Minjae Seo

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Education

University of California, Berkeley **Dec 2025**
Bachelor of Arts in Statistics GPA: 3.85/4.0
Relevant Coursework: Optimization Models in Engineering, Modern Statistical Prediction & Machine Learning, Principles & Techniques of Data Science, Data, Inference, & Decisions, Econometrics, Causal Inference

Skills

Languages: SQL, Python, R, Stata, SAS
Tools: Tableau, PowerBI, Pytorch, Tensorflow, Data Wrangler, AWS, Git, LLM(Groq API), Beautiful Soup
Databases: MySQL, PostgreSQL, MongoDB
Web Technologies: PHP, JavaScript, HTML

Highlighted Experience and Projects

AI Intern, YCX, Remote **May 2025**
- Engineered an AI-powered Know Your Business (KYB) system that dynamically integrates multi-agent orchestration, enabling automated report generation and dataset enrichment using LLM's Groq Api and web scraping(Beautiful Soup in Python).
- Enhanced data completeness by designing a modular agent pipeline that increased data coverage across 300+ firms by 40%, integrating inputs from open web sources, company filings, and JSON-formatted LLM outputs.

Quantitative Research Intern, Global Key Advisors, Hybrid **March 2025**
- Analyzed insider trading profitability by merging and cleaning SEC Form 4, CRSP, and Refinitiv datasets, leveraging Python to develop alpha prediction models across Fama-French 48 sectors.
- Developed automated pipelines for data extraction, classification, and ROI tracking, facilitating downstream portfolio strategy testing by the research team.

Research Assistant: Causal effects estimation: Evidence from Natural Experiments **Feb 2025**
- Cleaned and harmonized the Chinese Thermal Comfort Dataset, constructing a city-level panel of 32 northern (treatment) and southern (control) cities using Python.
- Performed sharp regression discontinuity analysis at the 33˚N threshold to identify the causal relationship between the running/treatment variable and indoor air temperatures using matplotlib(Python) and rdrobust(R) packages.
- Identified a statistically significant 4.3˚C increase in operative temperature in northern cities(treatment) via weighted least squares, controlling for city fixed effects and polynomial trends.

Research Apprenticeship: *Investigation of Sustainability in Durable Good Markets***,** Course: UGBA 199 **Jan 2025**
- Analyzed household-level expenditure(Consumer expenditure from BLS) through event study plot and regression analysis under a Difference-in-Differences/Synthetic Control framework to evaluate the causal effect of Massachusetts' Right to Repair Law on vehicle service and parts expenses.
- Identified a post-policy decline in repair costs attributed to increased third-party competition, supporting legislative impacts on market efficiency and consumer behavior.

Research Apprenticeship: *Adaptive Cross-validation in Double Machine Learning***,** Course: ECON 199 **Dec 2024**
- Developed and implemented an adaptive simulation framework for Double Machine Learning (DML) with continuous treatments, enabling dynamic model selection via cross-validation and information criteria.
- Collaborated with an Economics PhD candidate to reduce researcher-induced bias using Monte Carlo simulation pipeline particularly ensemble CV tuning indices through python scripts, achieving 90.8% accuracy.

Leadership and Extracurricular Activities

Undergraduate Economics Association, **Head of Research**, UC Berkeley Economics Department **Jan - Dec 2024**
- Directed biweekly research workshops to train new members in core econometric methods and statistical programming (R/Stata), enhancing analytical capacity across project teams.

Undergraduate Student Instructor, Machine Learning, UC Berkeley Statistics Department **Aug - Dec 2024**
- Assisted professors to grade and revise 60+ students homeworks and exams in a tight course schedule.

Attendee, Econometrics Game, University of Chicago **March 30th, 2024 - April 1st, 2024**
- Delivered a high quality analysis report to the judges, including a Nobel prize winner in economics with a team of 4 (two London School of Economics and one UC Berkeley student).