

2024 IEEE 14th Symposium on Computer Applications & Industrial Electronics (ISCAIE 2024)

**Penang, Malaysia
24-25 May 2024**



**IEEE Catalog Number: CFP2489L-POD
ISBN: 979-8-3503-4880-4**

**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:	CFP2489L-POD
ISBN (Print-On-Demand):	979-8-3503-4880-4
ISBN (Online):	979-8-3503-4879-8
ISSN:	2836-4864

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

Cyber Risks and Blockchain Security for Digital Forensics	1
<i>Venkata Venugopal Rao Gudlur, Murugan Thangiah</i>	
Enhanced Digital Forensic Model for Securing the Internet of Things	5
<i>Venkata Venugopal Rao Gudlur</i>	
Leveraging Artificial Intelligence and Emerging Technologies in the Next Phase of Digital Business Transformation	10
<i>Waralak V. Siricharoen</i>	
Batik Image Retrieval Using Convolutional Autoencoder	15
<i>Agus Eko Minarno, Indah Soesanti, Hanung Adi Nugroho</i>	
Human-In-the-Loop Reinforcement Learning for Emotion Recognition	21
<i>Swee Yang Tan, Kok-Lim Alvin Yau</i>	
A 66.077-MW Output-Power PZE Energy Harvesting Circuit with Boost Converter Using Impedance Matching PWM/PFM Control.....	27
<i>Tzung-Je Lee, Ju-Heng Chen</i>	
A Convolutional Neural Network Model for Batik Image Retrieval.....	31
<i>Agus Eko Minarno, Indah Soesanti, Hanung Adi Nugroho</i>	
The Implementation an Electronic Land Administration System Towards Sustainable Land Administration: Systematic Literature Review.....	37
<i>Kamarul Akhtar Idris</i>	
The Potential of Embodied Social Presence in VR News for Reducing Cyber Violence.....	47
<i>Wu Qiong</i>	
Performance Enhancement of 5G Cellular-Connected UAV in Palm Oil Plantation Using Antenna Beamforming.....	52
<i>A. A. Nur Muhammad Insan, N. L. Mohd Kamal, N. Norhashim, Z. Sahwee, S. Ahmad Shah</i>	
DA Strategy Implementation Toward Optimization Problems: A Systematic Literature Review	57
<i>M. G. M. Hamami, Z. H. Ismail</i>	
Assessing Environmental Pollution and Noise Levels at End-Of-Life Vehicle Recycling Centers: A Comparative Study	62
<i>Zambri Harun, Nevzat Akkurt, Hashimah Hashim, Altaf Hossain Molla, Mokhamad Nur Cahyadi, Lavi R. Zuhail</i>	
A Capacitor-Less Low-Dropout Regulator with PVT Compensated Adaptive Biasing	68
<i>Tzung-Je Lee, Jin-Yi Chen</i>	
An Optimized Kernel Grey Model for Carbon Dioxide Emissions Forecasting	72
<i>Ani Shabri</i>	
5G-Connected UAV Handovers in Agricultural Environments: Palm Oil Plantations Insights	77
<i>F. H. Ismail, N. L. Mohd Kamal, N. Norhashim, S. Ahmad Shah, Z. Sahwee</i>	

