Guanghong Xu

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Summary

Economics Ph.D. candidate specializing in Causal Inference, Machine Learning, Econometrics, and Bayesian Statistics
4 years of work experience using analytics to solve product and business problems, coding (Python, R, SQL), and statistical analysis

Technical Skills

Causal Inference & Experimentation: A/B Testing, Observational Study Designs, Instrumental Variable (IV), Diff-in-Diff, Regression Discontinuity Design (RDD), Double ML, Synthetic Control, Policy Impact Evaluation
Data Modeling & Machine Learning: Bayesian Statistics, Time-Series Analysis, Random Forests, Support Vector Machines, Lasso/ElasticNet Regression, Clustering (K-Means, GMM)
Certifications: Financial Risk Manager (**FRM**) – Both Levels, Chartered Financial Analyst (**CFA**) – Level I
Programming & Data Tools: Python, SQL, R, MATLAB, STATA, Stan, SurveyCTO, ODK, GIS, Git, Power BI, Tableau, LaTeX

Experience

Visiting Scientist Aug. 2021 – Sep. 2024
CGIAR International Livestock Research Institute (ILRI) *Nairobi, Kenya*
- Led 4 large-scale causal inference studies impacting 6,000+ smallholder farmers across 120+ Kenyan dairy cooperatives
- Developed a digital credit scoring model using logistic regression, leveraging transaction histories and farm productivity data to predict loan repayment likelihood and improve financial access for smallholder farmers
- Managed an A/B test on a Google-funded digital learning platform, evaluating the impact of ambassador-led engagement on 4,000+ Kenyan users, increasing retention by 27%

Research Associate Jan. 2021 – Aug. 2021
Innovations for Poverty Action (IPA) *Kigali, Rwanda*
- Led a $803K A/B testing project with 180 maize cooperatives, connecting farmers to processors through the UN WFP Farm to Market Alliance program, resulting in 150%-300% revenue increases
- Designed and implemented survey instruments using *SurveyCTO* for 3 large-scale randomized evaluations, collecting data from 2,500+ farmers and cooperative leaders across Rwanda
- Managed field teams of 50+ enumerators to ensure high-quality data collection and compliance with research protocols

Equity Data Analyst Jul. 2017 – Apr. 2018
Morningstar *Shenzhen, China*
- Analyzed annual and quarterly financial reports for 300+ publicly listed companies in North America
- Conducted financial performance assessments utilizing DCF, comparable company analysis (CCA), and regression models, resulting in 20+ data-driven investment recommendations
- Utilized SQL window functions, user-defined functions (UDFs), and self-joins to efficiently extract, clean, and analyze financial datasets from relational databases, ensuring data integrity and consistency in reporting

Data Science Projects

MilkChain | *Python, R, Stata, Machine Learning, Bayesian Models, A/B Testing* Aug. 2021 – Dec. 2024
- Led a cross-functional team of software engineers, data analysts, and field coordinators to develop a digital traceability system monitoring milk movement across 1,200+ farmers, intermediaries, and retailers in Kenya's dairy supply chain
- Designed and implemented machine learning models (Lasso, ElasticNet) in Python to predict milk quality, applying data preprocessing, feature selection, and hyperparameter tuning to optimize model performance
- Developed Bayesian hierarchical models using Markov Chain Monte Carlo (MCMC) algorithms in R, achieving 90%+ prediction accuracy on milk quality classification
- Designed and led a $148K (independently raised from NSF, MIT/J-PAL, Weiss Fund, etc.) A/B testing project that revealed hidden milk quality information via traceability systems and Bayesian models, reducing milk adulteration by 21.9%

RainDistancing | *Python, Stata, GIS, Instrumental Variable (IV)* Apr. 2020 – Jan. 2022
- Processed and integrated large-scale geospatial datasets using QGIS and Python, analyzing mobility patterns across 1,900+ U.S. counties to assess weather-driven behavioral shifts
- Built causal inference models (Instrumental Variable) to quantify the economic and epidemiological effects of mobility changes
- Published findings in the *Journal of Health Economics (2022)*, advancing evidence-based pandemic policy design

Education

University of California, Santa Cruz Santa Cruz, CA
Ph.D. in Economics, Department of Economics (GPA: 3.95/4.0) *Sep. 2018 – Jun. 2025*
- UCSC Chancellor's Dissertation-Year Fellowship ($54,320) – *Only recipient from Economics Department in decades*
- Annual Award for Excellence in Teaching

Jiangxi University of Finance and Economics Jiangxi, China
B.S. in Finance, International School (GPA: 93/100, Rank: 2/557) *Sep. 2013 – Jun. 2017*
- China National Scholarship by *Ministry of Education* (Awarded to top 3 among 2,300)
- CFA Program Student Scholarship by *CFA Institute*