

# CALL FOR PAPERS

## *IEEE Transactions on Network Science and Engineering* Special Issue on Edge computing for Internet of Things

### GUEST EDITORS:

Qiang Ye (Lead), Dalhousie University, Canada. Email: qye@cs.dal.ca

M. Jamal Deen, McMaster University, Canada. Email: jamal@mcmaster.ca

Antonio Puliafito, University of Messina, Italy. Email: apuliafito@unime.it

Lin Zhang, Beihang University, China. Email: zhanglin@buaa.edu.cn

### TOPIC SUMMARY:

The Internet of Things (IoT) are expected to improve the quality of human lives through billions of Internet-based devices. 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 (expected to reach 50 billion by 2020), a large volume of raw data will be continuously generated by IoT devices, consequently making cloud computing inadequate to efficiently and securely handle the data. In particular, cloud computing will be highly limited in terms of network bandwidth and privacy protection in IoT. To solve this problem, 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 and the related fog 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 need to be addressed in order to fully utilize edge computing for IoT. For instance, most of the computation resources in edge computing are heterogeneous mobile devices that are highly energy-hungry, which means that edge computing tends to be unreliable. Moreover, how to efficiently distribute computation/data storage and how to combine edge computing with cloud computing in order to provide scalable services need to be further studied. In addition, how to support services without compromising privacy and security is a challenging problem in edge computing. This special issue 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.

The topics of interest include, but are not limited to:

- Edge/Fog computing architecture for IoT
- Modeling and performance analysis of edge computing for IoT
- Communication and networking technologies in edge computing for IoT
- Mobile computing resource management in edge computing for IoT
- Machine learning and deep learning in edge computing for IoT
- QoS and QoE provisioning in edge computing for IoT
- Trust, security and privacy in edge computing for IoT
- Energy management in edge computing for IoT
- Collaboration of edge computing and cloud computing for IoT

- Experiences in delivering edge/fog-based services
- Open issues and challenges in edge computing for IoT

**IMPORTANT DATES:**

- Manuscripts due: 04/01/2019
- Peer reviews to authors: 07/01/2019
- Revised manuscripts due: 08/01/2019
- Second-round reviews to authors: 10/01/2019
- Final accepted manuscript due: 10/31/2019

**SUBMISSION GUIDELINES:**

Prospective authors are invited to submit their manuscripts electronically after the “open for submissions” date, adhering to the *IEEE Transactions on Network Science and Engineering* guidelines (<http://www.computer.org/portal/web/TNSE/author>). Please submit your papers through the online system (<https://mc.manuscriptcentral.com/TNSE-cs>) and be sure to select the special issue or special section name. *Manuscripts should not be published or currently submitted for publication elsewhere.* Please submit only full papers intended for review, not abstracts, to the ScholarOne portal. If requested, abstracts should be sent by e-mail to the Guest Editors directly.