gcep

Georgetown Center for Econometric Practice

A GCEP Masterclass

Machine Learning for Treatment Effects and Structural Equation Models

Victor Chernozhukov, MIT

September 26-27, 2016

This Masterclass will provide a practical introduction to modern high-dimensional function fitting methods — a.k.a. machine learning (ML) methods — for efficient estimation and inference on treatment effects and structural parameters in empirical economic models. Participants will use R to immediately internalize and use the techniques in their own academic and industry work. All lectures, except the introductory one, will be accompanied by R-code that can be used to reproduce the empirical examples. Thus, there will be no gap between theory and practice.

Location

Georgetown University School of Continuing Studies, 640 Massachusetts Ave NW, Washington DC 20001
Room: C103A/B

Program

Day One: Monday, September 26, 2016

10:00 – 10:30am	*Registration and Breakfast*
10:30 – 12:00pm	**Session 1:** Causal Inference in Approximately Sparse Linear Structural Equations ` Models.
12:00 – 1:00pm	*Lunch*
1:00 – 2:30pm	**Session 2:** Understanding the Inference Strategy via Partialling Out and Adaptivity.
2:30 – 3:00pm	*Break*
3:00 – 4:30pm	**Session 3:** ML Methods for Prediction = Reduced Form Estimation. Evaluation of ML Methods using Test Samples.

Day Two: Tuesday, September 27, 2016

9:00 – 9:30am	*Breakfast and Coffee*
9:30 – 11:00am	**Session 4:** ML Methods for Prediction = Reduced Form Estimation. Evaluation of ML Methods using Test Samples. (Continued)
11:00 – 11:30am	*Break*
11:30 – 1:00pm	**Session 5:** ML Methods for Causal Parameters -- “Double” Machine Learning for Causal Parameters in Treatment Effect Models and other Econometric Models.
1:00 – 2:00pm	*Lunch*
2:00 – 3:30pm	**Session 6:** Scalability: Working with Large Data. MapReduce, Hadoop and all that.