Luke B. Miller

Contact
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Education

PhD, Economics
Georgetown University
(2020 - 2026)

Masters, Economics
Ohio University
(2019 - 2020)

BA, Physics
DePauw University
(2010 - 2014)

RESEARCH AND WORK EXPERIENCE

Research assistant to L. Bouton, G. Genicot, M. Castaneira, and A. Stashko for "Pack-Crack-Pack: Gerrymandering with Differential Turnout" (Georgetown University, Spring 2022 - Present)

- Constructed comprehensive database of nearly 500 proposed U.S. redistricting plans from the 2020 redistricting cycle across all 50 states, utilizing web scraping and data cleaning techniques.
- Engineered data processing pipelines using Python (GeoPandas, Pandas) to standardize and integrate precinct-level demographics and election data across diverse geospatial formats (Shapefiles, GeoJSON).
- Developed a custom simulation framework to quantify the extent parties optimally redistrict.
- Built, trained, and evaluated machine learning models (Lasso, Random Forest, Gradient Boosting) using Python (Scikit-learn) to predict voter turnout, achieving a 0.75 R-squared.

Research assistant to L. Bouton for "Small Campaign Donors" (Georgetown University, Summer 2022 - Present)

- Implemented large-scale fuzzy matching algorithms to link over 8 million donor identities with housing data from Zillow's database, enabling household-level analysis of campaign donor data.
- Automated the extraction and cleaning of campaign finance and election rating data using Python (BeautifulSoup, Selenium) and the official FEC API.
- Ensured data integrity and accuracy by cross-referencing data to alternative sources (Python, SQL).

Research assistant to R. Duncan for "Just Do IT? An Assessment of Inflation Targeting in a Global Comparative Case Study" (Ohio University, Fall 2019 - Summer 2020)

- Applied synthetic control method in R to evaluate the causal effects of adopting inflation targeting policies on macroeconomic outcomes across diverse economies.
- Compiled and cleaned a comprehensive cross-national macroeconomic dataset spanning 25 variables for 23 countries over a 40-year period using R, retrieving data from the World Bank and IMF databases.

WORKING PAPERS

From Local Election Laws to National Campaigns: The Impact of Voting Costs on Turnout

- Developed a novel model of turnout integrating individual-level voting decisions and campaign strategies.
- Structurally estimated model on U.S. Presidential election data using Python (JAX) for computationally intensive estimation. (PDF)

Why People Vote: Comparing Models of Voter Turnout (with Maxime Cugnon de Sévricourt)

- Conducted structural estimation and comparison of multiple leading voter turnout models using a unique dataset of U.S. special elections and U.S. Congressional elections.

Tempting FAIT: Flexible Average Inflation Targeting and the Post-COVID U.S. Inflation Surge (with Roberto Duncan and Enrique Martínez García)

- Applied advanced causal inference techniques (Spillover and Augmented Synthetic Control methods) to estimate the effects of the Federal Reserve's FAIT policy framework on inflation and inflation expectations.

TEACHING EXPERIENCE (LEAD INSTRUCTOR)

Math Camp (PhD) and Statistics for Economics (Undergraduate), Georgetown University
Topics: Linear Algebra, Calculus, Non-linear Programming, Dynamic Programming, Probability Theory