

# CALL FOR PAPERS

*IEEE Transactions on Network Science and Engineering*

**Special Issue on Learning-based Modeling, Management and Control for Computer and Communication Networks**

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## **TOPIC SUMMARY:**

Computer and communication networks are becoming larger and more complicated, generating a huge amount of runtime statistics data (such as traffic load, resource usages, etc.) every second. Instead of treating big data in these networks as an unwanted burden, we aim to leverage them as a great opportunity for better understanding user demands and system capabilities such that we can optimize network operations to better serve users and applications. Emerging machine learning models and techniques, such as active learning, Deep Neural Networks (DNNs) and Deep Reinforcement Learning (DRL), have been shown to dramatically improve the state-of-the-art of many applications, including video/image processing, natural language processing, game playing, etc. However, research on learning-based modeling, management and control in computer and communication networks is quite scattered. This special issue aims to exploit how these emerging and powerful techniques (including active learning, Deep Learning (DL), DRL, etc.) can be leveraged to grasp the exciting opportunities provided by pervasive availability of voluminous data to model, manage and control computer and communication networks.

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

- Machine learning models for big data in wired/wireless networks and mobile systems
- Knowledge Centric Networking (KCN), which uses machine learning to extract information and create contents for Content Centric Networking (CCN)
- Learning-based resource management in wired/wireless networks and mobile systems
- Learning-based control in network systems
- Learning-based solution to network planning and design
- Network self-evolution based on learning strategies
- Adaptive network protocol design and control based on learning techniques
- Network management using learning techniques
- Network service and quality management using learning techniques
- Deep learning for multimedia (image, audio, and video) networking

## **IMPORTANT DATES:**

- Manuscripts due: 10/01/2017
- Peer reviews to authors: 01/15/2018
- Revised manuscripts due: 02/28/2018

- Second-round reviews to authors: 04/30/2018
- Final accepted manuscript due: 05/30/2018

**SUBMISSION GUIDELINES:**

Prospective authors are invited to submit their manuscripts electronically, adhering to the *IEEE Transactions on Network Science and Engineering* guidelines

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(<https://mc.manuscriptcentral.com/tNSE-cs>) and be sure to select the special issue or special section name.

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