LUKE VROTSOS

415 Chapel Dr, Durham, NC 27705 luke.vrotsos@duke.edu

EDUCATION

Duke University Ph.D. Candidate in Statistical Science

Harvard University B.A. in Applied Mathematics magna cum laude

RESEARCH

Vrotsos, L. and West, M. (2025). Dynamic graphical models: Theory, structure and counterfactual forecasting. arXiv:2410.06125. Under review.

Vrotsos, L. and West, M. (2025). A Bayesian approach to estimating the effect of the ACA Medicaid expansion on employment levels. In preparation.

ONGOING PROJECTS

Simultaneous Graphical Dynamic Linear Models

Collaboration with Professor Mike West

- · Theory and methodology for multivariate, dynamic graphical models
- Application to causal effect of ACA Medicaid expansion on employment, advancing existing literature by incorporating model uncertainty, staggered adoption dates, and factor modeling
- Development of portfolio decision analysis based on the characterization of multivariate volatility provided by these models

Bayesian Dynamic Modeling of Political Opinions

Collaboration with Professor Alexander Volfovsky

- · Bayesian dynamic factor stochastic volatility models for analysis of ordinal time series data
- \cdot Application to American National Election Survey responses from 1980 to 2022

INDUSTRY EMPLOYMENT

MetLife Investment Management Academic intern

· Analyzed financial time series data using Bayesian statistical models

Susquehanna International Group

Quantitative Trading Intern

- · Completed education in options trading, decision theory, and general finance.
- · Analyzed market data to develop trading strategies using pandas in a remote team of interns and full-time professionals.

CONFERENCE PRESENTATIONS

International Symposium on Forecasting, Dijon, France (2024).

September 2022 - May 2026 (expected)

September 2017 - March 2022

September 2024 - May 2025

June 2020 - August 2020

Joint Statistical Meetings, Portland, Oregon (2024).

Temple/Wells Fargo Data Science Conference, Philadelphia, Pennsylvania (2024).

BAYSM (Bayesian Young Statisticians Meeting), virtual (2025).

NSF/CEME Seminar in Bayesian Inference in Econometrics and Statistics, Philadelphia, Pennsylvania (2025).

Invited talk at Joint Statistical Meetings, Nashville, Tennessee (2025).

AWARDS AND SCHOLARSHIPS

Duke University Graduate Fellowship Harvard College Scholarship (top 10% of first-year class) National Merit Scholarship

LANGUAGES

English: native. French: proficient.