

ACMS Statistics Seminar

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101A Crowley Hall
3:30– 4:30 PM



Potential Outcome Model Transfer via Mean Effect Equivalence of Lurking Variables

Potential outcome models constitute an important component in causal inference for general types of physical and engineering systems under the Rubin causal model. However, specified models have a limited scope of application across the vast spectrum of environments characterized by different settings of lurking variables. We develop a new effect equivalence framework and Bayesian method that enables potential outcome model transfer across different settings of lurking variables. Model transfer is performed via inference on the equivalent effects of lurking variables in terms of an observed factor whose effect has been modeled under a previously studied environment. Case studies on an additive manufacturing system illustrate the ability of our framework to broaden both the scope of potential outcome models, and the comprehensive understanding of physical and engineering systems.

The Department of Applied and Computational
Mathematics and Statistics

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