

2024 IEEE 7th International Symposium on Telecommunication Technologies (ISTT 2024)

**Langkawi Island, Malaysia
21-22 October 2024**



**IEEE Catalog Number: CFP24STT-POD
ISBN: 979-8-3503-9208-1**

**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:	CFP24STT-POD
ISBN (Print-On-Demand):	979-8-3503-9208-1
ISBN (Online):	979-8-3503-9207-4
ISSN:	2379-3910

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

Description	Page
Conference Background	i
Acknowledgement	ii
Organizing Committee	iii
Author Index	iv
List of Reviewers	xiv
General Chair's Message	xvi
Welcoming Remarks from Conference Chair	xvii
Keynotes	xviii
Industry Forum	xxi
Papers	
V2I-Aided Zk-SNARK for Travel Records Verification of Electric Vehicles	1
<i>Cao Ding (The Hong Kong Polytechnic University, Hong Kong), Ivan Wang-Hei Ho (The Hong Kong Polytechnic University, Hong Kong), Sid Chi-Kin Chau (Australian National University, Australia)</i>	
Performance Evaluation of Fully Generalized Spatial Modulation With Hybrid Beamforming in Vehicular Networks: mmWave vs. IEEE 802.11ad	7
<i>Sheemaa Hashim (Universiti Teknologi Malaysia, Malaysia), Rudzidatul Dziyauddin (Universiti Teknologi Malaysia, Malaysia) Mohd Azri Izhar (Universiti Teknologi Malaysia, Malaysia), Norhudah Seman (Universiti Teknologi Malaysia, Malaysia), Sharul Kamal Abd. Rahim (Universiti Teknologi Malaysia, Malaysia), Periklis Chatzimisios (International Hellenic University, Greece)</i>	
On the Robustness of ACLR and EVM Performance in Hybrid Digital/Analog Predistorters	13
<i>Majid Ahmed (American University of Sharjah, United Arab Emirates), Oualid Hammi (American University of Sharjah, United Arab Emirates)</i>	

Description	Page
Detecting Vehicle Traffic Violations Using Deep Learning Using Retina-LPD and GFP-GAN	19
<i>Hau Bui Thuc (Hanoi University of Science and Technology, Vietnam), Cuong Nguyen Van Nhu (Hanoi University of Science and Technology, Vietnam), Hung Le Quoc (Reigate Grammar School Vietnam, Vietnam), Chau Nguyen Le Bao (Hanoi-Amsterdam Highschool for the Gifted, Vietnam), Ha Vuong Le (Hanoi-Amsterdam Highschool for the Gifted, Vietnam), Minh Nguyen Anh (Hanoi-Amsterdam Highschool for the Gifted, Vietnam), Phat Huu Nguyen (Hanoi University of Science and Technology, Vietnam), Quang Tran Minh (Ho Chi Minh City University of Technology, Vietnam)</i>	
Proposing YOLOv5 Model on Jetson Nano and Evaluating Map Index	25
<i>Quang Dang Anh (Hanoi University of Science and Technology, Vietnam), Hung Le Quoc (Reigate Grammar School Vietnam, Vietnam), Chau Nguyen Le Bao (Hanoi-Amsterdam Highschool for the Gifted, Vietnam), Ha Vuong Le (Hanoi-Amsterdam Highschool for the Gifted, Vietnam), Minh Nguyen Anh (Hanoi-Amsterdam Highschool for the Gifted, Vietnam), Phat Huu Nguyen (Hanoi University of Science and Technology, Vietnam), Quang Tran Minh (Ho Chi Minh City University of Technology, Vietnam)</i>	
A High-Efficiency, Indirectly-Fed, Dual Moon-Shaped Printed Antenna for Measuring Sand Gradation	31
<i>Mohammed Khamees Abbas (University of Technology, Iraq), Raaed T. Hammed (University of Technology, Iraq), Ali J. Salim (University of Technology, Iraq), Aduwati Sali (Universiti Putra Malaysia, Malaysia)</i>	
Hybrid Reconfigurable Intelligent Surfaces and Unmanned Aerial Vehicle Assisted Communication	37
<i>Chi Yen Goh (Universiti Teknologi Malaysia, Malaysia), Chee Yen Leow (Universiti Teknologi Malaysia, Malaysia), Chuan Heng Foh (University of Surrey, United Kingdom), Igbafe Orikumhi (Hanyang University, Korea (South)), Sunwoo Kim (Hanyang University, Korea (South))</i>	
Coordinated Reconfigurable Intelligent Surface for Cellular-Connected UAV	42
<i>Wee Kiat New (University College London, United Kingdom), Chee Yen Leow (Universiti Teknologi Malaysia, Malaysia), Chuan Heng Foh (University of Surrey, United Kingdom), Kai Kit Wong (University College London, United Kingdom), Hao Xu (University College London, United Kingdom), Farshad Rostami Ghadi (University</i>	

