

*Holcombe Department of Electrical and Computer Engineering
Seminar Series*

**Optimizing Distributed Machine Learning with Reinforcement
Learning**

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Abstract

In the era of Internet of Things, mobile computing and Big Data, millions of sensors and mobile devices are constantly generating massive volumes of data. To utilize the vast amount of data without violating data privacy, Federated Learning has emerged as a new paradigm of distributed machine learning that orchestrates model training across mobile devices. In this talk, I will first introduce the current challenges in distributed machine learning, and then present my recent work on statistical heterogeneity in federated learning, and distributed machine learning on a serverless architecture. Specifically, I will talk about applying reinforcement learning to optimize distributed machine learning by learning the best choice for task scheduling and resource provisioning.

Biography of Speaker

Hao Wang is a 5th year Ph.D. candidate at the University of Toronto under the supervision of Professor Baochun Li. Hao received both of his B.E. degree in Information Security and M.E. degree in Software Engineering from Shanghai Jiao Tong University in 2012 and 2015, respectively. His research interests include large-scale data analytics, distributed machine learning, and datacenter networking. He has published 16 papers (including eight first-author papers) in prestigious networking and system conferences and journals, such as INFOCOM, SoCC, TPDS, and ToN. For more information about Hao, please visit <https://www.haow.ca/>.