

Accessible Causal Inference

Abstract

Many of the most pressing questions in the social and medical sciences are causal questions. Randomized studies are presented as “the gold standard” of causal inference, however, randomization alone does not help us understand who benefits the most from the treatment or intervention in question. Moreover, in many applied contexts, it is impossible to run randomized studies for crucial causal questions. Causal inference methods that leverage flexible non-parametric machine learning models have clear advantages for identifying what works for whom and estimating causal effects for observational studies where the treatment or intervention is not randomly assigned. While the advantages of these approaches have been demonstrated, they carry a hidden assumption that they are implemented correctly by practitioners. This hidden assumption is often overlooked by methodologists and little is known about how machine learning based approaches to causal inference are used by applied practitioners. Professor Perrett will provide an overview of causal inference methods for randomized and observational studies, describe the benefits of flexible non-parametric methods offered by machine learning algorithms and present a new software to aid the implementation of these approaches. He will present new data from a recently conducted randomized experiment that highlights the importance of making causal inference methods scaffolded and accessible.