

2025 IEEE Virtual Conference on Communications (VCC 2025)

**New York, USA
4-6 November 2025**

IEEE Catalog Number: CFP25UI4-POD
ISBN: 979-8-3315-8725-3



Copyright © 2025, IEEE

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:	CFP25UI4-POD
ISBN (Print-On-Demand):	979-8-3315-8725-3
ISBN (Online):	979-8-3315-8724-6

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

TABLE OF CONTENTS

Efficient Route Selection for Airborne-based Dynamic Energy Charging of Electric Vehicles	1
<i>Sookyoung Lee, Mohamed Younis, Sadi M Jawad Ahsan, Meejeong Lee</i>	
Priority-Aware Multi-UAV Search Path Planning with Evolutionary Algorithms and MARL*	7
<i>İslam Güven, Umut İlkbahar, Buse İnç, Evşen Yanmaz</i>	
Joint Optimization of Multi-UAV Deployment and 3D Positioning in Traffic-Aware Aerial Networks	13
<i>Kamran Shafafi, Alaa Awad Abdellatif, Manuel Ricardo, Rui Campos</i>	
Edge-Enabled UAV Swarm Deployment for Rapid Post-Disaster Search and Rescue	19
<i>Alaa Awad Abdellatif, Helder Fontes, Andre Coelho, Luis M. Pessoa, Rui Campos</i>	
GNN-based Proactive Entanglement Distribution in Space-Air-Ground Quantum Networks	25
<i>Mohamed Shaban, Muhammad Ismail, Walid Saad, Don Towsley</i>	
Ergodic Capacity of IRS aided Communication system Under Nakagami Fading With Phase Errors	31
<i>Rufaidah Riyaz, G.R. Beigh, Shahid Mehraj Shah</i>	
Joint Active-Passive Beamforming and Panel Selection for Hybrid IRS Systems in Multi-User Scenario	37
<i>Mahima Chaudhary, Shravan Kumar Bandari</i>	
Modelling of RF Receiver Front-Ends for Tracking SNR Degradation, Linearity and Power Consumption	43
<i>Nick Cancrinus, Yanki Aslan, Alvaro Diaz-Bolado, Samer Medawar, Alessandro Matheoud Alexander Yarovoy</i>	
Mobility-Aware Localization in mmWave Channel: Adaptive Hybrid Filtering Approach	48
<i>Abidemi Orimogunje, Kyeong-Ju Cha, Hyunwoo Park, Abdulahi A. Badrudeen, Sunwoo Kim Dejan Vukobratovic</i>	
Mobility-Driven User Association for Energy Efficient MEC-aided CF-mMIMO Network	54
<i>Chetan Fadnis, Sonali Chouhan</i>	
Mitigating the Impact of Node Position on the Channel Contention in IEEE 802.11ax based WLANs	60
<i>Muhammad Huseen Khan, Mark Davis</i>	
Tag Response Estimation and Compensation in Half-Duplex Visible Light Backscatter Communications	66
<i>Muhammad Habib Ullah, Giacinto Gelli</i>	
Impact of 2.4 GHz Interference on Bluetooth® 6.0 Channel Sounding Ranging Measurements	72
<i>Ashish Sheikh</i>	
Precoding Strategies for Network Coexistence and Interference Mitigation on Licensed Spectrum	78
<i>Sezanildo S. Paula Filho, Juno V. Saraiva, Roberto P. Antonioli, Igor M. Guerreiro, Yuri C. B. Silva Walter C. Freitas, Behrooz Makki</i>	
Conventional Caching Versus Coded Caching for Location-based Shared Caches	84
<i>Arun K Nath, Nujoom Sageer Karat, P. P. Deepthi</i>	

