Current Trends in Computational Economics

Dr. Richard W. Evans

December 3, 2018

Outline

- Faculty and Researchers

- Papers

- Centers

- Universities

- Conferences

- Jobs

Ken Judd, Hoover Institution

- Kenneth L. Judd, website
  - Senior Fellow, Hoover Institution, Stanford University
- Papers and Books
  - Judd, Kenneth L., *Numerical Methods in Economics*, MIT Press, 1998.
  - Judd, Kenneth L., "Redistributive taxation in a simple perfect foresight model," *Journal of Public Economics*, 28:1: pp. 59–83 (1985).
  - Maliar, Serguei, Lilia Maliar, and Kenneth Judd, "Solving the Multi-country Real Business Cycle Model Using Ergodic Set Methods," *Journal of Economic Dynamics & Control*, 35:2, pp. 207-228 (Feb. 2011)

Susan Athey, Stanford GSB

- Susan Athey, website
  - The Economics of Technology Professor, Stanford Graduate School of Business
- Papers
  - Look at her research page
  - "The Impact of Machine Learning on Economics," in *The Economics of Artificial Intelligence: An Agenda*, forthcoming.
  - Wager, Stefan and Susan Athey, "Estimation and Inference of Heterogeneous Treatement Effects using Random Forests," *Journal of the American Statistical Association* 133, pp. 1-15 (2018).

Hal Varian, Google

- Hal Varian, website
  - Chief Economist, Google
- Papers
  - Varian, Hal, "Intelligent Technology," *Finance & Development*, International Monetary Fund, 53:3 (Sep. 2016)
  - Stephens-Davidowitz, Seth and Hal Varian, "A Hands-on Guide to Google Data," Working Paper (Mar. 2015).
  - Varian, Hal, "How to Build an Economic Model in Your Spare Time,"

John Rust, Georgetown University

- John Rust, website
  - Professor, Economics, Georgetown University
- Papers
  - Rust, John, "Mostly Useless Econometrics? Assessing the Causal Effect of Econometric Theory," *Foundations and Trends in Accounting*, 10:2-4, pp. 125-203 (January 2016)
  - Rust, John, "Optimal Replacement of GMC Bus Engines: An Empirical Model of Harold Zurcher," *Econometrica*, 55:5, pp. 999-1033 (Sep. 1987)

Thomas Sargent, New York University

- Thomas Sargent, website
    - Professor, New York University, Stern
    - Senior Fellow, Hoover Institution, Stanford
    - Founder, QuantEcon
    - Nobel Prize, Economics, 2011
- Papers and communities
    - QuantEcon.org
    - notes.quantecon.org
    - Hansen, Lars Peter and Thomas J. Sargent, "Structured Uncertainty and Model Misspecification," working paper (Nov. 2018)
    - Blume, Lawrence E., Timothy Cogley, David A. Easley, Thomas J. Sargent, and Viktor Tsyrennikov, "A Case for Incomplete Markets", working paper (June 2015).

Simon Scheidegger, HEC Lausanne

- Simon Scheidegger, website
  - Assistant Professor, HEC Lausanne
- Papers
  - Renner, Philip and Simon Scheidegger, "Machine Learning for Dynamic Incentive Problems," working paper, (2018).
  - Brumm, Johannes and Simon Scheidegger, "Using Adaptive Sparse Grids to Solve High-dimensional Dynamic Models," *Econometrica*, 85:5, pp. 1575-1612 (Sep. 2017)
  - OSM Lab high performance computing lectures and code
  - Ponder Tutorial, gif1, gif2

John Stachurski, Australia National University

- John Stachurski, website
  - Professor, Australia National University
  - Founder, QuantEcon
- Papers and communities
  - QuantEcon.org
  - notes.quantecon.org
  - Borovicka, Jaroslav and John Stachurski, "Existence and Uniqueness of Equilibrium Asset Prices over Infinite Horizons," working paper (2018)

Lars Hansen, University of Chicago

- Lars Hansen, website
  - Professor, UChicago, Economics and Statistics
  - Director, Macro Financial Research Initiative, BFI
  - Nobel Prize, Economics 2013
- Papers
  - Hansen, Lars Peter, Paymon Khorrami, and Fabrice Tourre, "Valuation Dynamics in Models with Financial Frictions," working paper slides. [(Joe slides)]
  - Hansen, Lars Peter and Thomas J. Sargent, "Prices of Macroeconomic Uncertainties with Tenuous Beliefs", working paper (Dec. 2017)
  - Borovicka, Jaroslav and Lars Peter Hansen, "Examining Macroeconomic Models Through the Lens of Asset Pricing," *Journal of Econometrics*, 183 pp. 67-90 (Nov. 2014).
  - Hansen, Lars Peter, "Large Sample Properties of Generalized Method of Moments Estimators," *Econometrica*, 50:4, pp. 1029-1054 (Jul. 1982)

Richard Evans, University of Chicago

- Richard W. Evans, website
  - Senior Lecturer, MACSS, UChicago
  - Director, Open Source Macroeconomics Laboratory
  - Fellow, Becker Friedman Institute
- Papers and Projects
  - Synthetic data version of the IRS Public Use File
  - Machine Learning Model of the IRS Tax Return Human Editing Process
  - DeBacker, Jason, Richard W. Evans, and Kerk L. Phillips, "Integrating Microsimulation Models of Tax Policy into a DGE Macroeconomic Model," *Public Finance Review*, (forthcoming, 2018).
  - Bejarano, Jeremy, Richard W. Evans, Kenneth L. Judd, and Kerk L. Phillips, "A High-performance Database Approach to Optimal Sales Taxation," (Sep. 2015).

Computational Economics Institutions

- UChicago: Econ, Booth, Harris, MACSS, CAPP
- Stanford
- Berkeley
- NYU
- MIT
- Open Source Macroeconomics Laboratory
- QuantEcon

Best Computational Economics Journals

- *Econometrica*
- *Review of Economic Dynamics*
- *Journal of Economic Dynamics & Control*
- *Computational Economics*

Best Computational Economics Conferences/Schools

- Allied Social Sciences Associations
  - American Economic Association
  - Econometric Society
  - Society for Computational Economics
  - Society for Economic Dynamics
- Midwest Macroeconomics Meetings
- Open Source Macroeconomics Laboratory/Dynamic Structural Economics School
- NBER Summer Institute
- Conference Maker
- Machine learning econ conferences

Private Sector Places

- EY, PwC, Bain, McKenzie
- Federal Reserve System
- National Bureau of Economic Research
- Google, Microsoft Research, Amazon
- Social Media: Facebook, Twitter
- NYTimes, Washington Post, CNN, FiveThirtyEight
- Brookings, Urban, AEI