

Special Issue on **Artificial Intelligence and Edge Computing in Mobile Information Systems**

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Artificial intelligence (AI), edge computing (EC), and the internet of things (IoT) are developing rapidly. The number of IoT devices worldwide is estimated at around 20.4 billion in 2020. These devices are generating more and more data at increasing speed, and information technology (IT) professionals are facing a torrent of IoT data. If all the data generated by the massive number of terminal IoT devices are transmitted to the cloud, the cloud server will face substantial storage and computing pressure, and the data transition will cause long-distance round-trip delay and network congestion. As a result, service quality degrades. Edge computing has been developed to provide intelligent services near the edge of the network or near the data source. Data is no longer needed to be transmitted to the distant cloud server if the tasks can be done on the edge side, which is more suitable for the key needs of industry digitalisation in agile connection, real-time business service, data processing optimisation, application intelligence, even security, and privacy protection.

There is a considerable amount of heterogeneous data in edge terminals. It is necessary to integrate relevant artificial intelligence (AI) techniques into EC such as processing the maximum amount of data in the edge closer to the data source, to improve efficiency, and to relieve the loading pressure of the server platform. Implementing the intelligent task scheduling solutions directly at the edge terminals can effectively reduce the bandwidth requirements. It can provide timely responses, and enable privacy protection for data from the edge terminals. The integration of AI in EC applications can enable autonomous business logic analysis, real-time dynamically adjusting, and self-optimising execution of IoT applications. Intelligent EC systems should optimise processing local data and communicate with the cloud server only when necessary. Thus, the cloud computing platform that integrates the data collected at edges and IoT devices can have better service capability. Considering the different purposes and requirements of IoT applications, there are still challenges to provide intelligent services in increasingly complex systems like AI, cloud, edge, and IoT.

The aim of this Special Issue is to bring together original research articles and review articles talking about relevant recent developments in the field. Submissions focusing on the use of new theories, technologies, and methods are particularly encouraged.

Potential topics include but are not limited to the following:

- ▶ AI-based cloud edge systems with IoT applications for mobile wireless networks
- ▶ Cost-efficient resource management for EC through big data mining for mobile wireless networks
- ▶ Energy-aware loading and intelligent scheduling for cloud EC with IoTs
- ▶ Service performance optimisation in mobile wireless networks
- ▶ Security, privacy, and trust in mobile wireless networks
- ▶ The design of AI-enabled hardware aspects of mobile wireless networks
- ▶ Application of AI on scalability, experimental testbeds, and interoperability
- ▶ Application of AI on edge middleware, edge architectures, and edge solutions for federated learning

Authors can submit their manuscripts through the Manuscript Tracking System at <https://review.hindawi.com/submit?specialIssue=848355>.

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

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