



香港中文大學統計學系

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THE CHINESE UNIVERSITY OF HONG KONG

SEMINAR

DEPARTMENT OF STATISTICS

THE CHINESE UNIVERSITY OF HONG KONG

Statistical Deep Learning: Mitigating the Curse of Dimensionality

INVITED SPEAKER

Prof. Jian Huang

Department of Applied Mathematics,
The Hong Kong Polytechnic University

TIME

November 08, 2022 (Tuesday) · 2:30 pm - 3:30 pm

VENUE

Lee Shau Kee Building (LSK) LT1, CUHK

ABSTRACT

Deep learning has achieved remarkable success in a wide range of applications and has been applied to analyzing high-dimensional complex data in many fields of scientific research. Therefore, it would be interesting to understand why deep learning has been so successful and what its main advantages are over the traditional nonparametric methods developed over the decades, if any. In this talk, we try to explain some advantages of deep learning by considering the approximation power of deep neural networks and generalization errors of deep learning methods. Using nonparametric regression and conditional generative learning as examples, we show that deep learning can mitigate the curse of dimensionality under some realistic assumptions on data distribution.

