THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON DATA SCIENCE AND APPLIED MATHEMATICS

Optimal Transport: Theory and Applications

By

Dr. Nian SI
University of Chicago

Abstract

Optimal transport has gained increasing attention in recent years due to the modeling power and computational tractability. In this talk, I will first study the duality of optimal transport for discrete probability measures and extend to continuous probability measures. Then, I will talk about the optimization to solve optimal transport problems via the Sinkhorn methods. I will also study the statistical properties of optimal transport: the curse of dimensionality. I will present two ideas to beat the curse of dimensionality: projection and smoothing. Finally, I will discuss two applications: Wasserstein GANs and distributionally robust optimization.

Biography

Nian Si recently joined the University of Chicago, Booth School of Business as a postdoctoral principal researcher and He will join HKUST IEDA as an assistant professor in 2024. He finished PhD in Operations Research in the Department of Management Science and Engineering (MS&E) at Stanford University. He received a B.A. degree in Economics and a B.S. degree in Mathematics from Peking University in 2017. His research lies at the interface of applied probability, simulation, and machine learning and he is also interested in real-world problems arising from online platforms.

Date : 18 April 2023 (Tuesday)
Time : 10:30am
Zoom Meeting : https://hkust.zoom.us/j/5616960008 (Passcode: hkust)

All are Welcome!