Causal Inference in Observational Studies with Confounders Missing Not at Random

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Abstract: It is important to draw causal inference from unconfounded observational studies, which, however, becomes challenging if the confounders have missing values. Generally, causal effects are not identifiable if the confounders are missing not at random. We propose a novel framework to nonparametrically identify causal effects with confounders subject to outcome-independent missingness, that is, the missing data mechanism is independent of the outcome, given the treatment and possibly missing confounders. We then propose a nonparametric two-stage least squares estimation and a parametric estimation for causal effects.

Shu Yang is an assistant professor at North Carolina State University. She received her Ph.D. with a major in applied mathematics and comajor in statistics from Iowa State University, and postdoctoral training at Harvard TH Chan School of Public Health. Her primary research interest is causal inference, particularly with applications to comparative effectiveness research in health studies. She also works extensively on methods for missing data and survey sampling.

Please join us for refreshments in MMSCI 179 at 3:00.