

2024 IEEE Virtual Conference on Communications (VCC 2024)

**New York, USA
3-5 December 2024**



**IEEE Catalog Number: CFP24UI4-POD
ISBN: 979-8-3315-3010-5**

**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:	CFP24UI4-POD
ISBN (Print-On-Demand):	979-8-3315-3010-5
ISBN (Online):	979-8-3315-3009-9

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

On the Use of Filter Shape Index Modulation for Downlink NOMA Systems Over Fading Channels.....	1
<i>Georgios Konstantopoulos, Paul Desombre, George A. Ropokis, Yves Louët</i>	
Downlink Sum-Rate Maximization for Joint Active and Passive Stacked Intelligent Metasurfaces.....	6
<i>Donatella Darsena, Francesco Verde, Ivan Iudice, Vincenzo Galdi</i>	
Impact of Residual Hardware Impairments on RIS-Aided Authentication	12
<i>Bilal Çiçek, Hakan Alakoca</i>	
Implementation of a Service Based Interface for User Plane Functions in Beyond 5G and 6G Networks	18
<i>Joel John, Marius Corici, Hauke Buhr, Thomas Magedanz</i>	
Performance of VoNR and OTT Voice in Congested and Uncongested 5G Networks.....	24
<i>Elena-Ramona Modroiu, Joyce Mwangama, Marius Corici, Bessie Malila, Thomas Magedanz</i>	
What Roles Can Spatial Modulation and Space Shift Keying Play in LEO Satellite-Assisted Communication?	30
<i>Chaorong Zhang, Qingying Wu, Yuyan Liu, Benjamin K. Ng, Chan-Tong Lam</i>	
K-Means Pilot Assignment for Scalable Cell-Free Massive MIMO	36
<i>Suheel Rehman, G. R. Begh, Omkar Singh</i>	
FEM Solution Database for Liquid Crystal GHz and THz Coaxial Phase Shifters in Digital Twinning.....	42
<i>Jinfeng Li, Haorong Li</i>	
Peak Age of Information in Pilot-Assisted Coded Communication Over Markov Channels.....	47
<i>Amany Ragab, Radwa Sultan, Karim Banawan, Ahmed Eltrass, Hesham Tolba</i>	
Radio Frequency Fingerprinting: A Conceptual Study for Addressing Real-World Challenges	55
<i>Stefan Kunze, Wolfgang Dörner</i>	
A Multi-Tenant SDN Architecture for Network Deployment Using a Wi-Fi HaLow-Based IEEE 802.11s Mesh.....	62
<i>Ana Rita Ortigoso, Gabriel Vieira, Daniel Fuentes, Luis Frazão, Nuno Costa, António Pereira</i>	
Optimization Algorithm Balancing Output and Fairness in Crowdsourcing.....	68
<i>Xiao Chen</i>	
A Dynamic Auction with Stochastic Optimization for Flexible Time Datacenters in Vehicular Cloud	74
<i>Syed R Rizvi, Susan Zehra</i>	
Implementation of a Low-Cost IoT Indoor Air Quality Monitor in Dynamic Public Environments.....	80
<i>Marco Cardenas-Juarez, Rafael Aguilar-Gonzalez, Jorge Simon, Alessandra Rizzardi, Gladys Diaz, Salvador Ruiz-Correa</i>	
Dynamic Programming for Task Offloading in Edge-Cloud Computing.....	87
<i>Ye Xia</i>	
ConvLSTMTransNet: A Hybrid Deep Learning Approach for Internet Traffic Telemetry.....	93
<i>Sajal Saha, Saikat Das, Glaucio H. S. Carvalho</i>	

