

2024 IEEE 14th International Conference on Control System, Computing and Engineering (ICCSCE 2024)

**Penang, Malaysia
23-24 August 2024**



**IEEE Catalog Number: CFP2414R-POD
ISBN: 979-8-3503-6451-4**

**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:	CFP2414R-POD
ISBN (Print-On-Demand):	979-8-3503-6451-4
ISBN (Online):	979-8-3503-6450-7

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

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

	Page
<i>Organizing Committee</i>	iii
<i>Reviewers</i>	iv
<i>Table of Contents</i>	vi
 <i>Paper Title & Authors</i>	
Analysis of Power Consumption and Maximum Demand on Power Factor Using Support Vector Machine Regression	1
Siti Nursyafiqah Md Isa, Kamarulazhar Daud, Mohammad Nizam Ibrahim, Ahmad Asri Abd Samat, Saodah Omar and Mohd Affandi Shafie	
Enhancing High-Value Asset Security: RFID based Anti-theft System Evaluation and Optimization	7
Syed Muhamad Solahuddin Syed Zainal Abidin, Shabinar Abdul Hamid, Zuraida Muhammad, Nor Adni Mat Leh, Samihah Abdullah, Siti Juliana Abu Bakar and Solahuddin Yusuf Fadhlullah	
Identification of Lung Lesions in Computed Tomography Scan Images using Machine Learning Techniques	13
Mohd Firdaus Abdullah, Siti Noraini Sulaiman, Muhammad Khusairi Osman, Noor Khairiah A. Karim, Adi Izhar Che Ani and Nurfadzilah Ahmad	
Machine Learning Approaches for Sentiment Analysis on Balanced and Unbalanced Datasets	18
Ahmed M. ElMassry, Abdulla Alshamsi, Ahmed F. Abdulhameed, Nazar Zaki and Abdelkader Nasreddine Belkacem	
Monitoring Water Quality for Catfish Ponds Using PID Control with Internet of Thing	24
Zuraida Muhammad, Nuramirah Md Jafri, Shabinar Abd Hamid, Siti Juliana Abu Bakar and Nor Adni Mat Leh	
Optimized Feature Selection based approach for Predicting Cardiovascular Disease Risk in Indian Population	29
Abha Marathe, Virendra Shete, Suraj Ingole and Tabrez Pathan	
Performance Comparison of Breathing Signal Classifiers Using Machine Learning Techniques	35
Nur Fatin Shazwani Nor Razman, Haslinah Mohd Nasir, Suraya Zainuddin, Noor Mohd Ariff Brahini, Mohd Syafiq Mispan, Idnin Pasya and Nur Haliza Abdul Wahab	
PSO-optimized U-Net for Automatic Retinal Optic Disk Segmentation	41
Audrey Huong and Xavier Ngu	
Enhancing Pharmacokinetic Modeling with Fractional-Order Kinetics and Deep Learning	46
Junting Zou, Mohd Rizal Arshad and Ziyang Wang	

