

Learning-based Control in the Era of AI and Autonomous Vehicles

Date: 28 April 2021 (Wednesday)

Time: 10:00am - 11:00am

Seminar link: <https://cityu.zoom.us/j/91504276324>



ABSTRACT

This talk presents a new design paradigm, called “learning-based control”, that is fundamentally different from traditional model-based control and model-free machine learning. Learning-based control is aimed at learning real-time optimal controllers directly from input-output data, for stability and robustness of dynamical systems in uncertain environments. Novel tools and methods for data-driven control are proposed as an entanglement of techniques from reinforcement learning and control theory. The effectiveness of learning-based control design is demonstrated via its applications to network systems such as connected and autonomous vehicles and neural science problems such as computational principles of human movement.



Prof Zhong Ping JIANG GUEST SPEAKER'S PROFILE

Prof Zhong Ping JIANG received the M.Sc. degree in statistics from the University of Paris XI, France, in 1989, and the Ph.D. degree in automatic control and mathematics from the Ecole des Mines de Paris (now, called ParisTech-Mines), France, in 1993, under the direction of Prof. Laurent Praly.

Currently, he is a Professor of Electrical and Computer Engineering at the Tandon School of Engineering, New York University. His main research interests include stability theory, robust/adaptive/distributed nonlinear control, robust adaptive dynamic programming, reinforcement learning and their applications to information, mechanical and biological systems. In these fields, he has written six books and is author/co-author of over 500 peer-reviewed journal and conference papers.

Prof. Jiang is a recipient of the prestigious Queen Elizabeth II Fellowship Award from the Australian Research Council, CAREER Award from the U.S. National Science Foundation, JSPS Invitation Fellowship from the Japan Society for the Promotion of Science, Distinguished Overseas Chinese Scholar Award from the NSF of China, and several best paper awards. He has served as Deputy Editor-in-Chief, Senior Editor and Associate Editor for numerous journals. Prof. Jiang is a Fellow of the IEEE, a Fellow of the IFAC, a Fellow of the CAA and is among the Clarivate Analytics Highly Cited Researchers.

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All are welcome