

## Special Issue

# Recent Advances in Semantic Communications and Networks

### Message from the Guest Editors

The convergence of artificial intelligence and communication systems is fundamentally reshaping wireless networks as we advance toward 6G and beyond. However, while AI technologies offer tremendous potential for semantic communication systems, implementing these advanced solutions in real-world scenarios presents significant challenges. This Special Issue aims to bridge the gap between the semantic intelligence offered by advanced AI technologies and the practical constraints of real-world communication systems. We seek contributions addressing both theoretical foundations and practical implementations that enable semantic-aware communications in diverse deployment scenarios. Research areas may include (but not limited to) the following:

- Bio-inspired approaches for energy-efficient semantic processing;
- Lightweight semantic representation learning for edge devices;
- Energy-efficient semantic coding mechanisms;
- Large language model applications in semantic networks;
- Multi-agent semantic communication frameworks;
- Autonomous systems with semantic awareness;
- Privacy-preserving semantic communication protocols.

We look forward to receiving your contributions.

### Guest Editors

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### Deadline for manuscript submissions

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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 guest-edited by leading experts in selected topics of interest.

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### Editor-in-Chief

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