

Title: The Merging between AI and Communication Network Optimization

Abstract:

AI and communication network happily meet in this era. On one hand, AI could enable various new network optimization and control features, which were not feasible with traditional network control approaches. Many people believe AI will be the core or brain of next generation networks. On the other hand, the future AI systems will become more complex, and inevitably distributed. To boost the performance of such distributed AI systems, the network connection among the scattered intelligent elements must be optimized. Understanding such two-way dynamics between AI and networks will be a key step towards future information systems. In this talk, we will take federating learning and wireless network as an example, to start the journey of uncovering the principles regulating the synergy between AI and network optimization.

Bio:

Shuguang Cui received his Ph.D in Electrical Engineering from Stanford University, California, USA, in 2005. Afterwards, he has been working as assistant, associate, full, Chair Professors in Electrical and Computer Engineering at the Univ. of Arizona, Texas A&M University, and UC Davis, respectively. He is currently the Distinguished Presidential Chair Professor at the Chinese University of Hong Kong (Shenzhen), and the Director of Future Network of Intelligence Institute (FNii). His current research interests focus on the merging between AI and network design. He was selected as the **Thomson Reuters Highly Cited Researcher** and listed in the **Worlds' Most Influential Scientific Minds** by ScienceWatch in 2014. He was the recipient of the **IEEE Signal Processing Society 2012 Best Paper Award**. He has served as the general co-chair and TPC co-chairs for many IEEE conferences. He has served the elected Chair for IEEE ComSoc Wireless Technical Committee (2017~2018), and a member of the Steering Committee for both IEEE Transactions on Big Data and IEEE Transactions on Cognitive Communications and Networking. **He was elected as an IEEE Fellow in 2013 and an IEEE ComSoc Distinguished Lecturer in 2014**. His recent work got honors of IEEE ICC'2020 best paper award, the IEEE Globecom'2020 best paper award, and the IEEE ICIP'2020 best paper finalist.

