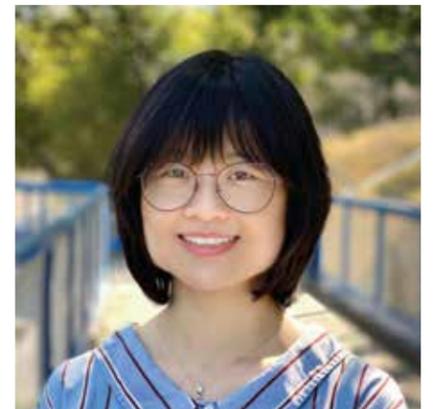


## From Meta-learning to Federated Learning

by Dr. WEI Ying

Assistant Professor  
Department of Computer Science  
City University of Hong Kong



Date: 10 September 2021 (Friday)  
Time: 11:00AM  
Venue: AIFT meeting room  
Units 1101-1102 & 1121-1123,  
Building 19W Science Park West Avenue,  
Hong Kong Science Park, Shatin, Hong Kong

### Zoom Online Conference



URL: <https://tinyurl.com/n9uhe8rk>  
Meeting ID: 912 5351 3684  
Password: 038910  
Join by SIP: 91253513684@zoomcrc.com

### ■ Abstract

Existing machine learning excels at mastering a specific task – the task is reduced to a function by experts and a considerable amount of annotated data for the task is collected to fit the function. In stark contrast, humans are often able to learn a continual stream of various tasks with each requiring minimal supervision. Such versatility is credited to the capabilities of humans to transfer knowledge across tasks. In this talk, I first explore novel meta-learning approaches which open up opportunities for building versatile machines across a sequence of diverse tasks. Beyond that, I will introduce the bottlenecks caused by the assumption of i.i.d. decentralized data in existing federated learning algorithms, when deploying federated learning in real-world applications. Finally, I show how meta-learning approaches offer valuable insights into improving the in-the-wild federated learning performance, under heterogeneous clients and non-i.i.d decentralized data.

### ■ Biography

Ying Wei is an Assistant Professor in the Department of Computer Science, City University of Hong Kong since Feb 2021. Prior to that, she was a Senior Researcher at the Machine Learning Center of Tencent AI Lab from November 2017 to January 2021. She works on machine learning, and is especially interested in solving challenges in transfer and meta learning by pushing the boundaries of both theories and applications. She received her Ph.D. degree from Hong Kong University of Science and Technology in 2017 with the support of Hong Kong PhD Fellowship. Before this, she completed her Bachelor degree from Huazhong University of Science and Technology in 2012, with first class honor. She was awarded the best paper finalist of SIGKDD 2014. She has been invited as a senior PC member for AAAI, and a PC member for many other top-tier conferences, such as ICML, NeurIPS, ICLR, and etc.

### ■ About Us

Laboratory for AI-Powered Financial Technologies Limited (AIFT) is a Hong Kong registered limited company. It was co-founded by the City University of Hong Kong and Columbia University in the United States. AIFT is committed to leading the future technological development of financial services in the Asia-Pacific region. This strategic positioning brings together the entrepreneurial spirit of the two world financial centers of New York and Hong Kong, as well as two leading international academic institutions.

Join us now!  
<https://hkaift.com/>

