Special Issue

AI-Driven Network Function Virtualization and Intelligent Cloud-Edge Computing for Future Networks

Message from the Guest Editor

With the rapid advancements in AI and cloud-edge computing, future networks are evolving to support increasingly complex and dynamic applications, such as autonomous systems, immersive extended reality (XR), and ultra-reliable low-latency services. The integration of AI-driven network function virtualization (NFV) and intelligent cloud-edge computing has become crucial for enhancing network efficiency, adaptability, and scalability to meet these emerging demands. The development of efficient and intelligent NFV and cloud-edge computing faces several challenges, including real-time network optimization, dynamic service orchestration, heterogeneous resource management, and security concerns. Addressing these challenges requires advancements in AI-driven optimization models, autonomous decision-making mechanisms, and collaborative computing frameworks across cloud and edge environments. Key technologies such as deep learning-based network function orchestration, reinforcement learning for resource allocation, and AI-powered intent-based networking are expected to revolutionize NFV and cloud-edge architectures.

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