Computational Data Analytics
for Economists

Course Organisation

Helge Liebert Anthony Strittmatter

Course Outline

- Predictions vs. Causal Inference
- Machine Learning for Prediction
  - Regularized Regression Methods
  - Non-parametric Machine Learning Methods
- Web Scraping
- Text Analysis
- Causal Machine Learning
  - Double Selection Models
  - Modified Outcome Methods
  - Modified Covariate Methods
  - Causal Forests
- Optimal Policy Learning

Schedule

Date	Time	Room	Teaacher
Monday 21.01.	10.15-14.00	S14 HG.32	Anthony Strittmatter
Monday 21.01.	16.00-17.30	S18 HG.37	Anthony Strittmatter
Tuesday 22.01.	10.15-14.00	S18 HG.37	Helge Liebert
Wednesday 23.01.	10.15-14.00	S18 HG.37	Helge Liebert
Tuesday 29.01.	10.15-14.00	S14 HG.32	Anthony Strittmatter
Wednesday 30.01.	10.15-11.45	S14 HG.32	Anthony Strittmatter
Wednesday 30.01.	12.30-14.00	S18 HG.37	Anthony Strittmatter
Friday 01.02.	10.15-11.45	S14 HG.32	Anthony Strittmatter
Friday 01.02.	12.30-14.00	S18 HG.37	Anthony Strittmatter

Prediction Competition

- We make a prediction competition during the course
- The data will be provided during the class
- All students can participate in the competition, no matter if they take the course for credits or not
- It is possible to participate in groups
- The groups have to submit their predictions until Monday January 28 at noon.
- The winning group will be announced and awarded during the class

Home Assignments

Students who want to be graded for the course have to submit three home assignments:

1. Prediction Competition (40%)
   - Participation is compulsory
   - Submit also the code and not only the prediction
   - Submit a short letter explaining your contribution to the project group
2. Web Scraping Assignment (20%)
   - Submit only the code
   - Submit a short letter explaining your contribution to the project group
   - Deadline for submission is Monday January 28
3. Research Proposal (40%)
   - Write a research proposal using the methods learned during the course (individual assignment, max. 10 pages)
   - Deadline for submission is Thursday February 14