

Speaker: Dr. Yuandong Tian, Facebook AI Research

Date & Time: Oct. 14, 3:30 PM - 4:45 PM CT

Title:

Open the black-box of self-supervised learning

Abstract:

Recently, self-supervised learning (SSL) emerged to be a powerful representation learning technique useful in multiple domains such as computer vision, NLP and reinforcement learning, showing strong empirical performance in downstream tasks. While empirical results are abundant with various loss functions and data augmentation designs, it is not clear how the learning is performed under the hood. In this talk, we will cover our recent work that opens the black box of self-supervised learning, and answer many puzzles, such as why non-contrastive SSL doesn't collapse, why there is dimensional collapsing in the training, what kind of feature it learns, etc. Based on our study, we also propose multiple improvements of existing techniques which show strong performance in common benchmarks.

Biography:

Yuandong Tian is a Research Scientist and Manager in Facebook AI Research, working on deep reinforcement learning, representation learning and optimization. He is the recipient of 2021 ICML Outstanding Paper Honorable Mentions and 2013 ICCV Marr Prize Honorable Mentions. He is the lead scientist and engineer for ELF OpenGo project. Prior to that, he worked in Google Self-driving Car team in 2013-2014 and received a Ph.D. in Robotics Institute, Carnegie Mellon University in 2013.