AI for Intelligent Networks

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Intelligent networks are essential in today's Internet of Things (IoT) environment. They can provide services with the required quality of service (QoS). Intelligent networks can promote performance and achieve intelligence. Under the new service paradigm, there are various technical challenges and problems that need to be addressed to improve the user's quality of experience (QoE). In order to enhance the user experience and provide the needed service, an intelligent network will need to rely on artificial intelligence (AI). AI and its categories of machine learning (ML) and deep learning (DL) have evolved and are commonly used to solve complex problems. They are essential in making intelligent networks attractive and applicable to practical problems.

There are extensive research activities on applications of AI in intelligent networks. Issues such as intelligent network resource management, optimization and sharing at the edge, cognitive computing, AI assisting IoT, and AI-assisted network security and applications are just a few important topics that can help mitigate the challenges faced by such architectures.

The objective of this Special Issue is to bring together academic and industrial researchers to discuss technical challenges and recent results related to intelligent networks. This will hopefully meet the requirements needed for user experience, efficiency, and performance in a complex network environment, and optimization for communications and networking. The 12 accepted papers cover topics that range from an intelligent edge computing framework that combines AI and IoT to enabling secure intelligent networks with cloud-assisted privacy-preserving ML. The efforts of the Guest Editors are highly appreciated. I would like to thank them: Min Chen, Honggang Wang, Sanjeev Mehrotra, Victor C. M. Leung, and Iztok Humar. I would also like to thank all the authors who have submitted their research work to this Special Issue as well as the reviewers. This is a very interesting topic and I am sure that you will find many of the articles very useful to your future research.

Your suggestions are always welcome.

Biography

Mohsen Guizani [S'85, M'89, SM'99, F'09] received his B.S. (with distinction) and M.S. degrees in electrical engineering, and M.S. and Ph.D. degrees in computer engineering from Syracuse University, New York. He is currently a professor and the ECE Department chair at the University of Idaho. Previously, he served as the Associate Vice President of Graduate Studies, Qatar University, chair of the Computer Science Department, Western Michigan University, and chair of the Computer Science Department, University of West Florida. He also served in academic positions at the University of Missouri-Kansas City, University of Colorado-Boulder, and Syracuse University. His research interests include wireless communications and mobile computing, computer networks, mobile cloud computing, security, and smart grid. He is currently the Editor-in-Chief of *IEEE Network*, serves on the Editorial Boards of several international technical journals, and is the founder and Editor-in-Chief of the *Wireless Communications and Mobile Computing* journal (2000–2016). He is the author of nine books and more than 500 publications in refereed journals and conferences. He has guest edited a number of Special Issues in IEEE journals and magazines. He also served as a member, Chair, and General Chair of a number of international conferences. He received the teaching award multiple times as well as the best research award three times. He received the Wireless Technical Committee's Recognition Award in 2017. He was the Chair of the IEEE Communications Society Wireless Technical Committee and the Chair of the TAOS Technical Committee. He served as an IEEE Computer Society Distinguished Speaker from 2003 to 2005. He is a Senior Member of ACM.