Description	Page
<i>College London, United Kingdom & University of Granada, Spain)</i>	
Channel Estimation for 29GHz mmWave MIMO Systems in Tropical Region	48
<i>Lu Li (Universiti Putra Malaysia & Anhui University of Technology, Malaysia), Aduwati Sali (Universiti Putra Malaysia, Malaysia)</i>	
Sum-Rate Maximization for UAV Relay-Aided Fluid Antenna System With NOMA	53
<i>Salah Abdou (University of Technology Malaysia & Higher Institute of Science and Technology, Malaysia), Wee Kiat New (University College London, United Kingdom), Chee Yen Leow (Universiti Teknologi Malaysia, Malaysia), SeungHwan Won(Connected Intelligence Research Group, Malaysia), Kai Kit Wong (University College London, United Kingdom), Zhiguo Ding (Khalifa University, United Arab Emirates)</i>	
Adaptive Q-Learning and Multi-Criteria Decision-Making for Rate and Handover Optimization in Urban UAV-Assisted HetNets	59
<i>Yasir Ullah (Multimedia University, Malaysia), Mardeni Roslee (Multimedia University, Malaysia), Azlan Bin Sulaiman (Telekom Malaysia Research & Development, Malaysia), Farman Ali (Nanjing University of Aeronautics and Astronautics, China), Sufian Mousa Mitani (Telekom Malaysia Research & Development, Malaysia), Shabeer Ahmad (Beijing University of Posts and Telecommunications, China)</i>	
Evaluation of Cloud Recovery System for Financial Applications Based on Hadoop	65
<i>Lu Li (Universiti Putra Malaysia & Anhui University of Technology, Malaysia), Lu Tong (Universiti Putra Malaysia, Malaysia), Aduwati Sali (UPM, Malaysia)</i>	
Coverage Versus Capacity Conflict Mediation via Antenna Tilt in Self-Organising Networks	72
<i>Ayhan Akbas (University of Surrey, United Kingdom), Chuan Heng Foh (University of Surrey, United Kingdom), Hamed Alimohammadi (University of Surrey, United Kingdom), Seyed Ahmad Soleymani (University of Surrey, United Kingdom), Samara Mayhoub (University of Surrey, United Kingdom), Sulyman Age Abdulkareem (University of Surrey, United Kingdom), Chee Yen Leow (Universiti Teknologi Malaysia, Malaysia), Mohammad Shojafar (University of Surrey, United Kingdom)</i>	

Description	Page
Wavelength Assignment Algorithm for Energy Consumption Reduction in TWDM-PON Based 5G Fronthaul	78
<i>Arnidza Ramli (Universiti Teknologi Malaysia, Malaysia), Nur Afiqah Mohaini (Universiti Teknologi Malaysia, Malaysia), Nadiatulhuda Zulkifli (Universiti Teknologi Malaysia, Malaysia), Nik Noordini Nik Abd Malik (Universiti Teknologi Malaysia, Malaysia), Farabi Iqbal (Universiti Teknologi Malaysia, Malaysia)</i>	
Comprehensive Analysis of Beampattern and Energy Consumption of Collaborative Beamforming Scheme in WSN	84
<i>Najla Ilyana Ab Majid (Universiti Teknologi Malaysia, Malaysia), Nik Noordini Nik Abd Malik (Universiti Teknologi Malaysia, Malaysia), Noraini Zakaria (Universiti Teknologi Malaysia, Malaysia), Arnidza Ramli (Universiti Teknologi Malaysia, Malaysia)</i>	
Optimizing Energy Efficiency in Ultra-Dense Networks Through Enhanced Device-To-Device Communication and Small Base Station Management	90
<i>Muhammad Firdaus Hashim (Universiti Teknologi MARA, Malaysia), Nur Idora Abdul Razak (Universiti Teknologi MARA, Malaysia), Azlina Idris (Universiti Teknologi MARA, Malaysia)</i>	
Enhancing 5G UDN Performance With Adaptive Successive Interference Cancellation Technique for Optimizing Success Probability and Ergodic Capacity	96
<i>Faizan Qamar (Universiti Kebangsaan Malaysia (UKM), Malaysia), Syed Hussain Ali Kazmi (Universiti Kebangsaan Malaysia, Malaysia), MHD Nour Hindia (University of Malaya, Malaysia), Rosilah Hassan (Universiti Kebangsaan Malaysia & UKM, Malaysia), Dahlila Putri Dahnil (UKM, Malaysia)</i>	
Investigation of Feedback Level Limiter Algorithm to Anticipate the Deep Fade Conditions on Closed Loop Rotate Modulations for Multicarrier Systems	102
<i>Budi Prasetya (Telkom University, Indonesia), Yuyun Siti Rohmah (Telkom University & Institut Teknologi Bandung, Indonesia), Rudzidatul Dziyauddin (Universiti Teknologi Malaysia, Malaysia)</i>	
Investigating Fast Learning Network for Voice Pathology Detection	108
<i>Fahad Taha AL-Dhief (Universiti Teknologi Malaysia, Malaysia), Nurul Mu'azzah Abdul Latiff (Universiti Teknologi Malaysia, Malaysia), Nik Noordini Nik Abd Malik (Universiti Teknologi Malaysia, Malaysia), Marina Mat Baki (Universiti Kebangsaan Malaysia, Malaysia), Nor Aishah Muhammad (Universiti Teknologi Malaysia,</i>	

