Econometrics of High-Dimensional Models

CRN: 13928
Course Number: 557
Department (unused): ECON
Description:
This class provides an introduction to econometrics of high-dimensional models. It covers the following topics: (1) relevant results in probability theory (concentration and maximal inequalities); (2) estimation of linear high-dimensional models using Lasso, Dantzig selector, and related methods; (3) estimation of generalized linear high-dimensional models (e.g., quantile and logit regressions) using 1-penalized M-estimators; (4) basics of machine learning (regression trees, random forests, neural networks); (5) semi-parametric inference in high-dimensional models via double machine learning; (6) related topics in econometrics such as grouped fixed effect estimators in panel data and many moment inequalities. Although the class is primarily based on research papers, as a general reference, a highly recommended textbook is Wainwright, *High-Dimensional Statistics* (2019).

Instructor Name (manual entry): Denis Chetverikov
Instructor(s): Denis Chetverikov
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