Econ 712: Topics in Econometrics

University of Pennsylvania, Fall 2021

Instructor: Xu Cheng

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- Lecture: Tuesday/Thursday 10:15-10:45AM
- Office Hours: by appointment

Pre-requisites:

- Econ 705

Course Description:

The course covers two topics: (i) robust inference in non-standard problems and (ii) machine learning methods for estimation and causal inference. For the first topic, we discuss some recent development in partially identified models with moment inequalities, robust inference in weakly identified models, and some generic results for non-standard models with discontinuous asymptotic distributions. For the second topic, we discuss various machine learning methods and their applications to econometric problems. We will cover predictive modeling, model selection, and causal inference with machine learning methods.

The course takes the form of a combination of lectures and student presentations. The lectures introduce the topics, the main problems and ideas, and some technical results. The students' presentations complement the lectures by discussing empirical applications and some introduction of related methods.

Requirements

1. Assigned presentation from week 1 to week 6. Every week we will have one or two students each give a 15-30 minutes presentation based on my assigned papers. These papers are empirical applications of the previously discussed methods, empirical section of some key references, or related methods.
2. Presentation in week 7.
   - Students can choose any topic related to the course upon approval. I am also happy to provide some ideas on potential topics.
   - The presentation should cover at least 3 related papers on the chosen topic. You don't have to give them equal focus. It is essential to discuss the relationship between these papers.
   - Collaboration between 2 people is encouraged.