

2021 IEEE International Conference on Communication, Networks and Satellite (COMNETSAT 2021)

**Online Conference
17 – 18 July 2021**



**IEEE Catalog Number: CFP2131S-POD
ISBN: 978-1-6654-3435-5**

**Copyright © 2021 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:	CFP2131S-POD
ISBN (Print-On-Demand):	978-1-6654-3435-5
ISBN (Online):	978-1-6654-3434-8

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

Title Page

Welcome Message from General Chair

Committee

Program Schedule

Keynote Speech

Keynote 1

End-to-End Learning Framework for Future Wireless and Satellite Networks using AutoEncoder

Prof. Mathini Sellathurai

Keynote 2

D2D-MEC Systems for Video Streaming

Prof. Ridha Hamila

Keynote 3

Enabling Future Superconnectivity: Internet of Things as a Melting Pot of Communication and Intelligence

Assoc. Prof. Dr. Agustian Taufiq Asyhari

Keynote 4

Microwave Remote Sensing and the Applications for Environmental Monitoring

Prof. Josaphat Tetuko Sri Sumantyo

- | | | |
|-------------------|---|-----------|
| 1570718105 | Traffic-aware Link Assignment in GEO Satellite Communication Networks | 1 |
| | Letian Li (No. 38 Research Institute, China Electronics Technology Group Corporation, China); Wenlong Wei (Shanghai Institute of Satellite Engineering, China); Kaiwei Wang (No 38 Research Institute, China Electronics Technology Group Corporation, China); Weilong Ren (No. 38 Research Institute China Electronics Technology Group Corporation, China); Shuo Wang (No. 38 Research Institute China Electronics Technology Group Corporation, China) | |
| 1570721008 | Orbit Shifting Analysis Satellite Telkom 4 with Cowell and Encke Method Caused by Perturbation | 6 |
| | Ahmad Fahrizal Ramadhan, Solichah Larasati and Imam Muhammadi PB (Institut Teknologi Telkom Purwokerto, Indonesia) | |
| 1570723450 | A Novel Elman Network based INS/GPS Fusion Filter to Enhance Tracking Accuracy in UAVs | 16 |
| | Arya Viswanath, and Sameer Saheerudeen Mohammed (National Institute of Technology Calicut, India) | |

1570723971	Techno-Economic of the Ka-Band HTS to Minimize Broadband Services Gap for Indonesian Government Ignatius Daru Kristiadi, Muhammad Imam Nashiruddin ,and Miftadi Sudjai (Telkom University, Indonesia)	21
1570725914	Implementation of Layer 2 MPLS VPN on the SDN Hybrid Network using Ansible and ONOS Controllers Kukuh Nugroho (Institut Teknologi Telkom Purwokerto, Indonesia)	27
1570718886	Mapping of Business Intelligence Research Themes: Four Decade Review Agung Purnomo (Bina Nusantara University, Indonesia); Mega Firdaus (Universitas Nahdlatul Ulama Sidoarjo, Indonesia); Dian Sutiksno (Politeknik Negeri Ambon, Indonesia); Riyan Putra (Nahdlatul Ulama University of Surabaya, Indonesia); Uswatun Hasanah (Universitas Trunojoyo Madura, Indonesia)	32
1570720122	Expert System of Land Suitability for Fruit Cultivation Using Case-Based Reasoning Method Bayu Anggoro Krisnamurti, Yogo Dwi Prasetyo, Condro Kartiko (Institut Teknologi Telkom Purwokerto, Indonesia)	38
1570722407	Performance Comparison of Swarm Intelligence Algorithms for Web Caching Strategy Mulki Indana Zulfa (Universitas Gadjah Mada & Universitas Jenderal Soedirman, Indonesia); Rudy Hartanto, and Adhistya Permanasari (Universitas Gadjah Mada, Indonesia)	45
1570722560	Implementation of Constant-Q Transform (CQT) and Mel Spectrogram to converting Bird's Sound Silvester Dian Handy Permana (Universitas Trilogi, Indonesia); Ketut Bayu Yogha (Universitas Trilogi, Indonesia)	52
1570723265	Fuzzy Logic Implementation on Motion of Tennis Ball Picker Robot Faizah, Aris Triwiyatno, and R. Isnanto (Diponegoro University, Indonesia)	57
1570723704	Personality Detection on Social Media Twitter Using Long Short-Term Memory with Word2Vec Rachma Indira and Warih Maharani (Telkom University, Indonesia)	64
1570722145	5G D2D Transmission Mode Selection Performance & Cluster Limits Evaluation of DAI and ML Techniques Iacovos Ioannou (University of Cyprus, Cyprus & CYENS Center of Excellence, Cyprus); Christophoros Christophorou (CYENS Centre of Excellence & CITARD Services LTD, Cyprus); Vasos Vassiliou (University of Cyprus & CYENS Center of Excellence, Cyprus); Andreas Pitsillides (University of Cyprus, Cyprus)	70
1570723135	Collaborative Traffic Measurement Using Sketches for Software Defined Networks	81

