



Department of Mathematics
The Chinese University of Hong Kong

For Favour of Posting

數學系
香港中文大學

Phone: (852) 3943 7988-9 • Fax: (852) 2603 5154 • Email: dept@math.cuhk.edu.hk
Rm. 220, Lady Shaw Building, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong

Applied Math and Numerical Analysis Seminar

Discretization-Invariant Operator Learning: Algorithms and Theory

by

Professor Haizhao YANG
University of Maryland

Abstract :

Learning operators between infinitely dimensional spaces is an important learning task arising in wide applications in machine learning, data science, mathematical modeling and simulations, etc. This talk introduces a new discretization-invariant operator learning approach based on data-driven kernels for sparsity via deep learning. Compared to existing methods, our approach achieves attractive accuracy in solving forward and inverse problems, prediction problems, and signal processing problems with zero-shot generalization, i.e., networks trained with a fixed data structure can be applied to heterogeneous data structures without expensive re-training. Under mild conditions, quantitative generalization error will be provided to understand discretization-invariant operator learning in the sense of non-parametric estimation.

Date : April 26, 2023 (Wednesday)
Time : 10:00am – 11:00am (Hong Kong SAR)
Zoom link: <https://cuhk.zoom.us/j/9792985952>
Meeting ID: 9792985952
Passcode: 202266

All are Welcome