X9: Tool for Tracking Mobile Devices Among Teams.....	83
<i>Wellington Correa, Carol Fernandes, Victor Medeiros, Marcelo Diez, Paulo Lopes, Bárbara Santos, Paulo Andrade</i>	
Unveiling the Conceptual Analysis in the Direction of Developing a Fusion Virtual Reality Model for Hearing-Impaired Visual Interaction.....	89
<i>Ermiera Shafika Mokhtar, Nurulnadwan Aziz, Siti Salbiah Hamzah, Siti Zulaiha Ahmad, Ahmad Affandi Supli, Azizah Che Omar</i>	
Personalized Glove as User Interface for Disabled Person Monitoring System Using ESP32	95
<i>Lim Fang Quan, Zarina Mohd Noh, Norhidayah Mohamad Yatim</i>	
CloudCraft: Transforming Resume Management System with Dynamic Cloud Deployment	99
<i>Mandar More, Raj Waghlikar, Swati Chopade</i>	
Efficient Rebroadcast Location-Unaware Protocol for LoRaWAN Mesh Networks in the IoT Domain	104
<i>Sheikh Tareq Ahmed, Ahmed Abdelmoamen Ahmed, Annamalai Annamalai, Mohamed Chouikha</i>	
An In-Depth Review of Revolutionizing Traffic Control Systems Leveraging Software-Defined Networking (SDN)	111
<i>Juniardi Nur Fadila, Nur Haliza Binti Abdul Wahab, Nora Ithnin, Siti Zaleha Harun, Brandon Liew Yi Quan</i>	
The Frontier of Blockchain Privacy: Development of a Private Ethereum Network	117
<i>Brandon Liew Yi Quan, Nur Haliza Abdul Wahab, Juniardi Nur Fadila, Yichiet Aun, S. K. L. Luk, Keng Yinn Wong</i>	
Blockchain in Malaysia: A Comprehensive Review of Decentralized Applications and Trends from Last 1 Decade (2013-2023)	123
<i>Nur Haliza Abdul Wahab, Brandon Liew Yi Quan, Sharifah Hafizah S. Ariffin</i>	
Hyperspectral Imaging for Remote Sensing and Agriculture: A Comparative Study of Transformer-Based Models	129
<i>Ali Alanazi, Nur Haliza Abdul Wahab, Bander Ali Saleh Al-Rimy</i>	
Wearable Detection System for Early Symptoms of Tantrums in Children Based on IoT	137
<i>Rizka Miftahujannah, Melinda Melinda, Syahrial Syahrial, Yunidar Yunidar, Vania Pratama Hasan, Zulfikar Taquiuddin</i>	
A Highly Reliable XNOR-XOR-RO PUF Design for IoT Security Applications	143
<i>Jian-Jie Chen, Ralph Gerard B. Sangalang, Hsin-Che Wu, Chua-Chin Wang</i>	
Hybrid Neuro Genetic Causal Convolution Based Autoencoders, for Traffic Prediction in Smart Cities.....	148
<i>Gunasekar Thangarasu, Rao Alla Kesava, K Nattar Kannan</i>	
Inductive Logic Programming Based Bottleneck Delphin Optimization to Fake News Detection.....	153
<i>Gunasekar Thangarasu, Rao Alla Kesava, K Nattar Kannan</i>	
Collective Intelligence Using MFC-GAN with Independent Component Analysis Data Dimensionality Reduction for HIS Remote Sensing.....	159
<i>Kesava Rao Alla, Gunasekar Thangarasu, K Nattar Kannan</i>	
Revolutionizing Lung Disease Prediction Using Artificial Intelligence	165
<i>Rao Alla Kesava, Gunasekar Thangarasu, K Nattar Kannan</i>	