Enhancing Lung Cancer Classification: Leveraging Existing Convolutional Neural Networks within a 1D Framework	52
Nurul Najiha Jafery, Siti Noraini Sulaiman, Muhammad Khusairi Osman, Noor Khairiah A. Karim and Zainal Hisham Che Soh	
Covid-19 Chest X-Ray Classification using Convolutional Neural Network	58
Mateab Abdullah Abdo Ali Moqbel, Muhammad Dinul Ikram Mohd Radzi, Nurul Hazwani Abd Halim, Zainal Hisham Che Soh, Muhammad Khusairi Osman and Zuraidi Saad	
Crack Detection on Asphalt Road in Malaysia using UAV Images and YOLOv4	64
Mat Nizam Mahmud, Muhammad Khusairi Osman, Ahmad Puad Ismail, Fadzil Ahmad, Khairul Azman Ahmad, Anas Ibrahim and Azmir Hasnur Rabiani	
Integrating AI-Driven Robust Control Algorithm with 3D Hand Gesture Recognition to Track an Underactuated Quadrotor Unmanned Aerial Vehicle (QUAV)	70
Ibrahim Emad Al-Shayeb, Ghulam E. Mustafa Abro, Fawad Salam Khan, Rozan Boudville and Ayman M. Abdallah	
Recent Constraints and Challenges in Battery Management System of EVs – A Brief Review	76
Faizan Zahid, Ghulam E. Mustafa Abro, Rozan Boudville, Noureen Talpur and Summaiya Rajput	
Modernizing Home Protection: An IoT-Driven Approach with Smart Lock and Android Application	82
Summaiya Rajput, Noureen Talpur, Rozan Boudville, Ghulam E. Mustafa Abro, Beenish Talpur and Faizan Zahid	
Transforming Oil Palm Plantations: Leveraging Data Link using TV White Space, 5G and Wi-Fi for Robotic Agriculture	88
Shahrol Hisham Baharom, Mohammad Fairus Khalid, Muhammad Nurmahir Mohamad Sehmi, Bukhary Ikhwan Ismail and Hishamadie Ahmad	
YOLOv9-Based Hotspots Recognition in Solar Photovoltaic Panels: Integrating Image Processing Techniques for Targeted Region Identification	94
Mohd Zulhamdy Ab Hamid, Kamarulazhar Daud, Zainal Hisham Che Soh, Muhammad Khusairi Osman, Iza Sazanita Isa and Mohd Shawal Jadin	
Analysis of Logic Synthesis Results with various Technology Nodes for RISC-V Design	100
Siu Hong Loh, Yenn Nee Koay, Kim Ho Yeap and Jia Jia Sim	
Optimizing Stand-Alone Photovoltaic-Battery System Sizing Through Meta-Heuristic Optimization Algorithms	106
Iman Zulfakeem Shuhaimi, Nur Atharah Kamarzaman, Nor Adni Mat Leh and Intan Rahayu Ibrahim	
An Optimized Harris Hawks Algorithm for Enhancing ANN Performance in Prediction Tasks Applied in Sales Domain	112
Bibi Aamirah Shafaa Emambocus, Muhammed Basheer Jasser, Shou Heng Tan, Samuel Mofoluwa Ajibade, Hui Na Chua, Richard T. K. Wong and Ahmad Sahban Rafsanjani	
Impact of Dust Deposition on PV Performance and Hotspot Generation: I-V and Thermal Analysis with SEM and UV-VIS-NIR	118
Md. Imamul Islam, Mohd Shawal Jadin and Ahmed Al Mansur	
Impact of Class Labeling on Myocardium Segmentation using Cascaded Deep Learning for Improved Myocardial Infarction Segmentation	124
Dayang Suhaida Awang Damit, A'isyah Nadiyah Hilmi, Siti Noraini Sulaiman, Muhammad Khusairi Osman, Noor Khairiah A. Karim and Nor Adni Mat Leh	

Influential Factors Shaping Purchase Intentions Among Malaysian Generation Z Consumers During Flash Sales Promotions	129
Jia Jia Sim, Yoke Teng Saw, Ley Hui Tin and Siu Hong Loh	
Assessing the Early Performance of Bifacial Floating PV System: A Comparative Study	135
Md. Imamul Islam, Mohd Shawal Jadin and Ruhaizad Ishak	
Performance Evaluation of 10G-PON FTTH Access Networks	141
Sura Adil Abbas, Aya Hasan Abdulqader and Yaseen Naser Jurn	
Analyzing Model Order Estimation in Industrial Hydraulics System using Open Loop Identification	144
Nur Husnina Mohamad Ali, Rozaimi Ghazali, Nayli Razhani, Hazriq Izzuan Jaafar, Muhammad Fadli Ghani and Chong Chee Soon	
Microcalcification Detection for Digital Breast Tomosynthesis Images Using Faster-RCNN	150
Nur Athiqah Harron, Siti Noraini Sulaiman, Muhammad Afiq Iqmal Mohammad Nizam, Noor Khairiah A. Karim, Adi Izahar Che Ani and Syafiqah Aqilah Saifudin	
Lightning Protection Scheme Induced Current for Large-Scale Solar Photovoltaic Systems	156
Nurul ‘Aini Mohamad Zakaria, Mohd Najib Mohd Hussain and Kanendra Naidu Vijyakumar	
A Review of RF Based Drone Detection, Direction of Arrival and Identification Techniques	162
Yaseen N. Jurn, Zeyid T. Ibraheem and Nashwan Dheyaa Zaki	
Current Landscape of Generative AI: Models, Applications, Regulations and Challenges	168
Yue Hern Tan, Hui Na Chua, Yeh-Ching Low and Muhammed Basheer Jasser	
ROS Integration and Evaluation for Robot Navigation in a Narrow-Path Indoor Environment	174
Lilian Wei Fang Ung, Richard T. K. Wong, Kok Seng Eu, Muhammed Basheer Jasser and Bayan Issa	
A Low Cost and User Friendly Graphical User Interface for Programmable and Flexible FES	180
M. A. M. A. Halim, E. Noorsal, Z. Hussain, S. Z. Yahaya, A. N. A. Rashid, Y. M. Ali, S. Z. M. Saad and S. Arof	
CNN-Based Classification of Acute Myeloid Leukemia Blood Samples	186
Abdul Rahim Ahmad, Nuramirah Aiman Zainudin, Muhammad Dinul Ikram Mohd Radzi, Nurul Hazwani Abd Halim, Muhammad Khusairi Osman and Zuraidi Saad	
Brainwave Patterns and Anxiety Symptoms Among Young Adult Females: An Exploratory Study	192
Mei-Yi Wong, Soon Keng Cheong and Poh Foong Lee	
Letters Recognition System by Deep Convolutional Neural Network	197
Duaa Mowafak Hameed, Raid Rafi Omar Al-Nima, Mustafa Ali Malla and Khalil A. K. Al-Maqsood	
Automated CNN-based Semantic Segmentation for Thermal Image of Solar Photovoltaic (PV) Panel	203
Nurul Huda Ishak, Iza Sazanita Isa, Muhammad Khusairi Osman, Kamarulazhar Daud, Mohd Zulhamdy Ab Hamid and Mohd Shawal Jadin	

