

Chase Coleman, Ph.D.

Remote · +1 941-290-1566 · chasecoleman93@gmail.com · github.com/cacoleman16 · pypi.org/project/panelkit

SUMMARY

Data science leader with a Ph.D. in Economics specializing in marketing measurement, causal inference, and Bayesian modeling. Promoted to Team Leader, Data Science in 2026 after a track record building MMM, attribution, and incrementality systems that optimize \$XXM+ in marketing spend and translate econometric insight into P&L impact. Experienced technical lead and people manager partnering with marketing, finance, and product to drive strategy. Author of open-source causal-inference tooling and a Ph.D.-level statistics instructor at the University of Kentucky.

EXPERIENCE

Team Leader, Data Science | Rocket Limited Partnership (Remote)

January 2026 – Present

- Promoted to lead the marketing measurement & incrementality team; scaling the testing program from ~4 tests/year toward 15–20/year while raising methodological rigor and reporting standards.
- Established synthetic-control holdout testing as the gold-standard measurement approach for ~\$XXM in annual marketing spend across the Rocket Mortgage and Redfin brands—using TV-viewership (Samba TV) and privacy-preserving clean-room data—socializing the strategy across IMC and Finance leadership.
- Built a novel Brand Health / Time-to-Impact model linking brand media to brand-health KPIs and downstream leads; surfaced that brand-health impact peaks ~3 months, directly shaping 2027 upfront commitments.
- Delivered 2027 upfront media planning guidance to the VP of Brand Media — optimal cross-brand and YouTube/TV spend mix, Super Bowl investment scenarios, and annual flighting.
- Serve as the primary data-science point of contact for the SVPs of Performance Marketing and Brand Marketing across testing, planning, measurement, and attribution.
- Quantified the effectiveness of national brand moments (e.g., the Super Bowl) on downstream lead and closing volume.
- Launched an in-house incrementality-based attribution solution, driving CAC and profitability decisions on ~\$XXM of annual performance-marketing spend.
- Built durable shared infrastructure: a Python incrementality framework that moved the team off R, plus an aggregated synthetic-control method automated via agentic AI.
- Authored a brand-measurement white paper (basis for the team's measurement playbook) and mentored/elevated team members — handing off the in-house attribution program and Redfin MMM to grow new subject-matter experts and reduce single-point-of-failure risk.
- Modeled the impact of performance marketing on client retention and built an attribution system for retention clients, extending measurement beyond acquisition into the retention lifecycle.

Staff Data Scientist | Rocket Mortgage (Remote)

July 2025 – January 2026

- Designed and productionized a profit-optimization algorithm determining optimal spend across marketing partners, delivering \$XM+ in incremental profit.
- Led development of an enterprise MMM and attribution roadmap, managing a team of data scientists and engineers.
- Quantified the long-run contribution of brand-health metrics to margin, enabling monetization of brand equity in planning and forecasting.
- Built annual channel-level planning tooling — a scenario planner combining a Bayesian structural VAR (BSVAR) with an LLM-generated internal codebase — generating marketing budgets and projected P&L under multiple macroeconomic scenarios, supporting \$XXB in origination volume.
- Served as technical lead for causal inference and MMM across the data science organization, delivering training and establishing best practices.

Senior Data Scientist | Rocket Mortgage (Remote)

October 2023 – June 2025

- Led geo-experimentation and incrementality testing across major ad platforms (Google, Meta), estimating the causal impact of marketing spend and informing budget allocation.
- Designed a measurement framework attributing over \$XXM in annual performance-marketing spend, aligning methodology with external agencies and vendors.
- Built and productionized a Bayesian Media Mix Model (MMM) supporting annual planning and quarterly re-forecasting, directly informing channel-level budgets.
- Developed and automated a value-based bidding system for digital ad platforms, reducing cost per conversion by 24%.
- Delivered three-year production and volume forecasts under multiple macroeconomic scenarios, supporting \$ZZB+ in expected origination volume.
- Applied advanced causal-inference methods, including synthetic control, to evaluate large-scale campaigns and spend reallocations.

