Intelligent Network Assisted by Cognitive Computing and Machine Learning

Intelligent network is the use of cognitive computing technologies to meet the various requirements of seamless wide-area coverage, high-capacity hot-spot, low-power massive-connections, low latency, high-reliability, and other scenarios. An intelligent network can be viewed as the existing network integrated with cognitive and cooperative mechanisms to promote performance and achieve intelligence. Under the new service paradigm, there are various technical challenges and problems that need to be addressed in order to extensively improve the user's quality of experience (QoE), such as complicated decision making for routing, dynamic and context-aware network management, resource optimization, and in-depth knowledge discovery in complex environments.

Assisted by artificial intelligence (AI) and machine learning, an intelligent network is expected to greatly enhance user experience and have a huge impact to all aspects of people's lifestyles in terms of work, social interactions, and economy. In particular, network ecosystems could be upgraded with new capabilities, such as the provisioning of personalized and smart network services assisted by AI, optimized communication physical layer design based on machine learning, and adaptive resource management based on cognitive power that can mimic or augment human intelligence.

This Special Issue (SI) will bring together academic and industrial researchers to discuss technical challenges and recent results related to intelligent networks. To meet the demanding requirements needed for user experience, efficiency, and performance in a complex network environment, novel design, configuration, and optimization for communications and networking are in great need.

Submitted papers in this SI are expected to focus on state-of-the-art research in various aspects of intelligent network, especially the use of AI and machine learning for communication and networking. Topics of interest include, but are not limited to, the following areas:

- Innovative architecture, infrastructure, techniques and testbeds for intelligent network
- Machine learning, AI and other innovative approaches for intelligent network

- Context-aware, emotion-aware, and other novel networking services
- Multi-modal information fusion, contextual data management and in-depth knowledge discovery for complex networking environment
- Network tools, testbed and performance evaluation based on AI and machine learning
- Data-driven behavior prediction for cognitive network
- AI-based performance evaluation for Intelligent Network

SUBMISSION GUIDELINES

Manuscripts should conform to the standard format as indicated in the Information for Authors section of the Paper Submission Guidelines.

All manuscripts to be considered for publication must be submitted by the deadline through Manuscript Central. Select the “Special Issue: Intelligent Network Assisted by Cognitive Computing and Machine Learning” topic from the drop-down menu of Topic/Series titles.

IMPORTANT DATES

Manuscript Submission Deadline: September 15, 2018
Initial Decision: November 30, 2018
Revised Manuscript Due: Dececember 31, 2018
Decision Notification: January 31, 2018
Final Manuscript Due: February 15, 2019
Publication Date: May 2019

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