Wireless Communications and Mobile Computing

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Special Issue on

# Artificial Intelligence (AI) and In-Network Caching Driven Technologies for Smart Cities

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Smart cities provide better connections between services and citizens, based on the combination of the internet, mobile networks, Internet of Things (IoT), cloud computing, and sensor networks, which help to realise all-round perception, ubiquitous interconnections, and intelligent management. With the rapid development of smart devices, smart applications, and smart services, a smart city generates huge amounts of data that contributes to learning situations and making correct decisions. This brings about not only opportunities, but also presents many challenges in building a scalable and reliable smart city.

In order to take advantage of the collected data, it becomes necessary to perform more farsighted routing and delivery, while efficiently managing data with the prevailing caching mechanism. Hence, it is indispensable to explore and exploit new technologies to collect, process, analyse, and apply such big data to support routing, delivery, and caching in smart cities, guaranteeing economic and social development. Artificial intelligence (AI) and in-network caching have been successfully applied to various network domains, including failure detection, congestion control, and information centralised networks. AI-based techniques facilitate precise routing, fast delivery, and adaptive management, which conforms to autonomous or self-driving networks. However, rather than simply dropping valuable data, in-network caching mechanisms increase the hit ratio from the perspective of the reuse of resources, and thus save routing and delivery delay, providing a high-quality citizen experience.

This Special Issue will focus on AI and in-network caching driven technologies and their applications for promoting the further development of smart cities, including responding to current challenges facing smart cities. We welcome both original research and review articles.

Potential topics include but are not limited to the following:

- AI-based data analysis in smart cities
- AI-based routing in smart cities
- AI-based data delivery in smart cities
- AI-based network management in smart cities
- AI-based resource allocation/scheduling in smart cities
- Resource allocation/scheduling in smart cities based on in-network caching
- AI-enabled caching network architecture
- In-network caching-enabled AI network architecture
- Future internet architecture for building smart city networks
- Performance improvement of smart cities based on AI or/and in-network caching
- Cache management in smart cities
- AI for healthcare data processing in smart cities
- AI-driven Internet of Medical Things (IoMT) for smart healthcare
- Advanced data transmission, capturing, and fusing for edge and fog technology
- Other technologies for key issues in smart cities

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

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