

James M. Robins, Harvard University

Title: Assumption Free Inference for Causal Effects Possible when the Propensity Score and Outcome Regression are Estimated with Black Box Machine Learning Algorithms: Some Recent Ideas.

Abstract: Machine learning programs with unknown or poorly understood statistical properties are now commonly used for Propensity Score and Outcome Regression estimation when estimating the average treatment effect or weighted average treatment effects given selection on observables . Doubly Robust Estimators combined with sampling splitting are the state of the art recommendations to obtain valid confidence intervals. I describe several model-free approaches to evaluating the coverage of such intervals.