Data Scientist | Rocket Mortgage (Remote)

July 2022 – October 2023

- Built ML models in Python and PySpark on AWS to segment high-purchase-intent consumers using large-scale tradeline, credit-trigger, and Experian data.
- Applied Bayesian techniques (Bayesian updating, prior information) with PyMC and SciPy to estimate milestone probabilities across the loan lifecycle.
- Developed digital bidding models that increased return on ad spend (ROAS) across paid-search channels.
- Integrated models into a production ML pipeline using MLflow; automated scoring/deployment with Seldon Core and Argo Workflows.

Data Science Intern | Federal Reserve Bank of Minneapolis (Remote)

June 2021 – August 2021

- Refactored and improved code quality for Dodd-Frank Act Stress Test (DFAST) models, enhancing reproducibility and maintainability.
- Modernized the analytical codebase using Tidyverse best practices, reducing technical debt in a regulatory modeling environment.

OPEN SOURCE

panelkit | pypi.org/project/panelkit · github.com/cacoleman16/panelkit

Author / Maintainer

- Authored a from-scratch causal-inference library for panel/geo experiments (Synthetic Control, Augmented SC, Synthetic DiD, MC-NNM, Callaway–Sant’Anna, Sun–Abraham), written in Rust with Python bindings.
- Hand-wrote a dependency-free numerical core (matmul, Cholesky, QR, Jacobi SVD, simplex/Frank–Wolfe solvers); ~60× faster than a NumPy/SciPy synthetic control per fit and ~1,400× on a full placebo test, with bit-identical reproducible inference.
- Includes a geo-test design layer for power analysis, market selection, and post-test measurement — the production-grade version of the incrementality tooling used at work.

EDUCATION

Ph.D. & M.S. in Economics | University of Kentucky, Lexington, KY

August 2018 – December 2023

B.A. in Mathematics, Economics & French Literature | Transylvania University, Lexington, KY

August 2012 – May 2016

RESEARCH

Revisiting the Effect of Monetary Policy on Household Consumption: A Functional Approach

- Estimated the causal impact of monetary-policy shocks on household consumption by identifying functional monetary-policy shocks; used functional local projections to capture the full interest-rate term structure, uncovering heterogeneous consumption responses driven by household balance sheets and life-cycle characteristics. (Python, MATLAB, time series.)

TALKS & PRESENTATIONS

- *Monetary Policy, Interest Rate Term Structure & Consumption* — Midwestern Econometric Group; Kentucky Economics Association (2022).
- *Under a SALT Cap: The Effect of Limiting the SALT Deduction on Local Housing Markets* — International Institute of Public Finance (2022).
- *Income and Wealth Inequality* — Georgetown University, Economic Policy Academy (2020).
- Invited teaching lectures — Fulbright Spain, Andorran education systems (2017); Université Paris 1 Panthéon-Sorbonne, risk-management English module (2017).

SKILLS

Languages & Frameworks: Python, PySpark, R, MATLAB, Rust, SQL, PyTorch, PyMC, Scikit-learn, XGBoost

Causal & Marketing Science: Media Mix Modeling (Bayesian), geo-experimentation & incrementality, synthetic control & DiD, causal impact, forecasting & time-series econometrics

Infrastructure & Tools: AWS (SageMaker, S3, Glue, Athena, Lambda), Databricks, Spark, Snowflake, MLflow, Seldon, Argo, agentic AI, Epsilon clean room

Teaching: Instructor, PhD Applied Econometrics (University of Kentucky, 2025); Graduate Macroeconomics (special section); R for Economists; Principles of Macroeconomics; Economic & Business Statistics; Fulbright Grant (Andorra)

Languages: French & Spanish (working fluency), Japanese (N3)