School of Data Science
香港城市大學
City University of Hong Kong

Hong Kong Institute for Data Science
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ONLINE SEMINAR

The Interplay between Learning and Control in Zeroth-order Methods

Date: 26 January 2022 (Wednesday)

Time: 10:00am - 11:00am

Seminar link: https://cityu.zoom.us/j/98985505120

ABSTRACT

The recent explosion of data from our physical world has stimulated active research in learning, optimization, and control. Though learning and control have their own evolutionary paths, they have interplayed with each other in the past and now. In this talk, we will discuss the synergy between learning and control centering around zeroth-order optimization methods. Firstly, we will talk about how the learning method, zeroth-order optimization, could be used in model-free optimal control in (multiagent) dynamical systems. We will also discuss the optimization landscape of the optimal control for partially observable systems, which is crucial for the success of such learning methods. Then, we will shift our focus to study how control tools such as high and low pass filters could reduce the variance of zeroth-order learning method and speed up its learning speed.

Joint work with Yujie Tang, Yingying Li, Xin Chen, and Yang Zheng.

Prof Na LI

GUEST SPEAKER'S PROFILE

Na Li is a Gordon McKay professor in Electrical Engineering and Applied Mathematics at Harvard University. She received her B.S. degree in Mathematics from Zhejiang University in 2007 and Ph.D. degree in Control and Dynamical systems from California Institute of Technology in 2013. She was a postdoctoral associate at Massachusetts Institute of Technology 2013-2014. Her research lies in the control, learning, and optimization of networked systems, including theory development, algorithm design, and applications to real-world cyber-physical societal systems. She received NSF career award (2016), AFSOR Young Investigator Award (2017), ONR Young Investigator Award (2019), Donald P. Eckman Award (2019), McDonald Mentoring Award (2020), along with other awards.

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All are welcome