Ocular Disease Recognition System Using Convolutional Neural Network.....	170
<i>Nurul Izzah Fauzi, Habibah Ismail, Ismail Ahmedy</i>	
An Image-Based Virtual Reality Tool for Self-Therapy	176
<i>Mohd Fairuz Zaiyadi, Nadia Diyana Mohd Muhaiyuddin, Ariffin Abdul Mutalib, Dayang Rohava Awang Rambli, Mohammad Hafis Shafia</i>	
Converging for Security: Blockchain, Internet of Things, Artificial Intelligence - Why Not Together?	181
<i>Ahmad Anwar Zainuddin, Dini Handayani, Isyraq Haziq Mohd Ridza, Siti Husna Abdul Rahman, Saidatul Izyanie Kamarudin, Khairul Zakwan Ahmad, Mirza Darwisy Mahazir, Muazzam Hazmi Sukhaimi, Krishnan Subramaniam, Mohamad Irfan Firdaus Basri, Nurul Hanis Mohd Dhuzuki</i>	
Hybrid Bootstrapping BPNN-ARIMAX Model for Automobile Petrol Demand Forecasting	187
<i>Kavalvizhi Subrmanian, Ibrahima Faye, Gunasekar Thangarasu, K Nattar Kannan</i>	
Virtual Reality Based Vestibule Training and Teaching Aid for Safety and Health Education in Pakistani Oil and Gas Industries: A Systematic Literature Review	192
<i>Muhammad Mujtaba Asad, Fahad Sherwani, Amjad Ali Rind, Ali Nawab, Alkarim Dattoo, Muntazir Mahdi</i>	
A Comparative Analysis of 5G Performance in Indoor and Outdoor Environments Across Key Urban Areas in Bangkok	198
<i>Jakkapong Polpong, Vilavan Sukchana, Phisit Pornpongtechavanich</i>	
An Empirical Study of User Adoption of Hospital's WeChat Official Account	203
<i>Ou Ketong, Nurul Hija Mazlan</i>	
CEEMD-Based Multivariate Financial Time Series Forecasting Using a Temporal Fusion Transformer	209
<i>Raymond Ho, Kevin Hung</i>	
Random Forest Regression Analysis for the Failure Prediction of Corrosion in Pipeline Infrastructure	216
<i>Yusuf Olusegun Yusuf-Awari, Zazilah May</i>	
Predictive Modelling Insights with Interpretable NARX - LIME for Geomagnetic Disturbance-Storm-Time Index.....	221
<i>Ain Dzarah Nafisah Mazlan, Muhammad Asraf Hairuddin, Nur Dalila K. A., Nooritawati Md Tahir, Mohamad Huzaimy Jusoh</i>	
Real-Time Pipeline Tracking System on a RISC-V Embedded System Platform	227
<i>Eric Sia Siew Wei, Ibrahim Akinjobi Aromoye, Lo Hai Hiung</i>	
Optimizing Predictive Models and Streamlining Feature Selection Process in Oncology	233
<i>Kavalvizhi Subrmanian, Ibrahima Faye, Gunasekar Thangarasu, K Nattar Kannan</i>	
Standalone Smart Glass System for the Blind and Visually Impaired.....	239
<i>Yi-Ler Poy, Shalini Darmaraju, Choon-Hian Goh, Ban-Hoe Kwan</i>	
Handover Performance of Mobility Robustness Optimization for Beyond 5G Networks.....	245
<i>Ukasyah Mahamod, Hafizal Mohamad, Ibraheem Shayea, Abdulraqeb Alhammadi, Fauzun Abdullah Asuhaimi, Marinah Othman</i>	

Effect of Social Media Influencer, Brand Awareness and Perceived Quality Towards Brand Image of Shopping Platforms in China	250
<i>Wong Chee Hoo, Aw Yoke Cheng, Xu Qian, Abdul Rahman Mubaarique, Yuhanim Hani Yahaya</i>	
Comparison of Impacts from Color-Based and Geometric Augmentations for Deep Learning: A Case of Thai Food Images	255
<i>Therdpong Daengsi, Paradorn Boonpoor, Korn Puangnak, Prateep Pholchanngam, Pongpisit Wuttidittachotti, Pramuk Unahalekhaka</i>	
Real-Time FPGA-Based Sound Source Localization	260
<i>Norish Camelia Jamaludin, Ili Shairah Abdul Halim, Siti Lailatul Mohd Hassan, Wan Fazlida Hanim Abdullah</i>	
Effectiveness of Inception V3 and MobileNet V2 Models in Classifying Bird Species Based on Physical Characteristics	265
<i>Slamet Riyadi, Azhar Salwa Salsabila, Auliana Rizky Puspita Dewi</i>	
The Heterogenous Impact of R&D and Green Innovation on Carbon Emissions in Europe.....	270
<i>Hui Shan Lee, Kee Seng Kuang, Bee Chen Ooi, Wai Mun Har</i>	
Genius City Mechanism to Improve Sustainable Ecosystems, Education, Transportation, Governance, and Commerce.....	276
<i>Asmaa Mahfoud Al-Hakimi, Ahgalya Subbiah</i>	
An Integrated AR Application with Creative Dental Health Illustration Book as a Learning Media for Children	283
<i>Raihan Naradika, Mastina Binti Masood, Noor Hafizah, Nur Svafiaah Bt Mohamad Baharudin</i>	
Development of Travex: A Comprehensive Mobile Application Promoting Penang Tourism Industry.....	289
<i>Aida Binti Md Saad, Irfan Syabil Bin Mohamad Noor Azam</i>	
A Searching Methodology for a Secure Identifying Block Location in Blockchain	294
<i>Abdulrahman Alamer</i>	
VAE Application: A Mobile Application for Enriching Visual Arts Studies for the Secondary Level in Malaysia	301
<i>Wan Irfan Nurul Atiq Bin Wan Mohd Yusoff, Ainol Fauziah Binti Abdullah Thani, Noor Hafizah</i>	
Introduction of IoT Integration into Smart Indoor Farming Hydroponic Systems for Urban Communities: Plensis System	307
<i>Ainil Hazimah Abdul Halim, Muhammad Aidil Taufik, Noor Hafizah Mahamarowi, Ts Dr Ahmad Sukri Ahmad</i>	
Computational Thinking in Game-Based Learning for STEM Education.....	313
<i>Noor Affieyka Natasha Ahamad, Ismassabah Ismail, Nurul Hidayah Mat Zain, Marina Ismail</i>	
Investigation of a 130nm CMOS Low Noise Amplifier's Performance Across Corner Conditions for WLAN Applications.....	318
<i>Ahmad Hazim Nu'Man Azman, Maizan Muhamad, Nabila Husna Amin, Hanim Hussin, Anees Abdul Aziz, Norhawati Ahmad</i>	

