

IEEE VTM
Call For Papers
Special Issue on
AI for 6G O-RAN Intelligent, Cost-Efficient and Secure Automation

Important Dates

Manuscript Submission by: 1 February 2025

First Round Reviews by: 15 May 2025

Second Round Submissions by: 15 July 2025

Second Round Reviews / Editorial Decision: 15 September 2025

Publication: December 2025

Open Radio Access Networks (O-RAN) are poised to revolutionize the telecommunications industry by decoupling hardware and software, fostering innovation, and promoting competition. As the industry transitions towards 6G networks, O-RAN will play a crucial role in enabling new use cases and services.

Artificial Intelligence (AI) and Machine Learning (ML) offer powerful tools to address the challenges and opportunities presented by 6G networks and O-RAN. By leveraging AI/ML techniques, O-RAN networks can be transformed into more intelligent, efficient, and secure entities.

Prospective authors are invited to submit original, unpublished, high-quality research papers focused on (but not limited to) the following topics of interest:

- **O-RAN Network Automation:** Explore AI/ML-driven automation of O-RAN functions, including network planning, optimization, and self-healing.
- **Intelligent Resource Management:** Develop AI/ML-based solutions for effectively managing O-RAN resources, such as radio spectrum, power, and computing resources.
- **Anomaly Detection and Prediction:** Utilize AI/ML algorithms to detect and predict network anomalies, faults, and security threats.
- **Security and Privacy:** Implement AI/ML-based security measures to protect O-RAN networks from intrusion, anomalies, and privacy breaches.
- **Network Slicing:** Leverage AI/ML for efficient resource allocation and service provisioning through network slicing.
- **Interoperability:** Employ AI/ML to ensure seamless interoperability between different O-RAN vendors and components.
- **Energy Efficiency:** Optimize energy consumption in O-RAN networks using AI/ML techniques.
- **Performance Optimization:** Enhance network performance metrics like latency, throughput, and reliability through AI/ML-driven solutions.
- **Network Virtualization:** Utilize AI/ML for network virtualization and orchestration in O-RAN environments.

- **Generative AI for O-RAN:** Explore the application of generative AI techniques, such as Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs), for tasks like synthetic data generation, network optimization, and anomaly detection.
- **Telecom AI and O-RAN:** Investigate the integration of Telecom AI frameworks and platforms with O-RAN to enable advanced AI-driven network management capabilities.
- **6G Network Applications:** Explore the use of O-RAN and AI/ML to enable new 6G applications, such as immersive AR/VR, tactile internet, and ultra-reliable low-latency communications (URLLC).
- **Running AI Applications on O-RAN Infrastructure:** Investigate the feasibility and benefits of running AI applications that are not related to RAN operations on the O-RAN infrastructure.

All manuscripts should contain state-of-the-art material presented in tutorial style, and must adhere to [IEEE VTM guidelines](#).

Papers presenting original and state-of-the-art research and technical contributions are welcome and will be considered. However, their presentation should be accessible for all readers. Submit PDF versions of complete manuscripts to [ScholarOne Manuscripts™](#) (select Special Issue option).

Guest Editors

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