Call for papers

Integrated Sensing and Communication (ISAC) Symposium

FCN 2025

August 18-22, 2025 Belgrade, Serbia http://www.future-forum.org.cn/en/fcn2025/index.html

Co-Chairs:

Xianbin Wang	Western University, Canada (xianbin.wang@uwo.ca)
Rui Dinis	Universidade Nova de Lisboa, Portugal (rdinis@fct.unl.pt)
Wei Gong	Tongji University, China (weigong@tongji.edu.cn)
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Scope

Integrated Sensing and Communication (ISAC) has become a transformative paradigm for future networks, unifying wireless communication and sensing with shared radio resources and network platforms. ISAC enables diverse applications like autonomous driving, smart cities, and IoT, while offering major benefits: integration gain for resource efficiency and coordination gain for performance optimization. As 5G evolves and 6G emerges, ISAC research faces challenges in waveform design, resource allocation, hardware integration, as well as security and privacy. This symposium invites contributions on advancements, methodologies, and novel use cases to shape the future of intelligent wireless systems. The scope of this symposium includes, but is not limited to:

- Fundamental performance limits and information theoretical bounds for ISAC
- Waveform design and signal processing techniques for ISAC
- Transceiver structures and hardware implementation for ISAC
- Tradeoffs between communication and sensing functionalities
- · Spectrum analysis, management, and coexistence strategies for ISAC
- · Full duplex and interference management in ISAC systems
- Precoding, modulation, and receiver design for ISAC
- Security, privacy, and trust issues in ISAC networks
- Machine learning and AI-driven approaches for ISAC optimization
- MIMO, Massive MIMO, and intelligent reflecting surface (IRS) technologies for ISAC
- Millimeter-wave and THz communication for ISAC applications
- ISAC-based multi-functional networks and architectures
- ISAC for unmanned aerial vehicles (UAV) and vehicular-to-everything (V2X) networks
- · Human activity recognition, eHealth, and indoor localization using ISAC
- Delay-Doppler signal processing and tracking algorithms for ISAC
- Integrated sensing, communication, and computing paradigms
- Wi-Fi sensing, positioning, and detection techniques for ISAC
- Experimental demonstrations, prototypes, and testbeds for ISAC
- Standardization progress and future directions of ISAC

Submission Guidelines

Prospective authors should follow the instructions at <u>http://www.future-forum.org.cn/en/fcn2025/Kit.html</u> to prepare their manuscripts. All papers should be submitted via EDAS. Submission information can be found at <u>http://www.future-forum.org.cn/en/fcn2025/Submission.html</u>.

Short Biographies of Co-Chairs

Xianbin Wang

Xianbin Wang (Fellow, IEEE) is a professor and a Tier-1 Canada Research Chair in Trusted Communications and Computing at Western University, Canada. His current research interests include 5G/6G technologies, Internet of Things, communications security, machine learning, and intelligent communications. He is a fellow of the Canadian Academy of Engineering and a fellow of the Engineering Institute of Canada. He has received many prestigious awards and recognitions, including the IEEE Canada R.A. Fessenden Award, Canada Research Chair, Engineering Research Excellence Award with Western University, Canadian Federal Government Public Service Award, Ontario Early Researcher Award, and nine Best Paper Awards.

Rui Dinis

Rui Dinis (Senior Member, IEEE) received the Ph.D. degree from the Instituto Superior Técnico (IST), Technical University of Lisbon, Lisbon, Portugal, in 2001, and the Habilitation degree in telecommunications from the Faculdade de Ciências e Tecnologia (FCT), Universidade Nova de Lisboa (UNL), Lisbon, in 2010. From 2001 to 2008, he was an Assistant Professor with IST. He is currently a Full Professor with FCT-UNL. In 2003, he was an Invited Researcher with Carleton University, Ottawa, ON, Canada. He was a Researcher with the Centro de Análise e Processamento de Sinal (CAPS), IST, from 1992 to 2005; and a Researcher with the Instituto de Sistemas e Robótica (ISR), from 2005 to 2008. Since 2009, he has been a Senior Researcher with the Instituto de Telecomunicações (IT). His research interests are centered in transmission, estimation, and detection techniques for wireless communications. He is an Editor of IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS, IEEE TRANSACTIONS ON COMMUNICATIONS, IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY, IEEE OPEN JOURNAL ON COMMUNICATIONS, and Physical Communications (Elsevier). He was also a guest editor of several special issues. He is a VTS Distinguished Speaker and a ComSoc Distinguished Lecturer.

Nidal Nasser

Dr. Nidal Nasser (M'04-SM'14) is a distinguished academic and researcher in the field of wireless communication networks and systems. He holds B.Sc. and M.Sc. degrees with Honors in Computer Engineering from Kuwait University, and a Ph.D. from Queen's University in Canada. Currently, he is a Professor of Software Engineering at Alfaisal University in Saudi Arabia, where he also served as the Dean of the College of Engineering from 2014 to 2017. Dr. Nasser's research contributions are widely recognized, with over 190 journal publications, conference papers, and book chapters to his name. He has received numerous awards, including the Best Research Paper Award at various international conferences, the Faculty Award for Research Excellence at Alfaisal University, and multiple awards from IBM for his expertise in mobile applications, big data, IoT, artificial intelligence, and blockchain development. Dr. Nasser has also been appointed as an associate editor for prestigious journals such as Wiley's International Journal on Communication Systems and Frontiers in Communications and Networks Journal. He has served in various

leadership roles at international IEEE conferences and workshops, and is a member of several IEEE Communication Society technical committees. In addition, he has been recognized by Stanford University as one of the "World's Top 2% Scientists" for his significant contributions to the field of networking. Currently, Dr. Nasser is also serving as the IEEE ComSoc Distinguished Lecturer for the class of 2023-2024, further showcasing his expertise and impact in the field.

Wei Gong

Wei Gong (Member, IEEE) received the Ph.D. degree in computer science from the University of Chinese Academy of Sciences, Beijing, China. He is currently an Assistant Professor with the Department of Control Science and Engineering, Tongji University. He was a Postdoctoral Fellow with the Department of Electrical and Computer Engineering, Western University, London, ON, Canada. His research interests include wireless sensing systems, edge intelligence, and distributed learning.