Classification of Defect and Non-Defect Durian Using Image Processing Technique.....	324
<i>Faris Ilyasa Ahmad Khazri, Suhaili Beeran Kutty, Maizura Mohd Sani, Murizah Kassim, Shuria Saaidin</i>	
Driver Drowsiness Detection Using Vision Transformer	329
<i>Muhammad Muizuddin Bin Mohamad Azmi, Fadhlan Hafizhelmi Kamaru Zaman</i>	
HybridDNN-GA: A Genetic Algorithm to Optimize Layers of Hybrid Deep Neural Networks	337
<i>Nileymegum Sivadilingam, Oomesh Gukhool</i>	
A Real-Time Noise Detector for Patient Monitoring at Hospital Wards	343
<i>Wan Basri Wan Ismail, Rosidah Rosdi, Siti Khatijah Zulkefli</i>	
Critical Factors of Disruptive Innovation: A Review	348
<i>Yoga Prihastomo, Harjanto Prabowo, Agung Trisetyarso, Haryono Soeparno</i>	
A YOLO Benchmarking Experiment for Maritime Object Detection in Foggy Environments.....	354
<i>Defu Yang, Mahmud Iwan Solihin, Yawen Zhao, Bingyu Cai, Chaoran Chen, Slamet Riyadi</i>	
Advancing Pre-Hospital Emergency Medical Services: An AI-Powered Approach to Voice-Activated Technologies	360
<i>Nur Atiqah Azman, Samihah Abdullah, Nor Shahanim Mohamad Hadis, Zafirah Faiza, Shabinar Abdul Hamid, Azwati Azmin</i>	
Towards Efficient Solar Panel Inspection: A YOLO-Based Method for Hotspot Detection	367
<i>Muhammad Irshat Ameerudin, Muhammad Herman Jamaluddin, Ahmad Zaki Shukor, Luqman Al Hakim Kamaruzaman, Syazwani Mohamad</i>	
Design and Simulation of 1 0- Bit SAR ADC Using 18nm FinFET Technology.....	373
<i>Lee Khai Onn, Chai Yoon Yik, Su Hsiao Wei, Richard Lai Tian Fat, Cheong Choon Min, Mark Wong, Hazwan Halim</i>	
Development of Automatic Vehicle Accident Detection and Rescue System (AVADRS)	379
<i>Hasliza Binti Hassan, Muhamad Fitri Bin Salim, Tan Mun Mun</i>	
Microheater Comparative Study of S-Shape, Serpentine, and Dual C Configurations for Microfluidic Applications.....	385
<i>Wan Najmi Nuqman Wan Nasarudin, Yusnira Husaini, Tuan Norjihan Tuan Yaakub</i>	
Deposition of ZnO Nanoparticles on Cotton Textile for Wearable Electronics.....	391
<i>Shafinaz Sobihana Shariffudin, Nur Aziati Shahirah Abdul Rahim, Puteri Sarah Mohamad Saad, Hashimah Hashim, Mohamad Hafiz Mamat</i>	
Characterization of Early Termination for Stochastic Computing Image Processing Circuits	395
<i>Izam Kamisian, Muhammad Nadzir Marsono, Norlina Paraman, Afiq Hamzah, Jamaluddin Zakaria</i>	
Factors Influence the User's Intention to Use Online Travel Agents	401
<i>Harijanto Pangestu, Ra Dyah Wahyu Sukmaningsih, Willy Kristian, Katyana Aurora Quintania, Tiara Berliana Adhany, Andika Daud Despandi</i>	
A Systematic Literature Review of Gamification in Public Transportation	407
<i>Ferdinand Wijaya Chandra, Dyah Wahyu Sukmaningsih, Willy Kristian</i>	
Particle Swarm Optimization with Time-Varying Acceleration Coefficients in Multilevel Image Thresholding.....	413
<i>Emir Turajlic</i>	

