Wireless Communications and Mobile Computing

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Special Issue on
Artificial Intelligence for Urban Internet of Things 2023

CALL FOR PAPERS

Artificial intelligence (AI) plays a crucial role in urban Internet of Things (IoT) systems. AI aims to leverage computers and algorithms to intelligently process and analyze data from different sources, thus mimicking the problem-solving and decision-making capabilities of the human mind. Existing artificial intelligence methods have shown promising performance in computer vision, natural language processing, reasoning, and speech recognition. Urban IoT is a network of physical objects embedded with electronics, software, sensors, and network connectivity, enabling these objects to support city-scale data collection and processing. With the wide adoption and quick development of Urban IoT, the users, sensors, and networks generate a tremendous amount of data.

Due to the enormous scale, heterogeneity, high dynamic nature, and inherent uncertainty, data from Urban IoT is extremely complicated and difficult to process. Therefore, methods for effectively utilizing AI to power Urban IoT are urgently needed. AI in Urban IoT systems must overcome many challenges, such as the exceptional requirements for connectivity, latency, scalability, accessibility, security, and resilience that these systems need. The seamless integration of AI into Urban IoT systems will therefore create tremendous opportunities for new research and necessitates a more diversified effort to address the associated challenges.

The aim of this Special Issue is to collate articles with a focus on challenging issues in the combination of AI and Urban IoT, including technologies, algorithms, frameworks, architectures, and applications. Both theoretical and experimental contributions containing novel applications with new insights and findings are welcome. We welcome both original research and review articles.

Potential topics include but are not limited to the following:

- AI methods for analyzing uncertain sensor data in Urban IoT systems
- AI problems while analyzing massive amounts of sensor data in Urban IoT systems, including novel clustering and classification methods
- Co-operative and collaborative data processing in Urban IoT systems, such as multiagent systems or in-network processing approaches
- AI methods for multimodal data analytics in Urban IoT systems
- AI methods for managing and improving information security in Urban IoT systems
- AI methods for intention analysis in Urban IoT systems
- Explainable AI methods for Urban IoT systems
- Ubiquitous and pervasive computing in Urban IoT systems
- Distributed computing in edge nodes for Urban IoT systems
- Distributed learning in edge nodes for Urban IoT applications

Authors can submit their manuscripts through the Manuscript Tracking System at https://review.wiley.com/submit?specialIssue=473130.

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

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