# ECON 613: Applied Econometrics

## Introduction

# Objectives

- Present a set of models to understand, evaluate and predict the behaviour of economic agents.
  - Why?
  - How?
  - What?
- Model Selection.
- Implementation.
- Interpretation.

# Program

- Introduction to Data Science
- Methods
  - Maximum Likelihood Estimation Techniques
  - GMM
  - Numerical Optimization
  - Bootstrap
- Methods for cross section data.
- Panel data analysis
- Treatment Evaluation
- Semiparametric Methods (Time)

# Method

- Final objective is to be able to carry out economic research using a "commercial", push button software i.e. Stata
- My objective is to make sure that students understand what goes on behind the black box. As a consequence, you won't be doing any stata before the last two sessions of the class.
- Instead econometrics models will be computed using matrix based languages like R.
- Introduction to research by exploring some recent papers.

# Organization

- Class time
- Office hours: Email appointment
- TAs:
  - Hung-Wei Chang
  - Yasin Simsek
  - Shenghan Zhao
- Questions?

# Evaluation (1): Problem sets (individual)

- Data Manipulation (R/...)
- Data Manipulation (R/...)
- OLS (R)
- Binay Choice Models(R)
- Discrete Choice (R)
- Limited Dependent Variables (R)
- Panel Data (R)
- Recap (Stata)

# Evaluation (2): Reading notes

- Motivation of the paper.
- How: Which models? Which specification? Measurement issues.
- Findings. Re-interpretation.

# Evaluation (2): Reading notes (individual)

- Gender Gaps in Performance: Evidence from Young Lawyers (Azmat & Ferrer) Due Feb 10
- More coming..

# Evaluation (3): Research Proposal (groups of 2 or 3)

- Validate your topic by March 15. Proposal due on April 20.
- Ideal data and Model.

# Details

- Github
- Learn about R..
- Reference: A. Colin Cameron and Pravin K. Trivedi (2005), Microeconometrics: Methods and Applications, Cambridge University Press.