Guillermo Lezama

(412) 897-0180 | Seattle, WA (open to relocate) | guillelezama@gmail.com | LinkedIn | Github | Personal Website

PROFESSIONAL SUMMARY

Economist and data scientist with over ten years of experience applying causal inference, experimentation, and machine learning to real world business and policy problems. Trained in applied microeconomics, with hands on experience working with large scale experimental data, NLP and GenAI systems, and cloud-based analytics. Background spans industry, public institutions, and research environments, with a strong focus on turning data into decision relevant insights.

SKILLS AND TRAINING

Programming, Cloud & Data Science: Python, SQL, Stata, R, PySpark, AWS (SageMaker, S3, EMR)
LLMs & GenAI: GPT-4, OpenAI, RAG, fine-tuning, Prompt Engineering
Modeling Techniques: Naïve Bayes, Random Forests, K-Means, Text Classification
ML and NLP Tooling: Scikit-learn, TensorFlow, spaCy, HuggingFace
Causal Inference & Experimentation: A/B Testing, Diff-in-Diff, RDD, IV, Monte Carlo Simulations
Data Visualization: Tableau, ArcGIS, Streamlit, Matplotlib
Languages: Spanish (native/fluent)
Certificates: Summer Institute in Computational Social Science, Erdos Institute Data Science Boot Camp

EXPERIENCE

Amazon, Seattle, WA 2024 – 2026
Economist, Prime Economics (Rehired Full Time, 2025 to 2026)
Economist Intern, Prime Economics (2024)

- Backtested speed elasticity models using experimental data from regional launches and shutdowns of same day delivery, with zip code level randomization, to support model calibration.
- Estimated the causal effects of overnight delivery promises on customer sales for investment evaluation.
- Extended production pipelines to two additional international marketplaces, leading data preparation and stakeholder coordination, and working with large scale customer interaction data with hundreds of millions of observations.
- Developed a prototype framework to automate experimental analysis, including data ingestion, treatment effect estimation, and balance checks.
- Coauthored an internal conference paper on experimental estimation of speed effects, including comparisons of true same day and overnight delivery.
- Developed custom data processing pipelines using SQL within Cradle, an internal data processing framework, and built economic and empirical modeling frameworks, along with code prototypes, to study optimal delivery speed for non Prime customers.
- Explored the use of GenAI methods to support data analysis and modeling workflows, including preliminary assessments of how LLMs could be applied to customer level data.

Universidad de la República, Montevideo, Uruguay 2024– Present
Instructor of Exploratory Data Analysis (Github Repository)

- Taught applied Python and SQL for data science, covering NLP, clustering, and time series analysis.
- Mentored students on end to end applied projects focused on real world data and business style problems.

Búsqueda (newspaper), Montevideo, Uruguay 2024
Data Analyst (Dashboard 1 | Dashboard 2 | Github Repository | Slides)

- Developed and deployed interactive dashboards using Streamlit to support public facing analysis during national elections.
- Automated the processing of twenty years of electoral data using Python, enabling scalable analysis of voter behavior.
- Designed data visualizations that increased reader engagement and simplified access to complex election data.

University of Pittsburgh, Pittsburgh, PA 2019 – 2025
Research Assistant and Instructor

- Built and validated an OpenAI powered NLP system for large scale text classification, achieving strong agreement with human annotations and reducing labeling costs.
- Designed and taught an undergraduate economics course, producing asynchronous instructional content and assessments.
- Conducted applied research using econometrics, machine learning, and causal inference, presenting results at international conferences and policy forums.

The Summer Institute in Computational Social Science, Montevideo, Uruguay 2024
Co-Organizer

- Secured funding to host a Spanish language institute for graduate students and professionals.
- Coordinated programming on text as data, web scraping, experiments, and political polarization.

Legislator's Office, Montevideo, Uruguay 2015 – 2017
Economic Consultant to a Member of the Congress

- Provided economic analysis and briefing materials for a member of Congress.
- Translated technical economic concepts into decision relevant insights for non specialist audiences.

PUBLICATIONS AND DATA PROJECTS

Automating Large-Scale Political Text Analysis with OpenAI (LLMs, NLP & Causal Inference) (Dissertation Chapter Draft - submitted | Published Paper | Job Market Paper - submitted | Github Repository | Slides for NLP part)

- Engineered and fine-tuned OpenAI API prompts for 136K political statements, achieving 84% accuracy.
- Validated LLM classifications against human annotations, showing ChatGPT could reduce labeling costs from $12,000 to

$197 per 122,000 texts.

- Analyzed 13,344 political manifestos using ML & NLP, finding that incumbents reduced focus on exposed policy issues and adopted more populist rhetoric.
- Presented findings at the World Bank-IFS-ODI Tax Conference, shaping discussions on how transparency influences electoral strategy and political discourse**.**

Testing Qualitative Effects with Experimenter Demand (A/B Testing & Causal Inference) (Draft)

- Designed and ran controlled A/B experiments to test experimenter demand bias in surveys, providing insights for business and behavioral research.
- Developed Monte Carlo simulations in Python, ensuring statistical power for robust experiment design.

Export Restrictions and Global Food Prices (Working Paper)

- Built a database of trade restrictions and estimated their effects on global prices using a disaggregated gravity model.

Sanctions Analytics: Financial Impact of OFAC Enforcement (Working Paper)

- Used NLP to analyze OFAC enforcement data and merged with CRSP stock returns to study firm-level reputation loss.
- Demonstrated how public enforcement signals can shape market behavior showcasing relevancy for compliance risk and regulatory impact.

EDUCATION

University of Pittsburgh, Pittsburgh, PA 2025
PhD Economics

University of Pittsburgh, Pittsburgh, PA 2020
Master of Arts in Economics

Universidad de la República (Uruguay) 2019
Master of Science in International Economics

Universidad de la República (Uruguay), 2013
Bachelor of Arts in Economics