The 34th Wireless and Optical Communications Conference

IEEE WOCC 2025

Advances in Universal Wireless Communication for Internet of Things

In this special session, we delve into the cutting-edge developments that are revolutionizing the way devices connect and interact in our increasingly interconnected world. From the robustness of network security protocols that safeguard data integrity and privacy, to the innovative techniques in underwater communication that enable seamless connectivity in aquatic environments, this session explores a wide array of topics. We will also discuss the latest advancements in satellite communication, which extend the reach of IoT networks to remote and underserved areas. The integration of artificial intelligence into wireless communication systems will be highlighted, showcasing how AI-driven algorithms optimize network performance, enhance energy efficiency, and enable intelligent decision-making. Additionally, the session will cover the convergence of integrated sensing and communication, where sensors not only gather data but also facilitate its transmission, creating more efficient and responsive IoT ecosystems. Finally, we will touch upon the critical role of navigation technologies in ensuring accurate positioning and reliable communication, essential for applications ranging from smart cities to autonomous systems. Join us as we navigate through these exciting advancements, shaping the future of universal wireless communication for the Internet of Things.

Topics of the Special Session

- Artificial Intelligence-Driven Resource Allocation in Wireless IoT Networks
- Secure Authentication and Encryption Mechanisms for IoT Networks
- Underwater IoT Communication Protocols and Channel Modeling
- Satellite-IoT Integration for Global Connectivity
- Integrated Sensing and Communication Systems for Smart Cities
- Navigation and Localization Techniques for IoT Devices
- Adaptive Modulation and Coding Techniques for IoT
- Edge Computing and Distributed Intelligence in IoT Networks

Session Chairs

Weiwei Jiang Assistant Professor

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Planned Contributions ▶▶▶▶

1. "A Survey of Authentication Protocols for Enhancing Security in Underwater Communication Systems", Sai Varshitha G, Rupa Ch, Divya D, Ramu Tanguturi and Thippa Reddy Gadekallu, Deemed to be University, Zhejiang A & F university and Lovely Professional University
2. "Intelligent Resource Optimization Methods for Wireless Federated Learning", Zihua Chen, Weiwei Jiang, Beijing University of Posts and Telecommunications, China
3. "Multi-Agent Deep Reinforcement Learning-based Satellite Network Routing", Zimeng Ni, Weiwei Jiang, Beijing University of Posts and Telecommunications, China
4. "Network Resource Optimization Methods for Mobile Edge Computing", Ziyan Ren, Weiwei Jiang, Beijing University of Posts and Telecommunications, China
5. "Deep Learning-based Wireless Fingerprint Representation Learning and Device Identification", Yuhan Ye, Weiwei Jiang, Beijing University of Posts and Telecommunications, China
6. "Deep Learning-based Wireless Sensing Technology", Xinyu Zhao, Weiwei Jiang, Beijing University of Posts and Telecommunications, China

Submission

Submission Deadline : **March 1, 2025**.

Submission Link: https://edas.info/newPaper.php?c=33162&track=130143

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Further information can be found on the conference website at: https://www.wocc.org