THE UNIVERSITY



OF HONG KONG

Institute of Mathematical Research Department of Mathematics

Probability Seminar

Spectrum of the Neural Tangent Kernel in a quadratic scaling

Prof. Lucas Benigni

Université de Montréal

Abstract

Despite their surplus of parameters, modern deep learning models often generalize well, a phenomenon exemplified by the "double descent curve." While this behavior is theoretically grasped for problems such as ridge regression under linear scaling of dimensions, intriguing phenomenon emerge under quadratic scaling, where sample size equals parameter count. In this presentation, we study the eigenvalues of the Neural Tangent Kernel, a matrix model pertinent to wide neural networks trained via gradient descent, within this quadratic regime.

 Date:
 April 17, 2025 (Thursday)

 Time:
 9:00 – 10:00 am

 Venue:
 ZOOM: https://hku.zoom.us/j/

 Meeting ID:
 998 3939 9920

 Password:
 352056

All are welcome