	Cheng-Chieh Peng, Pi-Chung Wang and Kuo-Shiang Hsu (National Chung Hsing University, Taiwan)	
1570723159	Adaptive Replication for Real-Time Applications based on Mobile Edge Computing Kuo-Shiang Hsu, Wan-Chi Chang, Wei-Hsun Huang and Pi-Chung Wang (National Chung Hsing University, Taiwan)	88
1570723965	Utilizing 2100 MHz for 4G LTE-A Network Deployment to Addressing Spectrum Scarcity in Urban Area Pinasthika Aulia Fadhila, Muhammad Imam Nashiruddin, and Muhammad Adam Nugraha (Telkom University, Indonesia)	95
1570724372	Intelligent Augmented Video Streaming Services Using Lightweight QR Code Scanner Xuan-Vinh Nguyen, Gia-Huy Lam, Quang-Nhat Le, Quoc-Loc Duong, The-Manh Nguyen and Bao-Long Le (University of Information Technology, and Vietnam National University, Ho Chi Minh City, Vietnam); Quang Dieu Tran (Ho Chi Minh National Academy of Politics Hanoi, Vietnam); Trong-Hop Do (University of Information Technology, and Vietnam National University, Ho Chi Minh City, Vietnam); Nhu-Ngoc Dao (Sejong University, South Korea)	103
1570726122	Multi-Device Task Offloading with Scheduling in an Edge Cloud Platform Moch Yasin, Tohari Ahmad, and Royyana Mulisn Ijtihadie (Institut Teknologi Sepuluh Nopember, Indonesia)	108
1570718706	Design of LoRaWAN for Smart Factories in Industrial Estates Hanin Nafi'ah and Puspa Rahmawati (Institut Teknologi Telkom Purwokerto, Indonesia); Alfin Hikmaturokhman (Institut Teknologi Telkom Purwokerto & Universitas Indonesia, Indonesia); Solichah Larasati (Institut Teknologi Telkom Purwokerto, Indonesia)	116
1570722106	Concatenated Coset Coding in a Multi-tone DHA FH OFDMA System with Order Statistics-based Reception Dmitry Osipov (Kharkevich Institute for Information Transmission Problems of the RAS Moscow, Russia & National Research University Higher School of Economics Moscow, Russia)	123
1570726191	Evaluation of Low-density parity-check code with 16-QAM OFDM in a time-varying channel Ali Y. Kuti and A. E. Abdelkareem (College of Information Engineering (COIE) Al-Nahrain University, Iraq)	128
1570726611	Analysis of GFDM-OQAM Performance Using Zero Forcing Equalization Elsa Nur Oktaviar, Anggun Fitriani Isnawati, and Khoirun Ni'amah (Institut Teknologi Telkom Purwokerto, Indonesia)	135

