

Special Issue

Next-Generation Network Architectures—Trends, Challenges and Innovations

Message from the Guest Editors

This Special Issue aims to gather original research and comprehensive reviews on the design and analysis of intelligent network systems, emphasizing architectural innovations that integrate AI, distributed intelligence, and communication efficiency. We particularly welcome interdisciplinary works that advance the theory and application of next-generation networks, including but not limited to federated learning, multi-agent communication, semantic-aware data exchange, and energy-efficient design. Topics of interest include (but are not limited to) the following:

- Intelligent and autonomous network architectures (6G, IoT, vehicular, satellite);
- AI/ML-driven network optimization and orchestration;
- Federated and distributed learning over constrained networks;
- Edge, fog, and cloud collaborative intelligence systems;
- Software-defined networking and network function virtualization;
- Network security, trust, and privacy in decentralized environments;
- Semantic communication and efficient information routing;
- Robust and adaptive multi-agent systems in networked settings;
- Green networking and sustainable protocol design;
- Network topology design and system-level co-optimization.

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About the Journal

Message from the Editor-in-Chief

Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guestedited by leading experts in selected topics of interest.

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