Special Issue on
Next-Generation Wireless Networks (NGWN) for Autonomous Intelligent Communications

CALL FOR PAPERS

Next-generation wireless networks (NGWN) such as 5G and beyond are expected to be extremely complex and dynamic. The emergence of ultra-dense deployment of heterogeneous networks, high data rates, and new applications that require a new wireless radio technology paradigm may pose many critical challenges for network management, operation, planning, and troubleshooting. Simultaneously, generating and consuming wireless data is progressively distributed from people-centric to machine-oriented communications, resulting in future wireless networks operations becoming even more complicated. Therefore, to mitigate the complexity of future wireless network operations, new methodologies of employing distributed computational means with better context perception will become increasingly significant.

Hence, there is a need to observe that how artificial intelligence (AI) techniques such as deep learning and artificial neural networks (ANN) can be investigated dynamically to solve numerous challenges in the Internet of Things (IoT). Machine learning is one of the most promising artificial intelligence (AI) tools, conceived to support smart radio terminals. NGWN must be able to support low-latency communication, provide ultra-reliability, and perceptively manage the Internet of Things (IoT) devices in real-time dynamic environment. Such communication requirements and mobile edge and core intelligence can only be realized by integrating fundamental notions of artificial intelligence (AI) and machine learning across the wireless infrastructure and end-user devices for various applications such as real-time traffic data, sensor data from automatic cars, or Netflix entertainment recommendations. All these applications produce a significant quantity of data that must be assembled and processed in real time.

The aim of the Special Issue is to present the current advances in the growth of AI for NGWN. We welcome research on the use of comprehensive concepts of machine learning and artificial neural networks (ANNs and their potential applications in NGWN. Original research and review articles are welcome.

Potential topics include but are not limited to the following:

- Next Generation Wireless Networks using evolutionary computing and fuzzy systems
- Wireless communications and networking with Unmanned Aerial Vehicles
- Wireless virtual reality
- Mobile edge caching and computing
- Spectrum management and co-existence of multiple radio access technologies
- Artificial intelligence for Internet of Things
- Vehicular networks and mart cities
- Audio/video communication in NGWN
- Big data analytics for NGWN
- Intelligent communication for NGWN
- Distributed computation, in-network processing, and data mining in NGWN
- Case studies or applications of dynamic networks using NGWN
- NDN/SDN edge computing
- Quantum computing
- Communication protocols for NGWN
- Fog/cloud computing in NGWN

Authors can submit their manuscripts through the Manuscript Tracking System at https://review.hindawi.com/submit?specialIssue=021050.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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