

2024 IEEE 15th Control and System Graduate Research Colloquium (ICSGRC 2024)

**Shah Alam, Malaysia
17 August 2024**

**IEEE Catalog Number: CFP2405K-POD
ISBN: 979-8-3503-8656-1**

**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:	CFP2405K-POD
ISBN (Print-On-Demand):	979-8-3503-8656-1
ISBN (Online):	979-8-3503-8655-4
ISSN:	2638-1710

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>Technical Reviewers</i>	iv
<i>Table of Contents</i>	vii
<i>Paper Title & Authors</i>	
New Anti-windup Control, SIPIC to Improve the Quadcopter Dynamical Performance Guan Heng Tan, Chun Haw Lai and Choon Lih Hoo	1
Water Quality Assessment Using Normalized Difference Index by Applying Remote Sensing Techniques: Case of Lake Nokoue Namwinwelbere Dabire, Eugene C. Ezin and Adandedji M. Firmin	7
Longitudinal Voltage Analysis Between High Voltage Power Cable and Adjacent Conductor & Cables in Railways Using Analytical Methods Zarismail Abd Rahman, Syarfa Zahirah Sapuan, Abdulrahman Amer and Mohd Fahrul Hassan	13
5GHz Wireless Data Communication System using Omnidirectional Antenna and UNII-1 in Urban Railway Application Muhammad Nur Hakim Nordin, Syarfa Zahirah Sapuan and Mohd Fahrul Hassan	17
Measurement and Mapping of Radiofrequency Electromagnetic Field (RF-EMF) Radiation Exposure in Malaysia’s Environment Roha Tukimin, Syarfa Zahirah Sapuan, Wan Syazlin Wan Yunoh and Nur Afrina Zainal	23
Malaysian Sign Language (MSL) Detection: Comparison of YOLOv5 and CNN Abdul Hadi Abdul Halim, A’zraa Afhzan Ab Rahim, Nur Athirah Rozaini, Siti Lailatul Mohd Hassan, Ili Shairah Abdul Halim and Noor Ezan Abdullah	29
Anti-Social Engineering: The Importance of Social Engineering Awareness Training Web Platform Asma Mahfoudh Hezam Al-Hakimi and Muhammad Hassan	35
Predicting the Factors to Use Behavior on Social Media as Telehealth Service among Generation Z using Structural Equation Modeling Alexander A. Hernandez, Maria Corazon D. Adriano, Charmaine Ann U. Peralta and Janette Princess Regina E. Dupaya	41
Development of Occupational Burnout Prediction Models using Machine Learning Techniques and Maslach Burnout Inventory Alexander A. Hernandez, Erlito M. Albina and Rustico P. Perez Jr.	47
Predicting the Adoption Intention and Use Behavior on Peer-to-Peer Lending Service in Small and Medium Enterprises in the National Capital Region, Philippines Alexander A. Hernandez, Frida Jessa T. Festijo, Michelle Lei S. Victorino and Janice E. Velasquez	52

Optimization of Control Performance in Crane Control: A Data-Driven Approach using MnHR-NEPID based on SED Algorithm	58
Mohd Riduwan Ghazali, Mohd Ashraf Ahmad, Mohd Helmi Suid and Goh Ming Qian	
Power Quality Disturbances Classification Analysis Using EfficientNet Architecture	64
Muhammad Danial Fitri Mat Zabidi, Shahrani Shahbudin, Saiful Izwan Sulaiman, Farah Yasmin Abdul Rahman and Hasnida Saad	
Optimizing Performance and Energy Efficiency of Agarwood Hydro Distillation Pot through Various PID Control	70
Nurul Nadia Mohammad, Muhammad Taufiq Abdul Fatah, Mohd Hezri Fazalul Rahiman and Najidah Hambali	
Improved Face Detection Method Based on Optimization Algorithm	76
Eman Jasim Mohammed and Ismail Taha Ahmed	
Use of Deep Learning for Liver Segmentation during Laparoscopic Cholecystectomy	82
Vahideh Ghobadighadikalaei, Luthffi Idzhar Ismail, Wan Zuha Wan Hasan, Haron Ahmad, Hafiz Rashidi Ramli, Nor Mohd Haziq Norsahperi, Anas Tharek and Fazah Akhtar Hanapiah	
Intruder Detection from Video Surveillance Using Deep Learning	87
Nur Nabilah Abu Mangshor, Nurbaity Sabri, Raihah Aminuddin, Nor Aimuni Md. Rashid, Nur Farahin Mohd Johari and Muhammad Adib Zaini Jemani	
Implementation of Facial Expression Recognition (FER) using Convolutional Neural Network (CNN)	92
Nur Nabilah Abu Mangshor, Norshahidatul Hasana Ishak, Muhammad Haiqal Zainurin, Nor Aimuni Md. Rashid, Nur Farahin Mohd Johari and Nurbaity Sabri	
Forecasting Iraqi GDP Using Artificial Intelligence	97
Marwan Abdul HameedAshour and Ammar Sh Ahmed	
Application of Artificial Intelligence in Malignant Tumors: A Science Mapping Analysis	102
Samuel-Soma M. Ajibade, Anwar P. P. Abdul Majeed, Muhammed Basheer Jasser, Ghassan Saleh ALDharhani, Ismail Ahmed Al-Qasem Al-Hadi and Ganesh Kumar	
Performance Analysis of Deep Learning Approaches on Traffic Controller Hand Gesture Detection for Autonomous Driving Cars	108
Alexander A. Hernandez, Arlene R. Caballero and Porsche L. Amo	
Hero Cyber Quest: Cybersecurity Awareness Training Mobile Application	114
Durgasuany Maniraja and Asmaa Mahfoud Al-Hakimi	
Optimization of Scheduling Algorithm for CA Toward QoS Model Requirements In LTE-A Network	120
Ahmed A. Ali Alsabri, Haitham Saleh Ben Abdelmula and Amel Abdysalam Alhaag	
Deep Recurrent Neural Network for Time Series Modelling of Energy in Wireless Sensor Network Nodes	126
Zoren P. Mabunga and Jennifer C. Dela Cruz	
Data-Driven Campus Management for Improved Transport, Communication and Lost Property	132
Kawisara Hemathulin, Kittiyaporn Duangkai, Pisitkorn Bootchada and Prasitthichai Naronglerdrit	
Comparative Assessment of Fuzzy Logic and PI Controllers for Ratio Control in Liquid Flow System	138
Nurul Fazlika Syahira Abdullah, Zalizawati Abdullah, Nor Hazelah Kasmuri, Fuzieah Subari and Suhaiza Hanim Hanipah	

