

Luke Catalano

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RESEARCH INTERESTS

Empirical industrial organization, auction theory, causal inference, platform and marketplace economics.

EDUCATION

M.S. Quantitative Economics and Finance, UC Santa Cruz

June 2026

GPA: 3.82 / 4.00.

B.A. Economics, *Honors*, UC Santa Cruz

June 2025

GPA: 3.54 / 4.00.

Educational Opportunity Programs (EOP) Scholar

HONORS AND AWARDS

Quantitative Economics & Finance Fellowship (\$3,500), UC Santa Cruz

2025

Dean's List, UC Santa Cruz

2024, 2025

RESEARCH EXPERIENCE

Economist Apprentice, Amazon Ads Economics

June 2026 – Present

Culver City, CA.

Advisors: Octavia Ghelfi (Senior Economist); Alan Sorensen (Amazon Scholar; U. Wisconsin–Madison).

- Calibration and validation of production price-elasticity of demand models used in advertising systems, using randomized pricing experiments across international marketplaces.

Graduate Independent Study

Spring 2026

Advisor: Peter Christensen (Associate Professor, UC Santa Cruz; Faculty Research Associate, NBER).

- Estimated spatially heterogeneous causal effects of NYC's January 2025 Congestion Pricing Act on weekly motor vehicle collisions using Local Linear Causal Forests (Friedberg et al. 2021).
- Constructed a 62-week post-treatment panel from NYPD Motor Vehicle Collisions data across 3,598 hexagonal spatial units covering the four-borough road network; one hex reached the 95% level after honest calibration, providing evidence against a measurable citywide collision effect.

Congestion Pricing Effects on Vehicle Collisions in NYC

Winter 2025

Advanced Quantitative Methods (ECON 114). Instructor: Julian Martínez-Iriarte (Assistant Professor, UC Santa Cruz). Coauthored with Eleanor Stoeber.

- Proposed and developed a causal analysis of NYC's January 2025 Congestion Pricing Act, using a difference-in-differences framework in R and Stata.
- Estimated a $\sim 17\%$ reduction in motor vehicle collisions during the first 10 weeks post-implementation; validated identifying assumptions (parallel trends, no anticipation) and discussed policy implications.

Injunctive norms and information about labor practices in a duopoly market *April 2025 – June 2025*

Advisor: Kristian López Vargas. Experimental Economics (ECON 165). Coauthored with Derek Zhao and Sadhika Agrawal.

- Designed and implemented a laboratory experiment in oTree (Python) testing how information about unethical labor practices and injunctive social norms affect consumer choice in a duopoly market.
- Estimated participant-clustered logistic regression on pilot data ($n = 24$): labor-practice information raised the probability of choosing the ethical seller by 57.5 percentage points, and adding an injunctive-norm treatment raised it by 61.5 percentage points, relative to a 12.5% baseline.

INDUSTRY EXPERIENCE

Quantitative Economics Intern II, R.D. Abbott Company *June 2025 – December 2025*

- Designed and deployed a hierarchical XGBoost demand forecasting model producing monthly 3-month-ahead volume forecasts; features included product classifications, lagged demand statistics, and a customer-exposure-weighted macroeconomic panel constructed from BLS series aggregated to NAICS-3.
- Built an automated pipeline pulling monthly BLS releases via API and reweighting the macro panel by current customer composition at each model run, so forecasts reflected sector-specific demand shifts affecting the customer book.
- Achieved $\sim 79\%$ walk-forward accuracy across North American shipment locations; adopted into monthly production forecasting and subsequently extended by the team to intermittent-demand (Class C) SKUs and new product lines.

Quantitative Economics Intern I, R.D. Abbott Company *June 2024 – September 2024*

- Built a Tableau financial reporting dashboard matching official reporting figures, eliminating $\sim \$60\text{K}/\text{yr}$ in third-party software costs and initiating a department-wide platform migration.

ADDITIONAL COURSEWORK

University of Illinois Urbana-Champaign, in preparation for Ph.D. applications:

- MATH 416 Abstract Linear Algebra (Fall 2026, NetMath)
- MATH 444 Real Analysis (Spring 2027, NetMath)
- MATH 463 Statistics and Probability I (Summer 2027, Main Campus)

TECHNICAL SKILLS

Programming: Python, R, SQL, Stata, MATLAB.

Tools: AWS, Git, L^AT_EX, oTree.