QoE-Aware Quantization in Buffer-Based Adaptive Bitrate Control with PD Controller for MPEG-DASH	90
<i>Eiki Asada Ryogo Kubo</i>	
Demand Characterization and Forecasting for Cost-Effective Mobile Network Planning	96
<i>Caner Kilinc, Mahesh K. Marina, Gokhan Kalem, Fatih Cogen</i>	
A Comparative Study of Measured and Simulated DSRC Performance in Urban V2X Scenario	102
<i>Fidel Alejandro Rodriguez-Corbo, Diego Fernández García, Mikel Celaya-Echarri, Leyre Azpilicueta Imanol Picallo, Cesar Vargas-Rosales, Francisco Falcone</i>	
Trust in the Deep: a Survey on Authenticating Acoustic Underwater Communication	107
<i>Luisa Lux, Elmar Padilla, Jan Bauer</i>	
Machine Learning-Enhanced Quantum Identity Authentication over Noisy Quantum Networks	113
<i>Mohamed Shaban, Muhammad Ismail</i>	
Unified Noise Mechanism for Privacy-Preserving Learning in Federated Communication Systems	121
<i>Milon Biswas, Yifan Guo, Wei Yu</i>	
Secrecy Performance Analysis of AmBC-assisted MEC System with Backscatter Device Selection	127
<i>Ahmed N. Elbattrawy, Mohamed G. Abd El Ghafour, Ahmed H. Abd El-Malek, Sherif I. Rabia Waheed K. Zahra</i>	
Privacy-Preserving Energy Forecasting in 5G+ Smart Grids Using PSI-Constrained LSTM Networks	133
<i>Mostofa Hossain, Iqra Batool, Mostafa M. Fouda, Zubair M. Fadlullah</i>	
Deep Learning-Based Beamforming Design Using Target Beam Patterns	139
<i>Hongpu Zhang, Shu Sun, Hangsong Yan, Jianhua Mo</i>	
Automated 3D Modeling of Objects using LiDAR	145
<i>Vijay Singh Sisodiya, Sunil Kumar, Amitangshu Pal</i>	
Semantic Communication for Person Re-Identification	153
<i>Stéphane Coutant, Grégoire Lefebvre</i>	
From Entanglement to Explanation: Bridging Quantum ML and XAI for Network Traffic Classification	159
<i>Alfredo Nascita, Idio Guarino, Vincenzo Spadari, Domenico Ciuonzo, Antonio Pescapè</i>	
TwinSegNet: A Digital Twin-Enabled Federated Learning Framework for Brain Tumor Analysis	165
<i>Almustapha A. Wakili, Adamu Hussaini, Abubakar A. Musa, Woosub Jung, Wei Yu</i>	
Photonics-RAN (P-RAN) for 6G: A Transformative Architecture with Performance Evaluation	171
<i>Eman A. Anowr, Mohamed I. Ismail, Mona Nashaat Ali Elmowafy, Mohamed A. Mohamed Mostafa M. Fouda, Heba M. Abdel-Atty</i>	
MAGHE: A Predictive Mobility-Aware Framework for VNF Embedding in B5G Networks	177
<i>Lara Tarkh, Mohan Li, Iqra Batool, Mostafa M. Fouda, Mohamed I. Ibrahim, Hanan Lutfiyya Zubair Md Fadlullah</i>	
DRL-Based NFV Orchestration for Ultra-Low Latency Edge Applications	183
<i>Iqra Batool, Mostafa M. Fouda, Mohamed I. Ibrahim, Zubair Md Fadlullah</i>	
Measurement of 5G-NR Signal in V2I Environment in 5 GHz Band by Software-defined Radio System	189
<i>Hiroshi Harada, Masaki Shimomura, Shota Mori, Norichika Ohmi</i>	

Joint Beamforming and Radio Resource Scheduling in UAV-RIS Aided 5G Networks	194
<i>Palash Kundu, Manoj Kumar Rana, Bhaskar Sardar, Tommaso Pecorella, Debashis Saha</i>	
Power-Line Physical-Layer Key Generation Study Based on Low Complexity 3-Wire 4-Port Modeling	200
<i>Werner Henkel, Tai Him Yim, Aditya Ojha, Sumit Giri, Ehsan Olyaei Torshizi</i>	
Secure Virtual Networks Built with Noise Tunnels and Iroha Key Management	207
<i>Vincent Autefage, Damien Magoni</i>	
Comparative Analysis of NLP and Graph-Based Embedding Techniques for Malware Classification	213
<i>Yadhunandan Karumbayiram, Harish Loghashankar, Quang Duy Tran, Younghee Park</i>	
Efficient IoT Anomaly Detection via Graph-Based Neural Architecture Search	219
<i>Nate Balmain, Lei Jiao, Jun Li</i>	
Assessing Privacy Risks in Differential Privacy Models for Communication-Centric Learning	225
<i>Milon Biswas, Yifan Guo, Weixian Liao, Wei Yu</i>	