

2025 12th International Conference on Software Defined Systems (SDS 2025)

**Lyon, France
2-5 December 2025**

IEEE Catalog Number:
ISBN:

CFP25CMO-POD
979-8-3315-8029-2



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:	CFP25CMO-POD
ISBN (Print-On-Demand):	979-8-3315-8029-2
ISBN (Online):	979-8-3315-7258-7

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

Unifying Distributed Workflows: A High-Performance Protocol for CONTROL-CORE	1
<i>Saksham Gera, Mayuresh v. Kothare, Pradeeban Kathiravelu</i>	
Resilient SDR-Based Remote Sensing with Asynchronous Edge Upload and Cloud-Native Parallel Processing	5
<i>Sonny Wandel, Michael Einhaus</i>	
SnapAI: a Simulator for Network Algorithms and Protocols with Artificial Intelligence integration	13
<i>João Vitor S. Coelho, Leon L. Lausberg, Philipp Zißner, Peter Sevenich, Vinícius F. S. Mota</i> <i>Cássio V. S. Prazeres, Paulo H. L. Rettore, Bruno P. Santos</i>	
Navigating the New Frontier: Security Vulnerabilities in Social IoT Compared to Conventional IoT	21
<i>Deborah Oladipo, Elhadj Benkhelifa, Tamara Zhukabayeva</i>	
Enabling the Design of Robust Network Applications by Creating Realistic Scenarios	28
<i>Edgar S. Oliveira, Paulo H. L. Rettore, Clayson Celes, Leon Luca Lausberg, Rodolfo Meneguette</i> <i>Nils Aschenbruck</i>	
Privacy-Preserving Federated Learning for Secure Healthcare Data Processing	32
<i>Ateeq Ur Rehman, Anoud Bani Hani, Sana Maroof, Sara Shar Faiz Alshehri</i>	
MobMetrics: A Modular Architecture for Computing and Visualizing Mobility Metrics	37
<i>Márcio P. C. Filho, Lucas Novais, Leon L. Lausberg, Peter Sevenich, Paulo H. L. Rettore, Bruno P. Santos</i>	
Efficient Deep Learning for Biometrics: Overview, Challenges and Trends in Ear of Frugal AI	45
<i>Karim Haroun, Aya Manel Zitouni, Aicha Zenakhri, Meriem Amel Guessoum, Larbi Boubchir</i>	
The Concept of a Forecasting System for the Sustainable Development of SMEs in Kazakhstan	53
<i>Shara Toibayeva, Irbulat Utepbergenov, Dina Abylkhasenov, Baurzhan Zholdybaev, Fariza Zainolda</i> <i>Ablay Aldabergenov</i>	
Green by Design? Investigating the Energy and Carbon Footprint of Chia Network	59
<i>Soraya Djerrab, Clémentine Gritti, Rahima Benzenati</i>	
Enhancing Security and Performance in Software-Defined Networks Using AI-Driven Automation	67
<i>Suha AlQaruty, Reema Al Qaruty, Khawlah M. Al-Tkayneh, Samer Abdel Hadi</i>	
Cryptography and Bayesian Networks for Security and Trust in IoT, 5G, and Beyond Networks: A Comprehensive Survey	74
<i>Assel Abdildayeva, Adda Boualem, Abdelkader Berrouachedi, Assem Shayakhmetova, Elhadj Benkhelifa</i>	
Towards Realistic Testing of Algorithms and Protocols in IoT Through a Novel Mobility Model	84
<i>Leon Luca Lausberg, Paulo H. L. Rettore, Philipp Zißner, Sean Kloth, Edgar S. Oliveira, Clayson Celes</i> <i>Peter Sevenich, Bruno P. Santos</i>	
Deep Learning Approach for Animal Classification and Detection: Leveraging ResNeXt, MaXViT and K-D Trees for Accurate and Scalable Wildlife Monitoring	88
<i>Kanda Patrick Tshinu, Chunling Tu, Owolawi Pius Adewale, Antonie Smith</i>	
Data-Driven Health Monitoring of Platform Ecosystems: A Systematic Literature Review	98
<i>Shady Hegazy, Muhammad Ammar, Christoph Elsner, Jan Bosch, Helena Holmström Olsson</i>	

Improved Detection and Prevention of Phishing URLs Using Ensemble Machine Learning Techniques	106
<i>Tomiwa Kunle Oluwadare, Pantaleon Lutta</i>	
Optimization of Control Plane for Load Balancing in SD-Wi-Fi Networks	114
<i>Belkacem Athamena, Mohamed Raid Athamena, Zina Houhamdi</i>	
Edge AI and Federated Learning: A Post-Cloud Paradigm for The Next Decade of Intelligent Computing	119
<i>P. William, Firas Tayseer Ayasrah, Thipendra P. Singh, D. B. Pardeshi</i>	
Scaling and Securing Enterprise Healthcare Networks with Blockchain	125
<i>Constantine Hinds, Macchelssy Dinganga, Pradeeban Kathiravelu</i>	
A Comparative Study of Machine Learning Models for Breast Cancer Diagnosis Using the Wisconsin Diagnostic Dataset	129
<i>Masum Billah, Mohammad Hasan, Abeda Raiyan</i>	
An Automated Scanner for Detecting Common Web Application Vulnerabilities with a Focus on Enhanced Performance and Security.	136
<i>Anthonia Osarumwense Taiwo, Pantaleon Lutta</i>	