ECO 7426 – Econometric Methods 1
Syllabus
Fall 2017

Instructor: Dr. Ye Luo

1. Course Summary:

This course is designed to cover modern non-linear econometrics. The course is for 2nd year Ph.D. students from the Economics department. Graduate students from other departments are also welcome to join this class.

In this class, the goal is to mix modern machine learning theory with empirical applications in econometrics. It will greatly help the Ph.D. level students in terms of writing their empirical papers and doing future research.

2. Course Organization

The course would contain one final exam and 4 long problem sets. 50% of the score will be assigned to the final exam and the rest 50% will be assigned to problem sets. Problem sets will cover both empirical and theoretical problems. The final exam will be theoretical.

3. Materials to be covered

(a) Generalized Method of Moments and Related Models

(b) Empirical Process and Model Selection

(c) Modern Variable Selection Mechanisms: LASSO and Boosting

(d) Semi-Parametric Methods: Sieve

(e) Traditional Non-Parametric Methods: Kernel Density, Local Polynomials, etc.

(f) Modern Non-Parametric Methods: Deep Learning

(g) Unmonitored Learning and Feature Construction