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AETiC Special Issue on “Joint Sensing and Communication for Edge Computing Networks”

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Special Issue Aims and Scopes:

With the rapid development of wireless communication and edge computing, Internet of Things (IoT) networks have been widely applied in many areas, such as industrial IoT networks, intelligent transportation and monitoring, smart cities, and smart home. Among these applications, the nodes in the system can communicate with each other and compute the tasks cooperatively. Meanwhile, with the development of sensing technique in radar systems, the wireless sensing has been proposed to be incorporated in the edge computing networks, which can assist the communication and computing in the systems. The integration of sensing and communications into the edge computing networks is expected to attain substantial gains over spectral, energy, time, and chip resources, while sufficiently reducing the costs, which is envisioned as one of the keys for the future 6G wireless networks, supporting various scenarios such as the Internet of things, vehicular networks, smart cities, space-air-ground integrated networks, etc.

However, there are still several critical challenges on the joint sensing and communication for edge computing networks. One critical challenge is that the intelligent performance evaluation among the joint sensing, communication and computing, which can help reveal the working mechanism for the edge computing networks. One more challenge is the intelligent system design for the joint sensing and communication and computing in edge computing networks, where some intelligent algorithms should be employed to devise the system communication and computing schemes. Another big challenge is the system resource allocation in the



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edge computing networks, where the resources from the sensing, communication and computing should be exploited in an intelligent way such as federated learning.

This special issue carefully examines advances and future development in the core areas of joint sensing and communication for edge computing networks. It will include a variety of research works focusing on sensing, computing and communication, the advantages and disadvantages of each technology and how they can be practically applied.

Topics may include, but are not limited to:

- Performance analysis of joint sensing and communication (JSAC) in edge computing networks
- Intelligent precoding design in edge computing networks
- Advanced waveform design for joint sensing and communication
- Deep receiver design with joint sensing and computing
- Network protocols of edge computing networks
- Resource allocation and management in edge computing networks
- Security and privacy issues of joint sensing and communication
- Prototype or implementation of edge computing networks
- Hardware design and system of edge computing networks
- Field test or simulation of joint sensing and communication
- Federated learning, deep reinforcement learning for JSAC
- JSAC for Industrial IoT networks, smart cities

Submission Deadline: 30th June 2023

Review Notification: Continuous process

Publication Date: 30th August 2023 (tentative)

Submission Procedure:

Authors can submit Full papers, with a length between eight to eighteen pages, using [AETiC's Submission and Review Platform](#). While submitting, authors need to select "SI_JSAC" as the section to indicate the submission is for this special issue. Please make sure that the manuscript has been prepared using [AETiC MS Word](#)



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If you require any further assistance or information, feel free to email us at aetic@theiaer.org.

We look forward to receiving your contributions.

Very best Regards

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