

2025 IEEE 31st International Symposium on Local and Metropolitan Area Networks (LANMAN 2025)

**Liile, France
7-8 July 2025**



**IEEE Catalog Number: CFP25MAN-POD
ISBN: 979-8-3315-1479-2**

**Copyright © 2025 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:	CFP25MAN-POD
ISBN (Print-On-Demand):	979-8-3315-1479-2
ISBN (Online):	979-8-3315-1478-5
ISSN:	1944-0367

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

Evaluation of Graph Neural Networks in Airborne Networks.....	1
<i>Ali Yilmaz Yildirim, Fabien Geyer, Georg Carle</i>	
Advanced Resource Management in Cell-Free Massive MIMO Systems with WINNER II Channels	4
<i>Selina Cheggour, Eric Pierre Simon, Valeria Loscri</i>	
Deployment of a Machine Learning-SDN Pipeline for IoT Threat Detection in Smart City Environments.....	10
<i>Antonio Wendell De O. Rodrigues, Francisco Erialdo D. Freitas, Rejane Cavalcante Sá Rodrigues, Rogério Guerra Diógenes Filho, André Luiz C. De Araújo</i>	
Integrating Homomorphic Encryption and Synthetic Data in FL for Privacy and Learning Quality	12
<i>Yenan Wang, Carla Fabiana Chiasserini, Elad Michael Schiller</i>	
Machine Learning-Based Anomaly Detection of Correlated Sensor Data: An Integrated Principal Component Analysis-Autoencoder Approach	18
<i>Tanish Baranwal, Arnab Das, Srihari Varada, Santanu Das, Mohammad R. Haider</i>	
Have Your CAKE and Eat it Too: Scaling Software Rate Limiting Across CPU Cores.....	20
<i>Jonas Köppler, Toke Høiland-Jørgensen, Stefan Schmid</i>	
A Risk-Based Adaptive Authentication Model for Mobile IoT	26
<i>Asma Arab, Ghada Jaber, Abdelmadjid Bouabdallah</i>	
The Cost of Packet Loss on ML-Based Traffic Analysis.....	32
<i>Johann Hugon, Paul Schmitt, Francesco Bronzino</i>	
Network Congestion Estimation and Analysis in Vehicular Networks.....	38
<i>Andreia Figueiredo, Miguel Luís, Pedro Rito, Susana Sargento</i>	
UAV Localization Using Long-Range Ultra-Wideband Networks.....	41
<i>Pierpaolo Loreti, Andrea Crescenzi, Lorenzo Bracciale, Daniele Carnevale, Massimiliano De Luca, Luca Chiaraviglio</i>	
Leveraging Signal Delay and Power Features for Multiuser Detection in LoRaWAN	47
<i>Andrea Petroni, Mauro Biagi</i>	
Innovations in MEC Federation: Leveraging SDN for Enhanced Connectivity and Resource Optimization.....	53
<i>David Santos, Rui Silva, Miguel Matos, Daniel Corujo, Rui Aguiar</i>	
Fair and Robust Federated Learning Via Reputation-Aware Incentives and Model Aggregation	59
<i>Sofia Barkatsa, Maria Diamanti, Panagiotis Charatsaris, Symeon Papavassiliou</i>	
TRON: Traffic Management and Resource Allocation for SDN-Enabled 5G/6G Networks	65
<i>Lalita Agrawal, Ayan Mondal</i>	
On Fairness in Network Sharing	67
<i>Maoquan Ni, Daniela Renga, Marco Ajmone Marsan, Michela Meo</i>	
Seasonal Dynamics of Wireless Communications in Concentrated Solar Power Fields	73
<i>Md Sadman Siraj, Aisha B Rahman, Eirini Eleni Tsiropoulou</i>	

Model-Distributed Inference for Large Language Models at the Edge	79
<i>Davide Macario, Hulya Seferoglu, Erdem Koyuncu</i>	
Coalition Among Multiple Providers of LEO Satellite Networks	85
<i>Kaito Kondo, Noriaki Kamiyama, Sumiko Miyata</i>	
Dual-Purpose VLC for Water Quality Sensing and Underwater Adaptive Communication	91
<i>Antonio Costanzo, Nicolas Michel, Alexandra Carriere</i>	
Design of a Hierarchical SDN-Based Control Architecture for IEC 61850-Oriented Teleprotection Systems in Power Grids.....	97
<i>Antonio Wendell De O. Rodrigues, Rogério Guerra Diógenes Filho, Rejane Cavalcante Sá Rodrigues, André Luiz C. De Araújo, Fabrício Evangelista Sousa, Guilherme Saidler</i>	
Task Scheduling with Duplication Avoidance for ICN-Based Autonomous In-Network Computing.....	99
<i>Yuki Niibe, Noriaki Kamiyama</i>	
Reverse Load Solicitation Methods for Fog Networks	101
<i>Mohammed Jasim, Nazli Siasi, Fadhil Alhamami, Wei Sun</i>	

Author Index