Tara Sullivan

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Links: Website, Github, LinkedIn

Education

University of California, San Diego, La Jolla CA — Sept. 2015 - present
Ph.D. Candidate in Economics — *[Expected: June 2022]*
Primary fields: Macroeconomics, Econometrics
- Completed extensive coursework in causal inference, nonparametric and semiparametric models, and time series analysis

Dissertation: "Group-based beliefs and human capital specialization"
- Explains persistent gender gaps in college major choice using an optimal stopping problem with Bayesian learning
- Data analysis and theoretical modeling programmed in Python; see Github repository (link)

Boston College, Chestnut Hill, MA — Sept. 2008 - May 2012
BA in Economics (Honors), BA in International Relations
Phi beta kappa, magna cum laude, Giffuni prize for best senior thesis in the Economics department

Employment history

Wayfair, Boston, MA — June 2021 - August 2021
Economist Intern
- Evaluated the performance of deepAR, a global deep learning model, in producing demand forecasts
- Theoretically analyzed the effectiveness of global models for different forecasting workflows
- Python packages used include PyTorch, GluonTS, TensorBoard and PySpark. Worked in GCP

University of California, San Diego, La Jolla CA — Oct. 2015 - present
Teaching Assistant
- Extensive experience teaching the critical analysis of statistical models, from a theoretical and applied perspective, across different education levels (undergraduate, masters, PhD), and departments (Economics, Public Policy, Data Science)
  - Theoretical topics taught: probability and statistics (PhD level), introductory data analysis, linear regression, panel data analysis, linear programming, data visualization, causal inference
  - Applications taught: economics of discrimination, fairness in algorithmic decision making, international economics
- Managed a teaching staff of 10-12 for Principals of Macroeconomics, a course with 500 students. Organized transition to online exams in March 2020, and to full online instruction in 2021
- Recommended as a TA by 95% of students; won 2019 TA Excellence award

Research Assistant — June 2018 - Nov. 2018
- Wrote Structural VAR ado files in Stata to estimate impulse response functions that maximize forecast error variance. Required extensive use of Mata and knowledge of MATLAB. Supervisor: Valerie Ramey
- Analysis of the effectiveness of fixed vs random effects for macroeconomic model identification. Supervisor: David Lagakos

Environmental Defense Fund, New York, NY — July 2019 - Sept. 2019
Pre-doctoral Intern, Office of the Chief Economist
- Wrote forthcoming policy report summarizing how spatial general equilibrium models and time series analysis techniques can be used to understand agricultural climate change adaptation.

Federal Reserve Bank of New York, New York, NY — June 2012 - July 2015
Senior Research Analyst, Research Group, Financial Intermediation
- Overhauled system through which the Research, Markets, and Banking Supervision groups access bank holding company regulatory data using SQL, SAS, and Stata
- Produced quarterly policy reports on banking industry using Stata and VBA

Technical skills

Computing skills
- Primary languages: Python (quantitative example; matplotlib example); Stata (example); LaTeX; Git; SQL; MATLAB
- Packages: pandas, NumPy, Matplotlib, statsmodels, scikit-learn, GluonTS, PyTorch, TensorFlow
- Systems: MacOS, Windows, Linux, GCP

Analysis
- Fluent: Statistical inference (hypothesis testing, interval estimation); Point estimation methods (MLE, GMM, Bayes estimators); Linear regression; Time-series analysis; Forecasting; Optimal stopping problems; Deep learning; Panel data analysis
- Familiar: Observational causal inference; Instrumental variables; Kernel density estimation; Local polynomial regression Regression discontinuity; Propensity score matching; Bootstrapping; Principal component analysis; Potential outcomes models; Quantile regression; Numerical linear algebra; Nonlinear systems and numerical optimization