

The banner features a futuristic cityscape at night with glowing buildings and a network of light connections. Large '6G' logos with signal icons are overlaid on the scene. The background is a gradient of blue and white waves.

6G Intelligent Edge Service Towards 6G

workshop of PAAP 2021

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As the explosive growth of smart devices and the advent of many new applications, traffic volume has been growing exponentially. The traditional centralized network architecture cannot accommodate such user demands due to high communication latency, low coverage, and lagged data transmission. Therefore, mobile edge service is proposed to bring computation and caching resources at the edge of the 6G wireless networks. The combination of wireless networks and edge functionalities endows the 6G wireless networks with powerful data processing and caching capabilities. However, by incorporating communication, computation and caching resources in wireless networks, the allocation and management of communication, computing and caching resources needs to be jointly optimized for improving the quality of service and user experience. Furthermore, the high dynamics in terms of channel conditions, user mobility, and the available computation and caching capabilities make it quite challenging to jointly optimize communication, computing and caching resources while also dealing with time-varying network condition.

Artificial intelligence (AI) is an emerging paradigm in which entities and systems are able to learn and make decision by imitating biological processes. Modern machine learning is a key enabler to deal with the problems with uncertain, time-variant, and complex features of 6G, including channel modeling, network optimization, resource management, routing, protocol design, and application/user behavior analysis. This special issue aims to provide a forum for researchers and practitioners from academia and industry to present their latest research findings on the AI-inspired edge communication, caching, and computing for 6G wireless communication and networking

Potential topics include, but are not limited to the following:

1. AI-based network design and resource allocation for efficient 6G wireless networks
2. AI for computation offloading in 6G wireless networks
3. AI for edge caching in 6G networks
4. Resource management and cross-layer design for AI-based 6G networks
5. AI-inspired secure and intelligent resource management in 6G
6. Efficient architecture and new protocol design for AI-based wireless networks
7. Intelligent data processing, communications, and integration in edge intelligence for 6G
8. Efficient resource management for edge intelligence in 6G
9. Performance analysis and evaluation for intelligent 6G
10. Implementation/Testbed/Deployment for AI-based 6G

Important Dates

Submission Deadline: October 20, 2021 (Final Deadline)

Notification Acceptance: November 10, 2021

Camera-ready Paper Due: November 20, 2021

Workshop Chairs:

- Associate Professor Shu Fu, Chongqing University, China (Shufu@cqu.edu.cn)
- Dr. Yueyue Dai, Nanyang Technological University, Singapore. (Email: yueyue.dai@ntu.edu.sg)

Workshop Chairs' Biography:

Shu Fu

Shu Fu started his Ph.D. studies in Communication and Information System from The University of Electronic Science and Technology of China (Chengdu, P. R. China) in September 2012, focusing on resource allocation in wireless networks and wavelength division multiplexing (WDM) based optical networks, etc. He received his Ph.D. degree in June 2016. At present, he is an associate professor in the School of Microelectronics and Communication Engineering, Chongqing University (Chongqing, P. R. China). His research interests include the next generation of wireless network, integrated networks and artificial intelligence.

Yueyue Dai

Yueyue Dai is a researcher at School of Electrical and Electronic Engineering, Nanyang Technological University. She received the Ph.D. degree from the University of Electronic Science and Technology of China (UESTC), Chengdu, China, in 2019. She was a visiting researcher at the University of Oslo, Norway. Her current research interests include edge intelligence, internet of vehicles and blockchain. She serves/has served as the Guest Editor for IEEE Network and Digital Communications and Networks, PC member for IEEE Symposium on Blockchain, TPC member for IEEE ICC 2022, IEEE GLOBECOM 2021, VTC2020-Spring, etc.