Dysgraphia Handwriting Image Augmentation for CNN Model Classification Nurhani Harun, Iza Sazanita Isa, Siti Azura Ramlan, Muhammad Khusairi Osman, Mohd Ikmal Fitri Maruzuki	209
A Lightweight Convolutional Neural Network for Rice Diseases Classification Mohd Aniq Ismail, Mohamad Rahmat Rashid, Khairul Azman Ahmad, Samsul Setumin, Siti Juliana Abu Bakar and Adi Izhar Che Ani	214
Remote Monitoring Surveillance System via LabVIEW employing the use of Hybrid Renewable Energy Nor Salwa Damanhuri, Nur Sobrina Mahalel, Intan Rahayu Ibrahim, Nor Azlan Othman, Belinda Chong Chiew Meng and Rozan Boudville	220
Optimizing Photovoltaic Systems for Power Losses Reduction under Time-Varying Loads: A Coyote Optimization Approach S. S. M. Isa, M. N. Ibrahim, A. M. @ Ahmad, S. Nordin, N. Y. Dahlan and H. F. B. Jamahori	226
Development of IoT-based Headwater Phenomenon Monitoring and Warning System Rozan Boudville, Jamilah Mat Tapah, Ahmad Akif Farhan Mohd Yuzy, Nur Ain Izzaty Ahmad Johan, Muhammad Imran Daing and Nur Asmida Syahira Aliastar	232
Optimizing Photovoltaic Systems with an Incremental Conductance Algorithm Muhammad Haziq Haiqal Yahaya, Ahmad Asri Abd Samat, Samshul Munir Muhamad, Muhammad Nabil Afiq Nor Azari, Mohamad Adha Mohamad Idin and Mohd Muzafa Jumidali	237
Sizing and Cost Analysis of a Hybrid PV and Battery Energy Storage System for Residential and Commercial Buildings Employing Net Energy Metering Scheme Intan Rahayu Ibrahim, Ericson Jilum Anak Kilat, Nur Atharah Kamarzaman and Ahmad Asri Abd. Samat	243
Predicting Energy Consumption in Educational Buildings: A Comparative Study of Machine Learning Models Siti Solehah Md Ramli, Anuar Mohamad @ Ahmad, Mohammad Nizam Ibrahim and Kamarulazhar Daud	249
Enhancing Output Smoothness in AC-AC Converters: THDv Reduction with Bidirectional Exclusive Switches Mohd Shafie Bakar, Nurul Amira Ibrahim, Abu Zaharin Ahmad and Mohd. Shawal Jadin	255
An Autonomous Wheelchair Vision System: Detection of Potholes for Outdoor Maneuvering M. S. Mohd Ghazali, S.Z. Yahaya, K. A. Ahmad, M. F Abd Rahman, E. Noorsal and R. Boudville	259
Machine Learning Model to Enhance the Quality of Software Development Risk Management Mohamed Ahmed Hamada	265
Innovative Kenaf-Brick Composite for Effective Microwave Absorption Norhayati Mohamad Noor, Hasnain Abdullah@Idris, Mohd Nasir Taib, Mas Izati Fazin, Muhammad Amirun Zafri, Nazirah Mohamat Kasim, Azizah Ahmad, Linda Mohd Kasim and Noor Azila Ismail	271
PID-DTC Controller for Nonlinear Knee Extension Model with Time Delay Effect in Closed-Loop FES S. Arof, E. Noorsal, Z. Hussain, S. Z. Yahaya, Y. M. Ali, A. N. A. Rashid, S. Z .M. Saad, S. S. M. Sallah and H. Arof	276

