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Special Session on
AI for Wireless Network Modeling and Optimization

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Scope of the session

In an era defined by pervasive connectivity and digital transformation, the convergence of artificial intelligence (AI) and wireless networking stands as a pivotal paradigm for the present and future of communication and other systems. AI is becoming increasingly significant in the wireless networking domain, showing the potential for revolutionizing the efficiency and adaptability of wireless networks considering the ever-growing challenges posed by the dynamism of environments. In this context, this session seeks novel AI-driven solutions to model, optimize, and enhance wireless networks. From cross-layer optimization to energy-efficient designs, this session focuses on the latest research on data-driven network intelligence, context-aware networking, quality of service estimation, and AI-native wireless networks.

Prospective authors are invited to submit original and unpublished work on the following (or closely related) research topics related to this Special Session:

- *AI-Driven Cross-Layer Optimization*
- *Data-Driven AI Models for Digital Twins*
- *Energy and Performance Optimization for IoT Networks (including 3D, UAV and non-terrestrial networks)*
- *Obstacle and Context-Aware Networking*
- *Resource Management and QoS Estimation*
- *AI-Native Wireless Networks*
- *Federated Learning in Wireless Networks*
- *AI-Driven Non-Orthogonal Multiple Access*