AI Powered Network Management: Data Driven Approaches under Resource Constraints

In recent years, the explosive development of mobile communications and networking, together with the wave of Internet of Things (IoT), has led to super-complex systems, which are difficult to model and manage. On the other hand, such systems are generating a large amount of data on a daily basis, from both the user side and the network side. How to utilize such data to relieve the dependence on restrictive and sometimes even unrealistic system models is the key towards more efficient and effective future networks, especially when under various resource constraints as in IoT systems. Fortunately, recent advancements in artificial intelligence (AI), empowered with modern machine learning algorithms, have demonstrated remarkable success in a variety of fields, and are stimulating numerous data driven approaches and applications. Combing the availability of big data in complex IoT communication networks and the recent advancements in AI, it now comes the time to renovate how we resolve network management issues to more efficiently and effectively fulfill the dynamic demands of network subscribers, especially in the presence of stringent network resource constraints. With the fuel (IoT data) and the engine (AI), data driven network management will enable us to dynamically and adaptively meet with the spatio-temporal network demands in the most resource-aware and resource-smart manner. We solicit papers that cover a wide range of topics of interest that include, but are not limited to, the following:

- Innovative Data Collection and Analysis for Network Management in IoT and other Resource Constrained Networks
- User Modeling and Profiling for Personalized Network Services
- Privacy-Preserving Data Mining for IoT Network Management
- Advancement in AI with Recourse Constrained Network Management Applications
- Data-Driven Network Resource Allocation Algorithms
- Data-Driven Caching and Edge Computing for Efficient IoT Network Management
- Adaptive Cloud Computing in Data-Driven IoT Network Management
- IoT Specific Data Driven Approaches

Important Dates

Submissions Deadline: **November 1, 2017** Second Reviews Due/Notification: April 15, 2018
First Reviews Due: January 1, 2018 Final Manuscript Due: **May 1, 2018**
Revision Due: March 15, 2018 Publication Date: 2018

Submission

All original manuscripts or revisions to the IEEE IoT Journal must be submitted electronically through IEEE Manuscript Central, http://mc.manuscriptcentral.com/iot. Solicited original submissions must not be currently under consideration for publication in other venues. Author guidelines and submission information can be found at http://iot.ieee.org/journal.

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