical Things in Healthcare: A Comprehensive Systematic Review 420
Tanishq Soni, Deepali Gupta, Mudita Uppal

Exploring the Influence of DJ-2D/3D Absorber Layer Thickness on TiO_2-Based Perovskite Solar Cell Performance 426
Aniket Verma, Nikhil Shrivastav, Jaya Madan

Increasing Photovoltaic Efficiency in $FASnI_3$-Based Solar Cells by Minimizing Interface Defect Density 430
Aniket Verma, Nikhil Shrivastav, Jaya Madan

Playing Cards Classification and Detection Using Sequential CNN Model Through Machine Learning Techniques Using Artificial Intelligence 434
Khushi Mittal, Kanwarpartap Singh Gill, Rahul Chauhan, Manish Sharma, G Sunil

Evaluating the MobileNet50 CNN Model for Deep Learning-Based Maize Visualisation and Classification 438
Muskan Agarwal, Kanwarpartap Singh Gill, Rahul Chauhan, Hemant Singh Pokhariya, Kanegonda Ravi Chythanya

Incorporating the CatBoost Classification Method in Machine Learning Applications for Smote Analysis and Bankruptcy Data Equalisation 444
Muskan Singla, Kanwarpartap Singh Gill, Mukesh Kumar, Ruchira Rawat, Srinivas Aluvala

The Use of a K-Nearest Neighbour Classifier and Other Machine Learning Techniques for Exploratory Data Analysis of Red Wine Quality 449
Nishant Pritam, Kanwarpartap Singh Gill, Mukesh Kumar, Ruchira Rawat, Kanegonda Ravi Chythanya

Utilizing Cutting-Edge Deep Learning Strategies and Harnessing the Power of a Pre-Trained ResNet18 Convolutional Neural Network for Assessing the Risk of Autism 455
Muskan Singla, Kanwarpartap Singh Gill, Priyanshi Aggarwal, Ramesh Singh Rawat, Yerrolla Chanti

Improving Bankruptcy Forecasting Through the Integration of a Resilient Analysis-Infused Classifier and Harnessing the Power of DenseNet121 Convolutional Neural Network Within Deep Learning Frameworks 461
Muskan Singla, Kanwarpartap Singh Gill, Deepak Upadhyay, Swati Devliyal, Kanegonda Ravi Chythanya

In-Depth Analysis of Exploratory Data Utilizing an InceptionV3 Convolutional Neural Network (CNN) Framework and Deep Learning Techniques for Predicting the Quality of Red Wine 466
Khushi Mittal, Kanwarpartap Singh Gill, Rahul Chauhan, Manish Sharma, G Sunil

Investigating the Impact of Temperature on the Photovoltaic Properties of $CsSnI_3$-Based Perovskite Solar Cells 471
Savita Rawat, Jaya Madan

Analysing the Electrical Fault Detection and Classification Capabilities of a Decision Tree Classifier 476
Khushi Mittal, Kanwarpartap Singh Gill, Rahul Chauhan, Hemant Singh Pokhariya, Srinivas Aluvala

Exploring Photovoltaic Efficiency in Perovskite Solar Cells with $CsSnCl_3$: The Role of Absorber Layer Thickness 481
Savita Rawat, Jaya Madan

Comparative Analysis of Power and Hardware Utilization of FPGA Using RSA Algorithm 485
Shishir Shrivastava, Vaneeta Bhardwaj, Amanpreet Kaur

Exploring Efficiency Optimization in Lead-Free Cs_2TiBr_6 Perovskite PV Cells Through SCAPS-1D Simulation 490
Vishal Yadav, Rahul Pandey

Stress Detection Using EEG Signals: A Review on Current Strategies and Future Aspects 494
Anmol Rattan Singh, Gurjinder Singh, Nitin Saluja

Deep Learning for Precise Rice Multi-Class Classification:Unveiling the Potential of CNNs 500
Ricky Rajora, Himakshi Gupta, Sonal Malhotra, Swati Devliyal, G Sunil

Hybrid CNN & Random Forest Model for Effective Fenugreek Leaf Disease Diagnosis 505
Varun Kumar, Deepak Banerjee, Deepak Upadhyay, Mukesh Singh, Kanegonda Ravi Chythanya

CNN-Random Forest Hybrid Model for Improved Ginger Leaf Disease Classification.....511
Varun Kumar, Deepak Banerjee, Deepak Upadhyay, Mukesh Singh, Kanegonda Ravi Chythanya

Hybrid CNN & Random Forest Model for Effective Marigold Leaf Disease Diagnosis 517
Varun Kumar, Deepak Banerjee, Deepak Upadhyay, Mukesh Singh, Kanegonda Ravi Chythanya

Hybrid Model for EffectivePapaya Leaf Disease Diagnosis 523
Varun Kumar, Deepak Banerjee, Deepak Upadhyay, Mukesh Singh, Kanegonda Ravi Chythanya

Hybrid CNN & Random Forest Model for Effective Rosemary Leaf Disease Diagnosis..... 528
Varun Kumar, Deepak Banerjee, Deepak Upadhyay, Mukesh Singh, Kanegonda Ravi Chythanya

Design and Analysis of Ternary Full Adder Based on FinFET Models..... 534
Mohit Kumar Goel, Kulbhushan Sharma

An Investigation on Machine Learning Models in Classification and Identifications Cervical Cancer Using MRI Scan..... 539
Jagendra Singh, Kuan Tak Tan, Dinesh Sahu, Kamal Upreti, Pravin R. Kshirsagar, Muniyandy Elangovan

Investigating Personalized Learning Paths to Address Educational Disparities Using Advanced Artificial Intelligence Systems 544
Megha Chauhan, Hairur Rahman, D Srinivas Reddy, Abhishek Sharma Padmanabhan, T. Thirumalaikumari, G. Charles Babu

Deep Learning Architectures for Alzheimer's Disease Classification Using Convolutional Neural Networks 550
Rahul Singh, Abhishek Pal, Rahul Chauhan, Hemant Singh Pokhariya, Aakriti Shory, Aakshi Gulati

Object Localization and Recognition in High Resolution Satellite Image Using U-Net in CNN 556
Niroshini C Infantia, M Revathi, R Nathasri, TMNishitha Riya

Design and Development of Post Harvest Seed Processing 561
R. Mouleeshuwarapprabu, T. Mrunalini, T. Kalavathi Devi, K. Surya, K. Sathyanandhan, S. P. Sri Priyangka

Enhancing Flower Classification Through Deep Learning: A Comprehensive Investigation 566
Rahul Singh, Ricky Rajora, Rahul Chauhan, Swati Devliyal, Aarju Rajora

Performance Evolution of Switched Capacitor Boost Nine Level Inverter with Variable Frequency APOD Technique..... 572
Samat Iderus, Geno Peter, Vijayakumar Arun, Dishore Shunmugham Vanaja, K. Ezhil Vignesh, Albert Alexander Stonier

Pisces Bot 578
A Abhijith, A J Ananth, B R Gautham, Rahul S Nair, Manju Sreekumar, P Sandhya

Author Index