Summary

This paper talks about using a propensity score to estimate causal effects in observational data. They say that by matching treatment and control samples on the propensity score, we can obtain two groups that have similar covariate distributions. This allows us to get more unbiased estimates of causal effects in the absence of randomization.

My reaction

Matching on propensity scores seems like an incredibly useful tool for observational data and causal inference. I also appreciated how clear they stated their formulas, making their text more understandable.

Questions

I had trouble understanding a few technical details in this paper. I think the biggest one is in understanding strongly ignorable treatment assignments. From what I understand it is saying that after controlling covariates, knowing whether a subject received treatment or not does not provide additional information about their potential outcomes. But don’t we hypothesize that giving treatments do affect the outcome, or there might be prior work showing that the treatment does have an effect. So, I don’t see how this is a reasonable assumption.

What kinds of things might break the strongly ignorable treatment assignment assumption, besides lacking a potential confounding variables not in the dataset?