Guillermo Lezama

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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 and political economy, 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
NLP/ML Frameworks: Scikit-learn, TensorFlow, spaCy, HuggingFace
Machine Learning & NLP: OpenAI API, Prompt Engineering, Naïve Bayes, Random Forests, K-Means**,** Text Classification
Causal Inference & Experimentation: A/B Testing, Diff-in-Diff, RDD, IV, Monte Carlo Simulations
Data Visualization: Tableau, ArcGIS, Streamlit, Matplotlib
Languages: Spanish (native/fluent), English (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)
Member of the Prime Economics team supporting delivery speed investment decisions through experimentation, causal modeling, and large scale data analysis.

- Backtested speed elasticity models using experimental data, validating assumptions and comparing predicted versus observed customer responses.
- Estimated the causal effects of overnight delivery promises on customer behavior using large scale experimental data.
- Built a model to analyze responses to faster speeds that looked at specific behavioral effects across non-Prime members.
- Developed models to analyze responses to faster delivery speeds and contributed to extending these models across additional international marketplaces.
- Built a prototype codebase to automate and fast track treatment effect estimation for speed experiments, improving reproducibility and reducing manual analysis time.
- Contributed to validation and refresh cycles of core delivery speed models, including transactional and downstream effect estimation.
- Coauthored an internal conference paper on speed experiments, which was submitted, accepted, and presented to a cross functional economics and science audience.

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

- Developed and deployed interactive dashboards with Streamlit & Heroku which helped increase website traffic and engagement during national elections.
- Automated processing of 20 years of election data (2004–2024) using Python which enabled scalable voter behavior analysis.
- Built data visualizations of electoral trends which simplified public access to complex election data.

Universidad de la República, Montevideo, Uruguay 2024 – 2025
Instructor of Exploratory Data Analysis (Github Repository)

- Taught industry-relevant Python and SQL for data science class, covering NLP, clustering, and time series forecasting (20 students)
- Mentored two students on applied projects, helping them build machine learning pipelines to be used in business.

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

- Built and optimized an OpenAI-powered NLP validation system, achieving consistent classifications with human annotations (correlation > 0.5), enabling scalable narrative labeling while minimizing researcher bias.
- Designed and taught a fully asynchronous undergraduate economics course, producing 80+ instructional videos and assessments to improve access and engagement across institutions.
- Conducted applied research in NLP, econometrics, and causal inference, contributing to peer-reviewed publications, international conference presentations, and securing multiple research grants.

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

- Secured funding (8000 USD) from the Templeton World Charity Foundation to host a two-week Spanish-Language Institute for 15 graduate students and professionals in computational social science.
- Coordinated logistics and programming for lectures, workshops, and research projects on text as data, web scraping, digital experiments, and political polarization.

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

- Synthesized information by crafting presentations and briefs that simplified economic concepts for non-specialist politicians, utilizing macroeconomic and budget data to enhance understanding and decision-making.
- Received recognition as one of the "top 5" in a Trade Policy Essay competition.

PUBLICATIONS AND DATA PROJECTS

Automating Large-Scale Political Text Analysis with OpenAI (LLMs, NLP & Causal Inference) (co-authored) (Dissertation Chapter Draft - submitted | Published Paper)

- 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.

Information about Corruption and Politicians' Proposals (NLP & Causal Inference) (Job Market Paper - submitted | Github Repository | Slides for NLP part)

- 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**.**

Extreme Weather Events and Household Environmentally Friendly Consumption (co-authored)

- Merged and cleaned efficiently over 15M Nielsen Consumer Panel data points to analyze eco-friendly consumption metrics and assess extreme weather impacts on consumption.

Testing Qualitative Effects with Experimenter Demand (A/B Testing & Causal Inference) (co-authored) (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 (co-authored) (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

- 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