1570726618	Performance Analysis GFDM Using MMSE Equalization in Audio Transmission	141
	Wiwit Indah Sari and Anggun Fitriani Isnawati (Institut Teknologi Telkom Purwokerto, Indonesia); Khoirun Ni'amah (Institut Teknologi Telkom Purwokerto & Telkom University, Indonesia)	
1570731252	Minimizing the additional costs due to Router Outage in IP-over-EON using Adaptive Routing	146
	Ridwansyah (Universitas Negeri Makassar & Universitas Hasanuddin, Indonesia); Syafruddin Syarif, Dewiani, and Wardi (Universitas Hasanuddin, Indonesia)	
1570723827	Sorting Algorithm for Medium and Large Data Sets Based on Multi-Level Independent Subarrays	152
	Kiaksar Shirvani Moghaddam (Iran University of Science and Technology, Iran); Shahriar Shirvani Moghaddam (Shahid Rajaee Teacher Training University, Iran)	
1570723829	Classification Hoax News of Covid-19 on Instagram Using K-Nearest Neighbor	157
	Indra Malik Akbar F, Yaddarabullah, and Silvester Dian Handy Permana (Universitas Trilogi, Indonesia)	
1570723909	Steganalysis of Adaptive Image Steganography using Convolution Neural Network and Blocks Selection	162
	Saeed Mohammed Hashim (College of IT University of Babylon, Iraq); Dhia Abdullahusseini Zubaydi (College of Science University of Almustansiriyah, Iraq)	
1570723979	Classification Auction Motorcycle and Car In South Jakarta District Attorney Using Naïve Bayes	168
	Fransisca Kristina Mega, Yaddarabullah, and Silvester Dian Handy Permana (Universitas Trilogi, Indonesia)	
1570724464	A Network of Object-Oriented Software Metrics' Parameters	172
	Marwah M. A. Dabdawb, and Basim Mahmood (University of Mosul, Iraq)	
1570724891	Indicators on the Feasibility of Curfew on Pandemics Outbreaks in Metropolitan/Micropolitan Cities	179
	Basim Mahmood (University of Mosul, Iraq)	
1570725374	Artificial Potential Field Algorithm for Obstacle Avoidance in UAV Quadrotor for Dynamic Environment	184
	Alfian Ma'arif (Universitas Ahmad Dahlan, Indonesia); Wahyu Rahmaniari (National Central University, Taiwan); Marco Antonio Márquez Vera (Universidad Politécnica de Pachuca, Carr. Pachuca-Sahagún Km. 20, México, Mexico); Rania Majdoubi (Mohammed V University in Rabat & LCS Laboratory, Faculty of Sciences, Mohammed V University in Rabat, Morocco); Abdullah Çakan (Konya Technical University, Turkey)	

1570726675	Prediction of the Unemployment and Bank Interest Rates on Changes in the Stock Price Index with Efficient Regression Berlian Al Kindhi, Rista Anisa Dewi, Noviyanti Santoso, Akhmad Yuzfa Salvian Idris, Afrizandy Bayu Yudhistira, Felya Mayora Putri (Institut Teknologi Sepuluh Nopember, Indonesia)	190
1570725848	Data Efficient Video Transformer for Violence Detection Almaamoon Abdali (Ministry of Education, Iraq)	195
1570726714	Network Science as a Forgery Detection Tool in Digital Forensics Alaa Amjed, and Basim Mahmood (University of Mosul, Iraq); Khalid A. K. AlMukhtar (Ministry of Interior, Iraq)	200
1570727040	Data Quality Management Maturity: Case Study National Narcotics Board Henny Sri Indriany, Achmad Nizar Hidayanto, Lellyana Juliet Wantania (Universitas Indoesia, Indonesia); Budy Santoso, Widha Utami Putri, and Welly Pinuri (National Narcotics Board, Indonesia)	206
1570726784	Solar Cell Based Integrated Sensor System Monitoring on Smart IoT Berlian Al Kindhi, Josaphat Pramudijanto, Ilham Surya Pratama, Lucky Putri Rahayu, Fauzi I. Adhim, and Joko Susila (Institut Teknologi Sepuluh Nopember, Indonesia)	213
1570726820	Real-Time Examination System For New Students At Pandemic Time Covid 19 Using Fuzzy Logic Lukman Medriavin Silalahi, Setiyo Budiyo, Imelda Uli Vistalina Simanjuntak, and Freddy Artadima Silaban (Universitas Mercu Buana, Indonesia); Agus Dendi Rochendi (Lembaga Ilmu Pengetahuan Indonesia, Indonesia); Wafi Akhlaqil Karimah (Universitas Mercu Buana, Indonesia)	219
1570727034	Visual Editor for Streamlining P4-based Programmable Parser Development Muhammad Fajar Sidiq, and Mega Pranata (Institut Teknologi Telkom Purwokerto, Indonesia); Akbari Indra Basuki (Indonesian Institute of Sciences, Indonesia)	225
1570727053	SimRouter: Message routing based on Similarity and Relative Probable Positions of nodes in DTNs Gaurav Kumar, and Yatindra Nath Singh (Indian Institute of Technology Kanpur, India)	231
1570728769	A Fast Sub-Optimum Access Point Selection in Ultra-Dense Networks Kiaksar Shirvani Moghaddam (Iran University of Science and Technology, Iran); Shahriar Shirvani Moghaddam (Shahid Rajaee Teacher Training University (SRTTU), Iran)	239
1570731555	Integrated Strategy Framework To Improve Quality Of Network on The BMKG Communication Network System Budi Dwinanto, and Ajib Setyo Arifin (Universitas Indonesia, Indonesia)	244

