Guest Editorial
Introduction to the Special Section on Edge Computing for Internet of Things

THE Internet of Things (IoT) is expected to improve the quality of human lives through billions of Internet-based devices that connect the physical and digital worlds. To satisfy the computation and storage requirements of IoT, cloud computing has served as the most important computing infrastructure. However, with the explosion of the number of devices in IoT and the resulting a large volume of raw data continuously generated by IoT devices, cloud computing has significant challenges to efficiently an efficiently and securely handle the data volme. In particular, cloud computing is limited in terms of network bandwidth, security and privacy protection in IoT. To address these challenges, many researchers have attempted to move data computation and service provisioning from the cloud to the edge, which results in the area of edge computing. Early-stage research has indicated that edge computing could potentially enable IoT applications to meet their latency/delay requirements, improve the scalability and energy efficiency of IoT systems, and facilitate contextual information processing. Nevertheless, a series of challenging problems needs to be addressed in order to fully utilize edge computing for IoT.

The special section on Edge Computing for Internet of Things provides a timely publication venue for the state-of-the-art solutions to these challenging problems. In total, 36 manuscripts were submitted to this special section, and 10 papers were finally accepted for publication, which leads to an acceptance rate of 27.7%. A brief review of these papers is presented as follows.

In "Job Scheduling to Minimize Total Completion Time on Multiple Edge Servers," Fang *et al*. attempt to minimize the total completion time of a set of jobs that are assigned to edge servers. Recently, age-of-information (AoI) has become a popular metric to quantify the freshness of information collected at network edge. In "Minimizing Age of Information under General Models for IoT Data Collection," Li *et al*. develop new theoretical results in terms of fundamental properties and performance bounds and a new near-optimal low-complexity scheduling algorithm to minimize AoI. In "Mobi-IoST: Mobility-aware Cloud-Fog-Edge-IoT Collaborative Framework for Time-Critical Applications," Ghosh *et al*. propose a collaborative framework for time-critical applications that involves cloud, edge and IoT. Ren *et al*., in "Coding-based Large-Scale Task Assignment for Industrial Edge Intelligence," attempt to solve the problem of large-scale task assignment in industrial edge computing. Gu *et al*., in "Privacy on the Edge: Customizable Privacy-Preserving Context Sharing in Hierarchical Edge Computing," present a dynamic customizable privacy-preserving model to obtain the optimized trade-off between customizable privacy protection and data utility in hierarchical edge computing. In "Repairable Fountain Coded Storage System for Multi-tier Mobile Edge Caching Networks," Wang *et al*. devise a framework based on repairable fountain codes (RFCs) with unequal repair locality to achieve efficient data caching in multi-tier heterogeneous mobile edge computing. In "A Privacy Preservation Based scheme for Task Assignment in Internet of Things," Dai *et al*. develop a trustable framework for mobile crowd sensing, which effectively preserves the location privacy of mobile users. Radio Frequency Fingerprinting (RFF) is a non-cryptographic authentication technology, which could identify devices through the waveforms of the RF transient signals. Xie *et al*., in "Convolution based Feature Extraction for Edge Computing Access Authentication," propose a convolutional neural network enhanced RFF for edge computing authentication. Finally, in "A Task-Oriented User Selection Incentive Mechanism in Edge-Aided Mobile Crowdsensing," Xiong *et al*. devise a sensing task-oriented user selection incentive mechanism based on edge computing for edge-aided mobile crowdsensing.

In summary, we believe that edge computing for IoT is a timely and important research topic. This special section aims to provide a prime venue for researchers from both academia and industry to discuss the key problems and present the innovative solutions in the area of edge computing for IoT. We would like to thank the reviewers for their valuable and extensive efforts. We hope that the solutions presented in this special section could significantly benefit researchers and application developers who are interested in this important emerging area.

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