Subcarrier Selection for HAR Using CSI and CNN: Reducing Complexity and Enhancing Accuracy.....	99
<i>Cledson De Sousa, Victor Fernandes, Emanuel Afonso Coimbra, Lucas Huguenin</i>	
Communication-Aided Terahertz Sensing: A Novel Indoor People Counting System Via Deep Learning	106
<i>Eslam Hasan, Elmahedi Mahalal, Muhammad Ismail, Zi-Yang Wu, Mostafa M. Fouda, Zubair Md Fadlullah</i>	
Generative Adversarial Networks for IoT Security: A Convolutional Neural Network Approach.....	112
<i>Brandon Fernandez, Hafiz Yasir Noor, Isaac Woungang, Glaucio H. S. Carvalho</i>	
An RNN Approach to Real-Time Multimedia QoE Assessment Via Facial Expressions.....	118
<i>Eduardo Lopes Pereira Neto, Sergio Hayashi, Daniel Macêdo Batista, R. Hirata, Nina S. T. Hirata, Karina Valdivia Delgado</i>	
Fairness-Utilization Trade-Off in Wireless Networks with Explainable Kolmogorov-Arnold Networks	124
<i>Masoud Shokrnezhad, Hamidreza Mazandarani, Tarik Taleb</i>	
Low-Complexity Beamforming for MISO Interference Channel: A Unified Unsupervised Learning Approach.....	130
<i>Salma Othman, Karim Banawan, Hassan Elragal</i>	
Leveraging Autoformer Deep Learning for Real-Time Throughput Forecasting in Cellular Adaptive Video Streaming	137
<i>Maram Helmy, Mohamed S. Hassan, Usman Tariq, Mahmoud H. Ismail</i>	
Advancing Spectrum Management with Machine Learning: A System Identification Case Study.....	142
<i>Kareem Baddour, Humphrey Rutagemwa</i>	
Multi-Channel RMSA Using Spectrum Partition and Split-Spectrum Approach in Elastic Optical Network.....	148
<i>Ruchi Srivastava, Varsha Lohani, Anjali Sharma, Yatindra Nath Singh</i>	
Timing-As-A-Service (TAAS): Over-The-Air Synchronization Method for Industrial IoT	154
<i>Daniel Philip Venmani, Fares Zerradi, Fatiha Hamma, Bruno Jahan, Kamal Singh</i>	
A Link-Level Performance Analysis for Mediumband Wireless Communication	160
<i>Abdulla Firag, Jiabin Jia, Dushyantha A Basnayaka</i>	
Adaptive Forward Error Correction for Voice Over IP with Random Linear Network Coding	166
<i>Yi-Chiuan Su, Quincy Wu</i>	
Evaluation of Spectrum Sharing Algorithms for Networks with Heterogeneous Wireless Devices.....	172
<i>Ankit Walishetti, Igor Kadota, Aidan Kim, Colin Ward, Eduardo Gutierrez, Randall Berry</i>	
Neural Networks Meet Elliptic Curve Cryptography: A Novel Approach to Secure Communication.....	178
<i>Mina Cecilie Wøien, Ferhat Ozgur Catak, Murat Kuzlu, Umit Cali</i>	
Real-Time Intrusion Detection with Sequence-Aware Neural Networks for Internet of Medical Things.....	184
<i>Heitor Werneck, Daniel Macêdo Batista, R. Hirata, Marcelo Queiroz</i>	
Altering 5G Network Parameters Using Deep Reinforcement Learning to Optimize QoS and Security.....	190
<i>Hamza Kaddour, Israel G. Olaveson, Cameron J. Krome, Mostafa M. Fouda</i>	

Intelligent Anomaly Detection System for Industrial Control Systems.....	196
<i>Reham Eltomy, Wassila Lalouani</i>	
Smart Contracts for SMEs and Large Companies.....	202
<i>Christian Gang Liu, Peter Bodorik, Dawn Jutla</i>	
Hybrid POF-VLC Network Downlink in Indoor Environments	209
<i>Pau Salvador, Maria Jose Canet, Javier Valls, Vicenç Almenar, Juan Luis Corral</i>	
Navigable Architectures for Complex Communication Networks	215
<i>András Majdán, Lejla Pasic, Zalán Heszberger, Rolland Vida, József Bíró</i>	
LSTM-Based Resource Prediction for Disaggregated RAN in 5G Non-Terrestrial Networks.....	220
<i>Henok B. Tsegaye, Petro M. Tshakwanda, Yonatan M. Worku, Claudio Sacchi, Christos Christodoulou, Michael Devetsikiotis</i>	
Adaptive Node Management in Edge Networks Under Time-Varying Workloads	226
<i>Efthymios Oikonomou, Angelos Rouskas, Dimitrios N. Skoutas</i>	
Performance Evaluation of Quantum-Resistant IKEv2 Protocol for Satellite Networking Environments.....	232
<i>Ahmet Mutlugun, Yacoub Hanna, Kemal Akkaya</i>	
Optimizing Cylindrical Antennas for Cost Savings Using Non-Integer Arrays	239
<i>Roopesh Kumar Polaganga, Qilian Liang</i>	
A Simulation Study of Radio Frequency Propagation for an Indoor Naval Vessel Environment.....	245
<i>Otilia Popescu, Dimitrie C. Popescu, Murat Kuzlu</i>	
Modeling Blockage in High Directional Wireless Systems.....	250
<i>Evangelos Koutsonas, Alexandros-Apostolos A. Boulogeorgos, Stylianos E. Trevlakis, Tanweer Ali, Theodoros A. Tsiftis</i>	
A Geometry-Based Stochastic Wireless Channel Model Using Channel Images.....	256
<i>Seongjoon Kang</i>	
Wireless Information Power Transfer Assessment by Deterministic Radio Propagation Estimations in Smart City Contexts	262
<i>Imanol Picallo, Peio Lopez-Iturri, Hicham Klaina, Mikel Celaya-Echarri, Fidel Alejandro Rodriguez-Corbo, Leyre Azpilicueta, Francisco Falcone</i>	

Author Index