1570727672	The Analysis of High Power Amplifier Distortion on the MIMO-GFDM Systems Ari Endang Jayati, and Budiani Destyningtias (Universitas Semarang, Indonesia)	252
1570728090	Experimental Characterization of Miniaturized Meander Line-Based 4×4 Butler Matrix Zulfi (Institut Teknologi Bandung and Telkom University, Indonesia); Achmad Munir (Institut Teknologi Bandung, Indonesia)	258
1570728572	Outage Probability Analysis of Full-Duplex UAV-assisted Wireless System over Rician Fading Channel Kalavagunta Dilip Kumar, and Anandpushparaj Jeganathan (National Institute of Technology, Trichy, India); Mitali Gupta (Indian Telephone Industries Limited (ITI Ltd), INDIA, India); Muthuchidambaranathan P (National Institute of Technology, Trichy, India)	263
1570728949	Design GUI Filter Infinite Impulse Response (IIR) for Noise Reduction While Real-Time using LabVIEW Rheza Andika F, Ahmad Al Afif, and Putri Wulandari (Universitas Al Azhar Jakarta, Indonesia);	269
1570731404	Spectrum Fee License Analysis on 3.5, 26, and 28 GHz Frequency For 5G Implementation in Indonesia Ade Wahyudin (Sekolah Tinggi Multimedia (MMTC) Yogyakarta, Indonesia); Alfin Hikmaturokhman, and Dinar Ahmad Harish (Institut Teknologi Telkom Purwokerto, Indonesia)	274
1570731767	Segmenting the Subscribers of An Indonesian 4G Service Operator Using RFM Method Joko Tri Wibowo, and Muhammad Suryanegara (Universitas Indonesia, Indonesia)	280
1570728738	A Comparison of Several Approaches for Image Recognition used in Food Recommendation System Quang-Linh Tran, Gia-Huy Lam, Quang-Nhat Le, Trung-Hieu Tran, and Trong-Hop Do (University of Information Technology, Ho Chi Minh City & Vietnam National University, Ho Chi Minh City, Vietnam)	284
1570730064	Interpolation Effect on FBP-Based Image Reconstruction of Measured L-Band Microwave Tomography Achmad Munir, Fauzia Sekarningrum, and Nurul Amalia Amri (Institut Teknologi Bandung, Indonesia); Bakhtiar Abubakar, and Slamet Risnanto (Universitas Sangga Buana & Indonesia, Indonesia); Mohammad Ridwan Effendi (Institut Teknologi Bandung, Indonesia)	290
1570730118	Experimental Approach of L-Band Microwave Tomography and Its Image Reconstruction Using CS Method	294

Achmad Munir, Sri Mulyani, Dian Kurnia Imanda, and Ricky Willyantho (Institut Teknologi Bandung, Indonesia); Sofia Sa'idah, and Edwar (Telkom University, Indonesia);