Description	Page
<i>Malaysia), Musatafa Abbas Abbood Albadr (Basrah University for Oil and Gas, Iraq)</i>	
Classification of Freshwater Broodstock Using Image-Based Machine Learning	114
<i>Syara Hadira Mohd Helmen (Universiti Teknologi Malaysia, Malaysia), Nor Aishah Muhammad (Universiti Teknologi Malaysia, Malaysia), Nur Najahatul Huda Saris (Universiti Teknologi Malaysia, Malaysia), Norhashimah Mohd Norsuddin (Universiti Kebangsaan Malaysia, Malaysia), Nurul Ashikin Daud (UTM, Malaysia), Mohd Adib Sarijari (Universiti of Teknologi Malaysia, Malaysia)</i>	
Threat Intelligence in IoMTs With Federated Learning Using Non-IID Data: An Experimental Analysis	120
<i>Syed Hussain Ali Kazmi (Universiti Kebangsaan Malaysia, Malaysia), Rosilah Hassan (Universiti Kebangsaan Malaysia & UKM, Malaysia), Faizan Qamar (Universiti Kebangsaan Malaysia, Malaysia), Kashif Nisar (Swinburne University of Technology, Sydney, New South Wales, Australia), Dahlila Putri Dahnii (UKM, Malaysia)</i>	
Implementation of Low-Cost Connectivity for Manhole Cover Sensor	126
<i>Muhammad Afwan Bin Mohd Ariffin (Multimedia University, Malaysia), Mohamad Yusoff Alias (Multimedia University, Malaysia)</i>	
Real-Time Oversight of Parking Space Management in IoT Edge Computing for Industry 4.0: A Case Study	132
<i>Mohammed Alaa Ala'anzy (SDU University, Kazakhstan), Alaa Fadhil Ala'anzy (Al-Hikma University College, Iraq), Umar Ali Bukar (Multimedia University, Malaysia), Tamara Zhukabayeva (L.N. Gumilyov Eurasian National University, Kazakhstan), Dilaram Baumuratova (L.N. Gumilyov Eurasian National University, Kazakhstan), Nurdaulet Karabayev (L.N. Gumilyov Eurasian National University, Kazakhstan)</i>	
On the Passive Fingerprinting Attack for IoT Device Classification	138
<i>Tabina Kamal (Universiti Putra Malaysia, Malaysia), Fazirulhisyam Hashim (Universiti Putra Malaysia, Malaysia), Mohd. Fadlee A. Rasid (Universiti Putra Malaysia, Malaysia), Faisul Arif Ahmad (Universiti Putra Malaysia & Faculty of Engineering, Malaysia)</i>	
Enhancing Cybersecurity in Healthcare Using Blockchain and IoMT-Integrated Framework for Mitigating Emerging Risks	144
<i>Uzma Jafar (Multimedia University, Malaysia), Hafiz Adnan Hussain (Universiti Kebangsaan Malaysia, Malaysia)</i>	

Description	Page
Green Dual Connectivity Selection Algorithm in 5G-NR/4G-LTE NSA HetNet	150
<i>Nur Anisya Anis Syukri (Multimedia University, Malaysia), Siva Priya Thiagarajah (Multimedia University, Malaysia), Made Harta Dwijaksana (University of Indonesia & Pusat Ilmu Komputer UI, Indonesia), Mohamad Yusoff Alias (Multimedia University, Malaysia), It Ee Lee (Multimedia University & Northumbria University, Malaysia)</i>	
Millimeter-Wave Propagation Characteristics Analysis for Vehicle to Infrastructure Communication	156
<i>Yaser Awadh Bakhuraisha, Jr (Multimedia University & BBU, Jalan Ayer Keroh Lama, Malaysia), Azlan Abdul Aziz (Multimedia University, Melaka, Malaysia), Kim Geok Tan (Multimedia University Malaysia, Malaysia), Saifulnizan Jamian (Universiti Tun Hussein Onn Malaysia, Malaysia), Mohamad Yusoff Alias (Multimedia University, Malaysia), Mohd Khanapiah Bin Nor (Universiti Teknikal Malaysia Melaka, Malaysia)</i>	
Development of GPS Receive Antenna With Anti-Jamming Capabilities	162
<i>Mohd Fais Mansor (Universiti Kebangsaan Malaysia, Malaysia), Mohamad Farhan Suratman (Universiti Kebangsaan Malaysia, Malaysia)</i>	
X-Band and Ku-Band Frequency Switching Planar Reflecting Surface Unit Cells	166
<i>Muhammad Inam Abbasi (Universiti Teknikal Malaysia Melaka, Malaysia), Sher Dali Khan (Universiti Teknikal Malaysia Melaka, Malaysia), Imran Mohd Ibrahim (Universiti Teknikal Malaysia Melaka, Malaysia), Noor Hafizah Sulaiman (School of Electric and Electronic Engineering, Xiamen University Malaysia, Selangor, Malaysia, Malaysia), Altaf Ahmed (Universiti Teknikal Malaysia Melaka , Malaysia)</i>	