THE HONG KONG
POLYTECHNIC UNIVERSITY
香港理工大學

DEPARTMENT OF APPLIED MATHEMATICS
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The Hong Kong Polytechnic University
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Seminar

Covariate-Balancing Weights for Causal Generalization

By

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Abstract

Weighting, including inverse weighting by propensity score, is a very common strategy to account for confounding in causal inference. To construct robust and stable weights, covariate-balancing constraints are incorporated into an optimization framework in many recent works. We consider extension of such framework to construct weights for causal generalization. We first consider average treatment effect (ATE) generalization to a target population when individual-level data from a source sample and summary-level covariates data from a target sample are available. In particular, weights of the treated and control groups within the source sample are calibrated by the summary-level information of the target sample. We then consider individualized-treatment-rule (ITR) generalization when individual-level covariates are available from both populations, but treatment and outcome data are only available from a source sample. Our weight construction method seeks covariate balance over a non-parametric function class characterized by a reproducing kernel Hilbert space. This talk will start with a review for the idea of covariate-balancing weights and end with selected numerical results and a discussion of possible future work including high dimensional constraints.

Biography

Date: 5 July 2023 (Wednesday)
Time: 11:00-12:00 (Hong Kong Standard Time GMT +8)
Venue: HJ302
Speaker: Prof. Menggang Yu, University of Wisconsin-Madison
Host: Prof. Xingqiu Zhao, The Hong Kong Polytechnic University

* * * ALL ARE WELCOME * * *