- | | | |
|-------------------|--|------------|
| 1570732529 | <p>Designing a tourism recommendation system using a hybrid method (Collaborative Filtering and Content-Based Filtering)</p> <p>Ni Wayan Priscila Yuni Praditya, Adhistya Erna Permanasari, and Indriana Hidayah (Universitas Gadjah Mada, Indonesia)</p> | 298 |
| 1570732934 | <p>A Study on Diacritic Restoration Problem in Vietnamese Text using Deep Learning based Models</p> <p>Quang-Linh Tran, Gia-Huy Lam, Van-Binh Duong and Trong-Hop Do (University of Information Technology, Ho Chi Minh City & Vietnam National University, Ho Chi Minh City, Vietnam)</p> | 306 |
| 1570733047 | <p>30VNFoods: A Dataset for Vietnamese Foods Recognition</p> <p>Trong-Hop Do, Duc-Duy-Anh Nguyen, Hoang-Quan Dang, Hoang-Nhan Nguyen, Phu-Phuoc Pham and Duc-Tri Nguyen (University of Information Technology, Ho Chi Minh City & Vietnam National University, Ho Chi Minh City, Vietnam)</p> | 311 |
| 1570733322 | <p>Face Recognition for Identification and Verification in Attendance System: A Systematic Review</p> <p>Ahmad Anshari, Sulistyo Aris Hirtranusi, Dana Indra Sensuse, Kautsarina Kautsarina (Universitas Indonesia, Indonesia); Ryan Randy Suryono (Universitas Teknokrat Indonesia, Indonesia)</p> | 316 |
| 1570733412 | <p>Image Classification for Egg Incubator using Transfer Learning of VGG16 and VGG19</p> <p>Apri Junaidi, Jerry Lasama, Faisal Dharma Adhinata (Institut Teknologi Telkom Purwokerto, Indonesia); Ade Rahmat Iskandar (Akademi Teknik Telekomunikasi Sandhy Putra, Indonesia)</p> | 324 |
| 1570731609 | <p>Cloud-RAN and Coverage Gap in Rural Areas</p> <p>Ida Sèmévo TOGNISSE (Institut de Mathématiques et Sciences Physiques, Benin); Ahmed Dooguy KORA (Ecole Supérieure Multinationale de Télécommunications, Senegal); Jules DEGILA (Institut de Mathématiques et Sciences Physiques, Benin)</p> | 329 |
| 1570731911 | <p>Real-time Signboards using Panels P5 RGB and NodeMCU esp8266 with Library PxMatrix</p> <p>Prasetyo Yuliantoro, Shinta Romadhona, and Alfin Hikmaturokhman (Institut Teknologi Telkom Purwokerto, Indonesia)</p> | 337 |
| 1570733136 | <p>Prototype Smart Door Lock By Using Wireless Network Based on Arduino Uno</p> <p>Kholidiyah Masykuroh, Fikra Titan Syifa, Gatot Rizky Setiyanto, Afifah Dwi Ramadhani, Danny Kurnianto, and Nanda Iryani (Institut Teknologi Telkom Purwokerto, Indonesia)</p> | 342 |

1570733366	SOLSR Protocol Performance Analysis For Voip Application In Mesh Topology	348
	Aditya Wijayanto, Rifki Adhitama, and Auliya Burhanuddin (Institut Teknologi Telkom Purwokerto, Indonesia)	
1570731816	Development and Characterization of Narrowband BPF Made of Substrate Integrated Waveguide	354
	Hardi Nusantara (Institut Teknologi Bandung, Indonesia); Arief Budi Santiko (Indonesia Institute of Science LIPI, Indonesia); Zulfi and Achmad Munir (Institut Teknologi Bandung, Indonesia); Kusmadi and Nina Lestari (Universitas Sangga Buana, Indonesia)	
1570731866	Design of a Compact Circular Patch Antenna Operating at ISM-Band for the WiMAX Communication Systems	358
	Rashedul Islam, Fardeen Mahbub, Shouherdho Banerjee Akash, Imtiaz Ahmed Prince, Farhan Tasnim, Nafisa Tabassum Navia (American International University-Bangladesh, Bangladesh)	
1570731965	Design and Characterization of ADM-based Dual-band SIW Bandpass Filter	363
	Ahmad Ikhyari, Ahmad Izzuddin and Achmad Munir (Institut Teknologi Bandung, Indonesia)	
1570733029	A Design of Extreme Learning Machine Based Receiver for 2×2 MIMO-OFDM System	367
	M. Rezwatul Mahmood and Mohammad A Matin (North South University, Bangladesh)	
1570733359	Secret and Trustable Communication Channel over Blockchain Public Ledger	371
	Muhammad Fajar Sidiq, Fahrudin Mukti Wibowo and Merlinda Wibowo (Institut Teknologi Telkom Purwokerto, Indonesia); Akbari Indra Basuki, Iwan Setiawan and Didi Rosiyadi (Indonesian Institute of Sciences, Indonesia)	