

Special Issue on  
**Deep Learning Architectures and  
Applications for Wireless Networks and  
Service Management**

CALL FOR PAPERS

Emerging wireless technologies have the potential to increase network capacity by introducing ultradense networks with ultrahigh data rates. Also, the flexibility provided by heterogeneous wireless network architectures will allow a widespread deployment of bandwidth and mobility hungry applications, users, and services, such as the ones from the Smart Cities and Internet of Things (IoT) realms. As innovative services and applications arise in these future wireless networks scenarios, network management service approaches will need to support scalability and robustness in a more proactive and intelligent fashion.

In recent years, Artificial Intelligence (AI) techniques had impressive performance growth and adoption due to the supporting technologies (e.g., graphics processing units) for training very complex models. Now, state-of-the-art deep neural networks (DNN) can be quickly deployed in devices with limited processing capacity, from mobile devices to elements in the edge of the wireless network infrastructure. Such advances in DNN open the possibility of training and deploying intelligent and robust models with high predictive power as distributed or centralized management services in any part of the wireless network infrastructure. Some foreseen benefits of modeling and deploying DNNs for wireless network service management are efficient resource allocation, accurate traffic classification and steering, robust anomaly detection, better support for autonomic networking, and the like.

This Special Issue aims at publishing high-quality theoretical and applied research contributions in the context of applications and architectures of deep neural networks (a.k.a. deep learning) in wireless networks infrastructure, protocols, and services for intelligent network management. We expect original research articles and review papers on this topic that bring new ideas, latest findings, and results to the research community.

Potential topics include but are not limited to the following:

- ▶ Deep learning architectures and applications for wireless networks and service management
- ▶ Deep learning applications in management of next-generation Wi-Fi networks
- ▶ Intelligent network and service management in mmWave networks (5G NR, 60 GHz)
- ▶ 802.11ad/ay)
- ▶ Deep learning architectures and applications to enable time-critical wireless autonomous systems
- ▶ Predictive models for user and service mobility
- ▶ DNN models for resource management and energy efficiency (LTE/5G RAN and core infrastructure)
- ▶ Performance evaluation of DNN models for wireless network management
- ▶ Deep learning applied to operations and management of LTE networks
- ▶ Deep learning architectures and applications applied to the context of the Internet of Things (IoT) /Wireless IoT Networks

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/wcmc/dlaa/>.

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

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