CALL FOR PAPERS

IEEE Transactions on Network Science and Engineering
Special Issue on Network Science for Internet of Things (IoT)

GUEST EDITORS:
Honggang Wang (Lead), University of Massachusetts Dartmouth, USA. Email: hwang1@umassd.edu
Shui Yu, Deakin University, Melbourne, Australia. Email: shui.yu@deakin.edu.au
Danda B. Rawat, Howard University, USA, Email: Danda.Rawat@howard.edu
Sherali Zeadally, University of Kentucky, USA, Email: szeadally@uky.edu
Yue Gao, Queen Mary University of London, UK, Email: yue.gao@qmul.ac.uk

TOPIC SUMMARY:
Internet of Things (IoT) applications have been growing significantly in recent years and the so-called IoT ecosystem enables seamless connectivity that is enabling many applications such as smart home, smart health, connected vehicle and smart grid and others. The network infrastructure, connectivity and dynamics in the IoT ecosystem are becoming increasingly complex, scalable and heterogeneous, opening up many challenges for network sciences and system engineering including architectural, operational, service and security challenges. In addition, the interconnection and cooperation of things (e.g., connected sensors and devices) rely on the both the network environment, service provided and the physical environments. However, many related topics such as network control, evolutions, efficiency, security, privacy, network properties, network and device heterogeneity have not been well studied in the literature for the IoT ecosystem. There is a strong need to understand the fundamental characteristics such as control structure, functions and behavior of networks both from a theoretical and practical perspective for future IoT. In addition, since IoT applications generate huge amounts of network traffic over networks, network issues such complexity, efficiency, dynamics, interferences and interaction and robustness need to be reviewed on a large scale. We aim to leverage them in order to better understand network performance bound, user demands and experience and capacity of the IoT network infrastructure which will enable the network to seamlessly connect to IoT devices and support the emerging applications of IoT users. In summary, research on network sciences and engineering for inter-disciplinary IoT applications is still in its infancy. For example, more research efforts are needed to examine the service quality of connected health applications from a network science perspective and principle. This special issue will present how recent and future advances in network science and engineering can be leveraged to enable future and emerging IoT applications.

The topics of interest for this special issue include, but are not limited to:

- Random networks and complex network modeling for IoT
- Information networks and social networks for IoT
- IoT Information flow and diffusion
- IoT network resource management and efficiency
- Network theory and dynamics for Cyber Physical System
- Network planning and design for IoT applications
- Network self-healing and self-recovery for IoT
- Network protocol design and control for IoT
- Edge network and computing for IoT
- Network management for IoT
- Network service and quality management for IoT
- Cross media networking
- Network Economics and Evolution for IoT
- Security and Privacy for IoT
- IoT network implementation, testbed and measurement
- IoT network policy and regulations

The papers for rigorous and well-coordinated peer-review process will be collected through the Manuscript Central System for IEEE Transactions on Network Science and Engineering (https://mc.manuscriptcentral.com/tnse-cs).

Important Dates:
- Manuscripts due: 04/01/2018
- Peer reviews to authors: 07/15/2018
- Revised manuscripts due: 09/01/2018
- Second-round reviews to authors: 10/15/2018
- Final accepted manuscript due: 11/30/2018

SUBMISSION GUIDELINES:
Prospective authors are invited to submit their manuscripts electronically, adhering to the IEEE Transactions on Network Science and Engineering guidelines (http://www.computer.org/portal/web/TNSE/author). Note that the page limit is the same as that of regular papers. 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.