Collaborative Active Learning in Conditional Trust Environment.....	418
<i>Zan-Kai Chong, Hiroyuki Ohsaki, Bryan Ng</i>	
Improved Particle Swarm Optimization Algorithm in Multilevel Image Thresholding	424
<i>Emir Turajlic</i>	
Hybrid Fixed and Floating-Point Approach for Implementing PID Controllers on Zynq-7000 FPGA.....	429
<i>Aijaz Ali, Kishore Bingi, Rosdiazli Ibrahim, P Arun Mozhi Devan, Madiyah Omar</i>	
Parametric Optimization of Microstrip Patch Antenna Design for Enhanced Performance at 3.5 GHz Wireless Applications.....	435
<i>Ida Rahayu Mohamed Noordin, Muhamad Mui'Zuddin Hasmizam, Azwati Azmin, Normasni Ad Fauzi, Azrull Amany Mohd Zamri, Muhammad Danish Nazmi Zamani</i>	
Advancing Stroke Rehabilitation: Designing an Augmented Reality System for Enhanced User Engagement and Recovery	440
<i>Brendan Sien Howe Kong, Woan Ning Lim</i>	
Bridging Gaps in High School Physics Education: Revolutionizing Through Virtual Reality Experimental Learning	446
<i>Woan Ning Lim, Naveen Al Gavara Ramarao</i>	
Fractional-Order Model Predictive Controller for Process Plant's Robust Performance.....	451
<i>Muhammad Aidi Farhan Bin Mohamed Sadik, Muhammad Aiman Haqiemi Mohd Shaipul, Kishore Bingi, P. Arun Mozhi Devan, Aijaz Ali</i>	
Systematic Literature Review on Current Application of Utilizing Augmented Reality in Heritage Tourism.....	457
<i>Siti Salbiah Hamzah, Nurulnadwan Aziz, Siti Zulaiha Ahmad, Wannisa Matcha, Sariya Binsaleh, Rosman Mahmood</i>	
Aspect-Based Subjectivity Analysis Using a BERT-based Approach	462
<i>Hu Ng, Wing Kin Chong, Yu Zhang Chia, Timothy Tzen Vun Yap, Vik Tor Goh, Lai Kuan Wong, Ian Kim Teck Tan, Dong Theng Cher</i>	
Enhancing COVID-19 Safety: Automatic Mask Detection and Temperature Monitoring System Using YOLOv5x and Mobile App Platform.....	466
<i>Hanady S. Ahmed, Aumalhuda G. Abood, Ali A. Abed, Ali A. Gallod</i>	
Resampling Methods for Imbalanced Datasets in Multi-Label Classification: A Review.....	472
<i>Mediana Aryuni, Chastine Fatichah, Anny Yuniarti</i>	
Preliminary Design of Water Intake System for In-Situ Water Quality Assessment	478
<i>Fatin Izyani Mohamad Robi, Mohamad Faizal Abd Rahman, Azka Rohaizan, Rohaiza Baharuddin, Mohd Hanapiah Abdullah</i>	
Enhancing Forest Fire Management in Malaysia with a Power BI Dashboard: Leveraging VIIRS Hotspots and Environmental Data.....	482
<i>Yee Jian Chew, Shih Yin Ooi, Ying Han Pang, Jin Kang Hoi</i>	
GreenSight: IoT-Based Greenhouse Monitoring System.....	487
<i>Charles Bryan R. Fabian, Jerson S. Sumalinog, Paul John S. Vicente, N. Romasanta Joan Katherine</i>	
Review of Polymer Additive Manufacturing at Multi-Scale 3D Modelling.....	493
<i>Mohd Azam Ariffin, Mohd Sabri Hussin</i>	