The Development of a Commercial Aircraft Passenger Weight Measurement System	144
Wan Basri Wan Ismail, Malenee Chandran and Nycholas Phang Wye-Hung	
Design and Implementation of a Wireless Health Monitoring System for Real-Time Patient Data Using ESP32	149
Norsuzila Ya'acob, Syila Izawana Ismail, Muhammad Zakwan Mohd Amin and Nur Farhana Abdul Aziz	
Performance Investigation of Mobile Robot Collision Avoidance based on Stateflow: Simulation Approach	154
Fitria Tri Hastuti, Dirman Hanafi and Saif Huq	
Deep Neural Networks Selection for Lift Components Identification: Answering Industry-Specific Needs	160
Edy Jr. Tenorio Pascual and Hermawan Nugroho	
Technical Challenges and Breakthroughs in the Development of High-Efficiency DC-TENGs	164
Mohamed O. Abdelrahim and Lini Lee	
Classification of Severity Areas in Dengue Control Strategies Using k-Nearest Neighbours (kNN)	170
Wan Nur Afrina Wan Muhammad Azan, S. Sarifah Radiah Shariff, Siti Meriam Zahari, Nurakmal Ahmad Mustafa, Hadzri Zainal, Masmuna Solleh and Ahmad Zaki Hamdi Nor Azlan	
Evaluating Priorities of Environmentally Sustainable Port Performance using an Intuitionistic Fuzzy Analytical Hierarchy Process Approach	175
Muhamad Safuan Shamshol Bahri, S.Sarifah Radiah Shariff and Nazry Yahya	
A Simulation Analysis for Reverse Logistics in Automobile Subcon Industry	181
Muhammad Hakimi Haris, S. Sarifah Radiah Shariff, Siti Meriam Zahari and Bernardus Yulianto Nugroho	
Incorporating IoT into STEM education through PBL - Chicken Farming Issues	187
Hasnida Saad, Nur Farhana Nazihah Zaidi, Naimah Mat Isa, Shahrani Shahbudin, Noriza Othman and Marianah Masrie	
Dimensional Optimization of Open-Source 4-DoF Robot Arm	193
Akmal Khuzaifi Khairuddin, Mohd Hairi Mohd Zaman, Muhammad Ammirrul Atiqi Mohd Zainuri and Mohd Faisal Ibrahim	
Performance of Undershot Water Wheel in Low Head Water Resources for Pico Hydropower	199
Mohd Farriz Basar, Adib Zikry Abdul Kasimin, Izzatie Akmal Zulkarnain and Emy Zairah Ahmad	
Assessing GPT's Potential for Word Sense Disambiguation: A Quantitative Evaluation on Prompt Engineering Techniques	204
Deshan Sumanathilaka, Nicholas Micallef and Julian Hough	
Classification of Rice Grain Varieties Based on Morphological Features using Image Processing and Machine Learning Techniques	210
Patrick Neil M. Santiago, Rodelio P. Pascual, Marites M. Cumbe, Joel A. Macaso, Filwyn P. Villanueva and Isaac Angelo M. Dioses	
Project BlueForest: IoT Sensor Applications in Mangrove Ecosystem Management – An In-Depth Pilot Study Analysis	216
Ahgalya Subbiah, Vickneswaren Thevar Maniam and Nurul Izzatul Akma Katim	

