Università Commerciale Luigi Bocconi

Department of Decision Sciences

Statistics Seminars

Bayesian sensitivity analysis for a missing outcomes model

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12:00 pm Room AS02, - 1 floor, Via Roentgen 1 Milano

Abstract

(Joint work with Bart Eggen and Aad van der Vaart) When outcome data is missing, even in randomized controlled trials, drawing causal conclusions is not straightforward. Solutions usually rest on unverifiable assumptions, thereby creating a new problem. Sensitivity analysis allows us to assess the robustness of study conclusions to these assumptions. We study a model where outcomes are missing due to participants dropping out post-intervention and adopt a Bayesian approach to incorporate prior beliefs on selection bias parameters. We provide theoretical guarantees for the eventual estimate of the mean outcome. We show two Bernstein-von Mises theorems for different parametrizations of the model. The results are obtained using Dirichlet process priors on the distribution of the outcome and on the distribution of the outcome conditional on the subject being treated.

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