School of Data Science
香港城市大學
City University of Hong Kong

Neyman-Pearson and Equal Opportunity: When Efficiency Meets Fairness in Classification

Date: 6 March 2023 (Monday)

Time: 9:00am - 10:00am

Seminar link: https://cityu.zoom.us/j/95500650725

ABSTRACT

Organizations often rely on statistical algorithms to make socially and economically impactful decisions. We must address the fairness issues in these important automated decisions. On the other hand, economic efficiency remains instrumental in organizations' survival and success. Therefore, a proper dual focus on fairness and efficiency is essential in promoting fairness in real-world data science solutions. Among the first efforts towards this dual focus, we incorporate the equal opportunity (EO) constraint into the Neyman-Pearson (NP) classification paradigm. Under this new NP-EO framework, we (a) derive the oracle classifier, (b) propose finite-sample based classifiers that satisfy population-level fairness and efficiency constraints with high probability, and (c) demonstrate statistical and social effectiveness of our algorithms on simulated and real datasets.

Mr Shunan YAO

GUEST SPEAKER'S PROFILE

Mr Shunan YAO is a Ph.D. candidate in applied mathematics, with specialization in statistics, at University of Southern California, Department of Mathematics. He's about to graduate in summer 2023. His research interest is in asymmetric classification, robust statistics, Bayesian statistics and algorithmic fairness.

All are welcome

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