



Communication Theory Symposium

Co-Chairs

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Scope and Motivation

The Communication Theory Symposium will focus on the fundamentals of communication systems. The Symposium welcomes original and innovative research work in these general areas, focusing on the physical layer and its interactions with higher layers. High quality papers reporting on applications and validation of communications theory from both industry and academia are encouraged.

Topics of Interest

The Communication Theory Symposium seeks original contributions in the following topical areas, plus others that are not explicitly listed but are closely related:

- Age of Information
- Cache-aided and edge-aided communication
- Channel estimation and synchronization
- Coding theory and techniques, adaptive modulation and coding
- Cognitive radio and dynamic spectrum access
- Communication theory aspects of distributed, cloud and edge computing
- Communication theory aspects of networking and cross-layer design
- Communication theory aspects of powerline, underwater, and visible light communications
- Cooperative communications
- Detection and estimation theory
- Device-to-device and machine-type communications
- Distributed coding and computing
- Diversity and fading countermeasures
- Edge AI and machine learning in communication systems
- Energy efficient and green PHY layer design
- Grant-free random or massive multiple access
- Heterogeneous and small-cell networks
- Information theory aspects of wireless communications
- Integrated communication and sensing (ISAC), joint communication and sensing (JCAS)
- Interference management, cancellation, alignment, and avoidance
- Iterative techniques, detection, and decoding
- LEO satellite communications

- Millimeter wave and terahertz communications
- Multiple access, radio resource management, and scheduling
- Multiple-input multiple-output (MIMO) systems and massive MIMO
- Near-field communication/sensing
- Network and multiuser information theory
- Novel waveforms and modulation schemes
- Non-terrestrial networks
- Optical communications
- Orthogonal and non-orthogonal multiple access techniques
- Orthogonal frequency division multiplexing (OFDM) and multi-carrier systems
- Physical layer security and privacy
- Semantic communications and goal-oriented communications
- Source coding and data compression
- Ultra-reliable and low-latency communications
- Ultra-wideband communication systems
- Unmanned aerial vehicles (UAV) communications
- Wireless communications through reconfigurable intelligent surfaces

Biographies of the Co-Chairs

Y.-W. Peter Hong received his Ph.D. from Cornell University in 2005 and is currently a Distinguished Professor at National Tsing Hua University, Taiwan. Dr. Hong is a Vice Director of IEEE ComSoc Asia-Pacific Board and was a ComSoc Distinguished Lecturer in 2022-2023. He also serves as Senior Area Editor of IEEE Transactions on Signal Processing. His research interests include AI/ML in wireless communications, signal processing for IoT and sensor networks, UAV and satellite communications, distributed learning and optimization, and physical layer secrecy.

Yuanwei Liu is (tenured) full Professor in Department of Electrical and Electronic Engineering (EEE) at The University of Hong Kong (HKU). He is a Fellow of the IEEE, a Fellow of AAIA, a Web of Science Highly Cited Researcher, an IEEE Communication Society Distinguished Lecturer, and an IEEE Vehicular Technology Society Distinguished Lecturer. His research interests include non-orthogonal multiple access, reconfigurable intelligent surface, near field communications, integrated sensing and communications, and machine learning.

Jie Xu is a Tenured Associate Professor with The Chinese University of Hong Kong, Shenzhen, China. He is the Vice Chair of IEEE Wireless Communications Technical Committee, and the Vice Co-chair of IEEE Emerging Technology Initiative on ISAC. He also serves as an Associate Editor-in-Chief of IEEE Transactions on Mobile Computing, and an Editor of IEEE Transactions on Wireless Communications and IEEE Transactions on Communications. His research interests include wireless communications, edge intelligence, UAV communications, and ISAC.

How to Submit a Paper

All papers for technical symposia should be submitted via EDAS. Full instructions on how to submit papers and important deadlines are posted at <https://icc2025.ieee-icc.org/>

The authors of selected papers from this symposium will be invited to submit an extended version of their work for fast-track review and possible publication in the IEEE Open Journal of the Communications Society.