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Exercise

Causal Interferences

Exercises

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1. What is the difference between Correlation and Causation?
2. Read data creditworthiness.csv
3. What is the difference between Causality vs. Prediction?
4. Use part of the data like in the lecture
5. Define the treatments
6. *Plot the _CC_LIMIT* and *risk_score* both variables against each other for the different treatments before using the causal learner method

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7. Use as Confounders

'_spend','_tpm','_ppm','_RETAIL','_URBAN','_RURAL','_PREMIUM'

8. Define output, Treatment and Effect modifier

9. create and train a causal model that includes both the *_TREATMENT* feature and the effect modifier *_CC_LIMIT,* the output and the confounders

10. To understand the effect, define estimand and estimate_

11. Print coefficients and intercepts

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12. Set additional costs to the 3 treatments:

- Setting up a payment plan requires administrative and legal costs of about $100 per contract,
- lowering the credit limit -> estimated at $30 per average payments per month (_ppm) over the lifetime of the customer.

13. Plot the *_CC_LIMIT* and *risk_score* both variables against each other for the recommended treatments

Introduce a Threshold line for reducing the bank profit (_LTV)

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14. Plot the treatment distribution for the unprivileged and privileged groups
15. Use AGE_GROUP as confounder
16. Test robustness using method
17. Compare the results with those from the lecture.