

# Real world data, machine learning and causal inference

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**Abstract:** There has recently been an increasing interest in applying statistical and machine learning algorithms to real-world data (RWD) for causality assessment. One of the major challenges in analyzing RWD is confounding bias that can lead to spurious association between an exposure and an outcome. Although there are several different approaches (such as propensity score matching and stratification) to adjusting for confounding bias in causal inference, this presentation will focus on structural causal model (SCM) based machine learning methodologies including target learning and reinforcement learning and application of these approaches to RWD for causal inference.