

2025 IEEE 16th International Symposium on Autonomous Decentralized Systems (ISADS 2025)

**Tucson, Arizona, USA
21-24 July 2025**



**IEEE Catalog Number: CFP25099-POD
ISBN: 979-8-3315-8920-2**

**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:	CFP25099-POD
ISBN (Print-On-Demand):	979-8-3315-8920-2
ISBN (Online):	979-8-3315-8919-6
ISSN:	1541-0056

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

2025 IEEE 16th International Symposium on Autonomous Decentralized Systems (ISADS)

ISADS 2025

Table of Contents

Session 1: Autonomous Distributed AI and Computing

My Eye AI: Object Detection System Using YOLO, OWL-ViT, and BLIP	1
<i>Salma Wahwah (Arizona State University, USA) and Yinong Chen (Arizona State University, USA)</i>	
Enhancing Computer Architecture Education Through Decentralized Visual Programming and RISC-V Simulation	9
<i>Gennaro De Luca (Arizona State University, USA), John Cowan (Arizona State University, USA), and Yinong Chen (Arizona State University, USA)</i>	
Quantum Parallel Processing Framework for Image Processing Applications	16
<i>Juan Carlos Salcedo (National University, USA) and Khaled Ahmed (Southern Illinois University, USA)</i>	
A Decentralized IoT-Enhanced Mobile Agents for Resilient E-Commerce	21
<i>Mohamed Shili (University of Carthage, Tunisia), Salah Hammedi (University of Sousse, Tunisia), and Amjad Gawanmeh (University of Dubai, UAE)</i>	

Session 2: Networks, Communication, and Security

Autonomous Distributed Spectrum Clustering for Dynamic User Density in Multi-Hop Wireless Networks	29
<i>Yuuki Homma (Tokyo Metropolitan University, Japan), Chisa Takano (Hiroshima City University, Japan), and Masaki Aida (Tokyo Metropolitan University, Japan)</i>	
Security-Aware Bag-of-Tasks Scheduling with Conditional Imprecise Computations in a Hybrid Cloud	37
<i>Helen D. Karatza (Aristotle University of Thessaloniki, Greece)</i>	
A Strategy to Suppress Attention to Multiple Disseminators of Inappropriate Content	45
<i>Naoki Hirakura (Toyama Prefectural University, Japan)</i>	

Extending 5G Small Cell Sojourn Distance Models Toward Realistic Scenarios Using a von Mises Distribution-Based Placement	52
<i>Kenta Fukuhara (Shibaura Institute of Technology, Japan), Sumiko Miyata (Institute of Science Tokyo, Japan), Masaki Aida (Tokyo Metropolitan University, Japan), and Eiji Kamioka (Shibaura Institute of Technology, Japan)</i>	

ONLINE Session 1: AI, Blockchain, and Security

Enhance the Mining Popularity with low Power Consumption on PoA Autonomous Decentralized Voting Blockchain	58
<i>Hironao Takahashi (Emaan Institute of Management & Science Pakistan, Pakistan), Muhammad Mubashir Khan (DTS Advanced Research Center, Blockchain Lab, Pakistan), and Uzair Lakhani (DTS Advanced Research Center, Blockchain Lab, Pakistan)</i>	
Efficient Optimization of Hierarchical Joint Graph for Multi-Metric Approximate Nearest Neighbor Search	66
<i>Xueli Yu (Guangzhou University, China), Canyong Cai (Guangzhou University, China), Zuolin Feng (Guangzhou University, China), Hang Lin (Guangzhou University, China), Shuohuang Xu (Guangzhou University, China), and Yun Peng (Guangzhou University, China)</i>	
Autonomous LLMs for Healthcare Diagnoses	74
<i>Hafiz Farooq Ahmad (King Faisal University, Saudi Arabia) and Sarah Shafqat (Smart e-Health, Pakistan; International Islamic University, Pakistan)</i>	
Synthetic Network Intelligence: Diffusion-Based Data Generation for Secure Communication Analysis	81
<i>Shruti Hardia (Bradley University)</i>	
Decentralized Intelligence for Smart Cities: Integrating Federated Learning, Blockchain, and Foundation Models for Privacy-Preserving Urban Data Management	87
<i>Shruti Hardia (Bradley University)</i>	

ONLINE Session 2 Distributed Systems, Imaging, and Simulation

Dynamic Fire Response in Railway Construction Scenarios: Collaborative Control Optimization of Worker Evacuation and Equipment Rescue Based on Multi-Agent DRL with Adaptive Path Planning	94
<i>Xiaoqing Zeng (Tongji University, China), Li Chen (Tongji University, China), Hong Chen (Shanghai Urban Construction Design and Research Institute, China), Mingchang Zhu (Tongji University, China), Yixin Guo (Tongji University, China), and Zaiqi Li (Tongji University, China)</i>	
Epileptic Focal Area Segmentation Via Multimodal MRI Transfer Learning	102
<i>Siyuan He (Chongqing University of Technology, China), Xinyi Chang (Chongqing University of Technology, China), Xin Feng (Chongqing University of Technology, China), Qiongmin Zhang (Chongqing University of Technology, China), and Bingyi Ran (Chongqing University of Technology, China)</i>	

A Predictive Model of MOOC Dropout Based on Attention Mechanism	110
<i>Junxi Zhuang (Beijing University of Technology, China), Yingxu Lai (Beijing University of Technology, China), and Rui Song (Beijing University of Technology, China)</i>	
Snapshot Compressive Imaging and ADSs: Concepts and Learning-Based Trends	119
<i>Duo Chen (Chongqing University of Education, China), Zixin Tang (Southwestern University of Finance, China), Zhiqin Zhu (Chongqing University of Posts and Telecommunications, China), and Guanqiu Qi (State University of New York at Buffalo, USA)</i>	
Wide-Area UAS Tracking System for UAS Operation Management	127
<i>Tadashi Koga (Electronic Navigation Research Institute(ENRI), National Institute of Maritime, Port and Aviation Technology, Japan), Daichi Toratani (Electronic Navigation Research Institute(ENRI), National Institute of Maritime, Port and Aviation Technology, Japan), and Gaku Sato (Electronic Navigation Research Institute, National Institute of Maritime, Port and Aviation Technology, Japan)</i>	
Residual and Layer Attention Enhanced Fine-Grained Image Classification	132
<i>Lianyin Jia (Kunming University of Science and Technology, China), Heyu Wang (Kunming University of Science and Technology, China), Bingxin Zhao (Kunming University of Science and Technology, China), Xinming Xing (Communications Hubei Branch Company, China), Mengjuan Li (Yunnan Normal university, China), Jiaman Ding (Kunming University of Science and Technology, China), Yong Feng (Kunming University of Science and Technology, China), and Fengling Xia (Kunming University of Science and Technology, China)</i>	
AI-Powered Robotic Systems for Intelligent Retail Shelf Management	140
<i>Hira Ajmal (Lahor School of Economics)</i>	
Author Index	149