System Reconfiguration to Control Knee Extension with Time Delay Nonlinearity in Closed-Loop FES	282
S. Arof, E. Noorsal, S. Z. Yahaya, Z. Hussain, Y. M. Ali, A. N. A. Rashid, S. Z. M. Saad, S. S. M. Sallah and M. K. Safie	
Road Image Deblurring with Nonlinear Activation Free Network	288
Mohd Ikmal Fitri Maruzuki, Muhammad Khusairi Osman, Aqmal Shafiq Shafie, Samsul Setumin, Anas Ibrahim, Hariyanti Mohd Saleh, Mohd Shukri Mohd Tahir and Azmir Hasnur Rabiain	
A Novel Application of MLP Networks in Classifying L Band Eco-Friendly Microwave Absorbers	294
Azizah Ahmad, Mohd Nasir Taib, Hasnain Abdullah, Nurlaila Ismail, Ahmad Ihsan Mohd Yassin, Linda Mohd Kasim, Norhayati Mohd Noor, Nazirah Mohamat Kasim and Noor Azila Ismail	
Microwave Absorption Performance of Multilayer Anti-Radiation Bricks for Sustainable Construction Materials	299
Linda Mohd Kasim, Hasnain Abdullah@Idris, Mohd Nasir Taib, Azizah Ahmad, Norhayati Mohamad Noor, Noor Azila Ismail, Nazirah Mohamat Kasim and Nurul Haida Hilmi	
A Bibliometric Analysis and Research Landscape of Artificial Intelligence in Education	304
Samuel-Soma M. Ajibade, Bayan Issa, Muhammed Basheer Jasser, Farrukh Hassan, Ghassan Saleh ALDharhani, Ismail Ahmed Al-Qasem Al-Hadi, Kayode Akinlekan Akintoye and Almighty Cortezo Tabuena	
Design of Digital System Identification Controller for a Nonlinear Knee Model in Closed-Loop Functional Electrical Stimulator (FES)	310
N. H. M. Muhan, E. Noorsal, S. Arof, M. K. Safie, Z. Hussain, S. Z. Yahaya and S. S. M. Sallah	
Personalized Food Recommendations: A Machine Learning Model for Enhanced Dining Choices	316
Mohammed Al-Hubaishi, Musab A. M. Ali and Nooritawati Md Tahir	
AI Opportunities and Risks for Students' Decision-Making Skill	321
Salim B. Al Maqbali and Nooritawati Md Tahir	
The Importance of Artificial Intelligence in Green Innovation	327
Essam Hussain Al Lawati, Musab A. M. Ali, Nooritawati Md Tahir	
Comprehensive Review to Build a Smart Guide for the Government E-services in Oman	333
Sana Fathima, Amal Al Abri, Fatma Al Shamli, Sara Shukaili, Moza Al Balushi, Mastan Vali Shaik and Nooritawati Md Tahir	
Sakanat: A Competent Mobile Application to Automate Real-Estate	339
Saeed Saud Sulaiman Al Qassabi, Wilfred Blessing N. R. and Nooritawati Md Tahir	
Evaluation of Turbidity Effect on Manganese Detection Based on Spectroscopy Approach	345
Nur Syafiqah Nadiah Mohd Zain, Mohamad Faizal Abd Rahman, Fatin Izyani Mohamad Robi, Khairul Azman Ahmad, Saiful Zaimy Yahaya and Rozan Boudville	
Author's Index	351