Waste Management Scheduling Using Optimization and Decision Support Algorithms	222
Jayson A. Batoon, Sheryl May D. Lainez, Roman M. De Angel, Ace C. Lagman, Ronel F. Ramos and Victor D. Dorongon	
Non-Invasive Classification of Hypertension Using Ballistocardiograph and Photoplethysmography	227
Patricia Joyce S. Roxas, Leonard Isaac F. Chung and Jennifer C. Dela Cruz	
Automated Flood Barrier System (AFBS) with IoT Integration	233
Noor Afina Husaini, Nor Syahidatul Nadiah Ismail, Farizah Yunus, Salwana Mohamad @ Asmara and Noor Azida Sahabudin	
Cassava Disease Classification Using Squeezenet CNN Technique	239
Darios Alado	
Digital FIR Filter Design using the Adaptive Window Function for Avian Acoustic Spotlighting	244
Nemilyn A. Fadchar and Jennifer C. dela Cruz	
Comprehensive Evaluation of Generator Insulation Health: Electrical Testing Techniques	250
Mohd Helmy Halim Abdul Majid, Normiza Masturina Samsuddin, Ahmad Syukri Abd Rahman, N. H. Nik Ali and Mohd Hezri Fazalul Rahiman	
Detection of Philippine Rice Plant Diseases: A ResNet50 CNN Approach	256
Isaac Angelo M. Dioses, Patrick Neil Santiago, Rodelio P. Pascual, Rhowel Delloso, Jesusimo L. Dioses Jr. and James Bryan A. Tababa	
Graduate Tracer Monitoring Platform with Decision Support Feature and Mapping Recommendations Analysis Using Rule-Based Algorithm	261
Joseph G. Gonzales, Ace C. Lagman, Roman M. De Angel, Ma. Corazon F. Raguro, Raquel C. Adriano Bulacan and Joel D. Canlas	
Comparison of Run Length, SFTA, and Zernike Descriptors in Textured Contact Lens IRIS Detection	267
Roqia Sailh Mahmood and Ismail Taha Ahmed	
A Concise Review of Artificial Intelligence Methods for Forest-Fire Monitoring Systems	273
Faiqah Nur Adlina Mohd Radzi, Mohd Asyraf Zulkifley and Zulaikha Kadim	
Comparative Review on Sea Ice Mapping Methods using Deep Learning Approach	278
Mohamad Aizuddin Ismail, Mohd Asyraf Zulkifley and Marzuraikah Mohd Stofa	
Design LCL Filter for Active Rectifier: Modeling and Control	284
Navid Hadifar, Ali Haji Ali Biglo, Majid Majidi, Amir Hadifar and Touhid Poursheykh Aliasghari	
Pik! Pak! Boom!: A Hybrid 2D and 3D Educational Animated Series and Website on the Deprivation of Basic Needs of Street Children	290
Ortega John Heland Jasper C., Camacho Michael P., Alix Abigail L., Mangalindan Cydric T., Cabral Kimberly Kate C., Altejos Philip Ryan Rye T. and Dionisio Sharmaine Cloie C.	
Design and Development of Unmanned Aerial Vehicle for Multi-purposes Delivery in Smart Cities	296
Mohamad Amirul Aznil Mohd Taib, Safaa Najah Saud Al-Humairi, Muhammad Hariz Mohd Hanafiah and Adam Amril Jaharadak	
Addressing Imbalanced Data Challenges in Blood Vessel Image Segmentation: A Comprehensive Review	302
Shadi Mahmoodi Khaniabadi, Farzad Mahmoodi Khaniabadi, Ilyas Ahmad Huqqani, Sami Abdulla Mohsen Saleh, Soo Siang Teoh and Haidi Ibrahim	

A Novel 64/128-Channel Amplification System with Four Independent Bias Voltages for Recordings with Graphene Transistor Arrays	308
Stratis Matsoukis, Guenter Edlinger, Franz Laundl, Thomas Kober, Josef Scharinger, Nathalia Cancino-Fuentes, Joana Covelo, Maria V. Sanchez-Vives, Anton Guimerà-Brunet, Xavi Illa and Christoph Guger	
The Effects of Number of Output Voltage Levels on the Multilevel Inverter Output THD	314
A. Syukri Mohamad	
A 1000kW, 41-level Matrix Inverter as the Main Part of an Uninterruptible Power Supply for a Satellite Ground Station	320
A. Syukri Mohamad	
Wiener Model Structure Estimation of DC Motor Through Online Neural Network System Identification	325
Mohamed Najib Ribuan, Dirman Hanafi, Ayad M. Kwad, Hisyam Abdurman, Sepannur Bandri and Sabir Meftah	
Effective Lesson Planning and Assessment design using Leveraging Microsoft Copilot Implementation	331
Ronel F. Ramos, Roman M. De Angel, Aira P. Ruetas, Ace C. Lagman, Jonathan Morano, Reina T. Payongayong and Jocelyn C. Enrile	
Animo – Animal Monitoring System Based on Internet of Things	337
Kasthoori Mohan, Mavinesh Nambiar Kannan, Mohnish Mohan and Shelena Soosay Nathan	
Author's Index	342