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Picture:**Bio:**

Dr. Yang Yang is currently a full professor at ShanghaiTech University, China, serving as the Director of Shanghai Institute of Fog Computing Technology (SHIFT) and Master of Kedao College. He is also an adjunct professor with the Department of Broadband Communication at Peng Cheng Laboratory, China. Before joining ShanghaiTech University, he has held faculty positions at the Chinese University of Hong Kong, Brunel University (UK), University College London (UCL, UK), and SIMIT, CAS (China).

Yang's current research interests include multi-tier computing networks, wireless sensor networks, IoT applications, and advanced testbeds and experiments. He has published more than 300 papers and filed more than 80 technical patents in these research areas. Yang is a Fellow of the IEEE.

Title:

Network AI for Everyone-Centric Customized Services in 6G

Abstract:

Unlike the existing 4G/5G systems that provide standard mobile services by efficiently utilizing the available wireless and network resources, future 6G systems should be able to tailor customized services to meet everyone or every-task's individual requirements. This ultimate goal of providing "everyone-centric services" could be realized by exploiting pervasive AI and IoT resources for timely collecting user data, processing personal requests, and making feasible decisions. In this talk, we first proposes the concept of Service Requirement Zone (SRZ) to characterize every-task's complex performance requirements denoted by multi-dimensional KPIs. Next, the concept of User Satisfaction Ratio (USR) is defined to study the system capability of satisfying a variety of personalized SRZs from a group of arrival tasks. Then, cloud AI, edge AI and network AI architectures are fully evaluated and compared under dynamic task densities, task sizes, computing requirements, and network transmission rates. Extensive simulation results show that network AI can achieve the highest USR in all these application scenarios. While the centralized cloud AI architecture can hardly meet the stringent requirements on delay and energy consumption, hence always offers the lowest USR and is not suitable for any realtime 6G applications.