Addressing the Class Imbalance Problem in Network-Based Anomaly Detection	499
<i>Toya Acharya, Annamalai Annamalai, Mohamed F Chouikha</i>	
Ensuring Integrity of Quranic Verses Using Hyperledger Fabric Framework Under IBM Blockchain Platform.....	505
<i>Savera Hanif, Ahsan Khan, Ehaz Mustafa, Mazhar Ali, Junaid Shuja, Mohd Hilmi Hasan</i>	
Disruptive Higher Education: Will Lecturers Be Replaced by Technologies.....	511
<i>Nuril Kusumawardani Soeprapto Putri, Umi Laili Yuhana, Daniel Oranova Siahaan</i>	
Impact of Retinal Enhancement Techniques on Blood Vessel Segmentation.....	517
<i>Fasial Majed Alqahtani, Somaya Adwan, Mohd Yazed Ahmad, Salmah Binti Karman, Rasha Maged, Lamy'a A Maged</i>	
A Systematic Literature Review of Factors Influencing Augmented Reality Acceptance in Tourism.....	522
<i>Siti Salbiah Hamzah, Hasiah Mohamed, Nurulnadwan Aziz</i>	
Resource-Efficient 64-Bit Karatsuba Multiplier Using LUTs and DSP Slices.....	527
<i>Shakirah Hashim, Nur Farraliza Mansor</i>	
chick IT: A Smart Poultry Feeding System Through the Internet of Things.....	531
<i>Bernadette R. Bolaño, Lerize Doreen D. Casuco, Jane Danielle C. Fesariton, Joan Katherine N. Romasanta</i>	
Influence on Electrical Properties of Copper Doped Zinc Oxide and Polylactic Acid Composite Thin Films Using Immersion Method	536
<i>Anees Bt Abdul Aziz, Norhafizah Binti Burham, Akmal Irfan Bin Rasman, Muhamas Hadif Husaini Bin Azli, Dayana Binti Kamaruzaman, Mohamad Hafiz Bin Mamat</i>	
Exploring User Experience Evaluation in Mobile Educational Games: A Systematic Literature Review.....	540
<i>Sharifah Nurulhikmah Syed Yasin, Roslina Ibrahim</i>	
Concurrent Assessment of Image Quality Score and Distortion with Context-Fovea Integrated CNN	546
<i>Nay Chi Lynn, Tetsuya Shimamura</i>	
Customer Relationship Management System for Retail Stores Using Unsupervised Clustering Algorithms with RFM Modeling for Customer Segmentation	550
<i>Sun Shuai Ling, Chian Wen Too, Whee Yen Wong, Meei Hao Hoo</i>	
Optimization of Design Parameters Using Taguchi Method for Thermal Stress Analysis in a 3D IC.....	556
<i>Syamil Bin Sazali, Hasliza Binti Hassan, Norliana Yusof, Yusnira Husaini, Anees Binti Abdul Aziz, Tuan Norjihani Binti Tuan Yaakub</i>	
Enhancing Aviation Safety: A Deep Learning-Based Fault Detection System for Jet Engines	560
<i>Saiful Izwan Suliman, Yuslinda Wati Mohamad Yusof, Farah Yasmin Abdul Rahman, Muhamad Haziq Bin Shamsul Izran</i>	

Author Index