Machine Learning for econometrics

Causal perspective

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January 10, 2025

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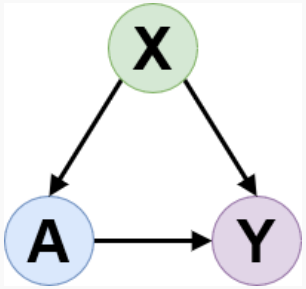
Introduction

Causal inference: subfield of statistics dealing with “why questions”.

At the center of epidemiology, econometrics, social sciences. Now, bridging with ML.



This slide changes!

You can always see this.

This slide changes!

You can always see this. But this appears later!

Wake up!

Asking a sound causal question: PICO framework

Identify the target trial

What would be the ideal **randomized experiment** to answer the question?

Identify the target trial

What would be the ideal **randomized experiment** to answer the question?

(Hernán and Robins, 2016)

PICO framework

- Population : Who are we interested in?
- Intervention : What treatment/intervention do we study?
- Comparison : What are we comparing it to?
- Outcome : What are we interested in?

Causal graphs

Causal graphs

Potential outcomes

Related concepts

Structural equations.

Hello world

Resources

- https://web.stanford.edu/~swager/stats361.pdf
- https://www.mixtapesessions.io/
- https://alejandroschuler.github.io/mci/

Bibliography

Hernán, M. A. and Robins, J. M. (2016) "Using big data to emulate a target trial when a randomized trial is not available," *American journal of epidemiology*, 183(8), pp. 758–764