Statistics Seminar

Department of Mathematics and Statistics

DATE:	Thursday, September 21, 2023
TIME:	1:15pm – 2:15pm
LOCATION:	WH 100E
SPEAKER:	Xinhai Zhang, Binghamton University
TITLE:	Proximal Learning for Individualized Treatment Regimes Under Unmeasured Confounding

Abstract

Data-driven individualized decision making has recently received increasing research interest. However, most existing methods rely on the assumption of no unmeasured confounding, which cannot be ensured in practice especially in observational studies. Motivated by the recently proposed proximal causal inference, there has been some development on estimating optimal individualized treatment regimes (ITRs) in the presence of unmeasured confounding. Explicitly, in terms of two types of proxy variables, we are able to establish several identification results for different classes of ITRs respectively, exhibiting the trade-off between the risk of making untestable assumptions and the potential improvement of the value function in decision making. Based on these identification results, classification-based approaches can be applied to find a variety of restricted in-class optimal ITRs.