

# 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, L<sup>A</sup>T<sub>E</sub>X

## 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

## WORK 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

## 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

**University of California, Santa Cruz** Santa Cruz, CA  
*M.A. in Economics, Department of Economics (GPA: 3.93/4.0)* Sep. 2018 – Dec. 2019  
**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