MINGZHANG QIAO

043 Eggers Hall, Syracuse, NY 13244 ◇ (+1) 608-977-3232 ◇ miqiao@syr.edu
Department of Economics ◇ Maxwell School of Citizenship and Public Affairs ◇ Syracuse University

EDUCATION

Ph.D. in Economics, *Syracuse University* *May 2026 (expected)*
Research Interests: Causal Inference, Doubly Robust Machine Learning, Panel Data Econometrics,

M.S. in Analytics, *Georgia Institute of Technology* *May 2027 (expected)*
Coursework: Python for Data Analysis, SQL Databases, Natural Language Processing, Deep Learning

M.S. in Economics, *University of Wisconsin-Madison* *May 2021*
Coursework: Advanced Microeconomics, Advanced Econometrics, Time Series Econometrics

B.S. in Economics, *Jilin University* *June 2019*
Coursework: Probability Theory and Statistics, Intermediate Econometrics, Financial Engineering

WORK EXPERIENCE

Data Scientist Intern, *DeveloperDB* *Sunnyvale, California, The U.S., July 2025 -*
– Extracted 400K+ high-tech talent profiles from Elastic Search and parsed unstructured JSON into structured data using Python (pandas), leveraging basic Natural Language Processing.
– Performed vector-based fuzzy matching between candidate work histories and a company metadata library using Sentence Transformer embeddings.
– Implemented semantic vector similarity search and retrieval-augmented generation (RAG) via Weaviate and OpenAI API to match and summarize talent profiles for targeted job queries.
– Feed shortlisted profiles into a Decision Tree model to assist Large Language Models in drafting personalized outreach emails to potential candidates at scale, improving recruiter engagement rate.

Financial Analyst Intern, *Bank of China International* *Beijing, China, July 2024 - Sep 2024*
– Conducted industry research and IPO-related analysis for client-facing reports.
– Collected and preprocessed time-series data from major Chinese stock indices to assess market trends.
– Built visualizations to compare IPO candidates across sectors using Python (pandas) and Excel.
– Supported investment recommendations by identifying growth patterns and valuation signals from historical financial data.

Financial Analyst Intern, *Citibank* *Nanjing, Jiangsu, China, July 2017 - Aug 2017*
– Analyzed macroeconomic and financial market trends to evaluate prospective profitability of structured investment products.
– Used EViews to fit ARMA models on major Chinese stock indices (e.g. SSE 50, CSI 500) to identify return patterns and inform investment advice.
– Quantified portfolio risk exposure and advised clients on allocation shifts to mitigate downside.
– Contributed to portfolio restructuring by integrating forecasted returns and sector volatility metrics.

TECHNICAL SKILLS

Programming: Python (NumPy, Pandas, Sci-kit learn), SQL (SQLite, PostgreSQL), R, STATA, LaTeX
Data Science Methods: Observational Causal Analysis, Causal Machine Learning, Time Series Forecasting, Natural Language Processing
Languages: Chinese Mandarin (Native), English (Fluent)

RESEARCH PROJECTS

"Use Random Forest to Estimate the Heterogeneous Causal Effect of Job Loss on Mental Health" *Aug 2025*
– Processed German SOEP panel data (2002–2024) using SQLite: extracted, merged, and filtered employment, health, and demographic variables.
– Constructed pseudo outcomes by fitting a panel fixed effects model on the control group (DID framework) in Python.
– Trained a causal forest model in R (grf) to estimate ATE under doubly robust conditions; benchmarked results against propensity score matching estimates.
– Visualized heterogeneous treatment effect using causal forest and interpreted heterogeneity across key covariates such as age, income, and education.

"Survival Analysis of Reemployment after Injury-Induced Unemployment" *May 2025*
– Investigated factors influencing the probability of returning to work after injury-induced unemployment using the employment record dataset.
– Performed data cleaning and preprocessing in Stata, generating descriptive statistics and preliminary results with logit/logistic models to guide model specification.
– Leveraged GAUSS to implement likelihood-based estimation from scratch, gaining a deep understanding of Weibull, Prentice-Gloeckler (PG), and Prentice-Gloeckler-Meyer (PGM) models, including frailty and mixing extensions.
– Applied Python survival analysis packages to conduct empirical estimation, compared models and frameworks, and validated robustness of results to provide policy-relevant insights on reemployment dynamics.

"Cluster-Robust Inference for Extremely Unbalanced Panel Data" *Oct 2024*
– Analyzed the failure of standard cluster-robust variance estimators in extremely unbalanced panel data settings, a frequent issue in large-scale applied datasets.
– Developed a statistically rigorous weighted estimator with formal asymptotic guarantees, applying advanced probability and econometric theory to ensure robustness under unit root processes and serial dependence.
– Implemented and ran high-performance Monte Carlo simulations in MATLAB to test finite-sample properties and benchmark performance against existing methods.
– Produced a robust inference framework that improves the reliability of regression analysis in unbalanced panels, with applications in labor economics, healthcare analytics, and financial modeling.

CONFERENCES AND SEMINARS

New York Camp Econometrics XVIII *Lake Placid, NY, The U.S., Apr 26 2024-Apr 28 2024*
– Bring together a group of econometricians/empirical economists and guests of host universities to discuss issues in econometrics, both applied and theoretical.

Workshop of Social Media and Economics *Cologne, North Rhine-Westphalia, Germany, Mar 2018-May 2018*
– Completed interdisciplinary coursework on social media and economic sentiment with peers of University of Cologne.
– Analyzed public opinion data from Facebook and Twitter using Condor and performed regression analysis on attitude trends.

East Asia Economics Forum *Nishinomiya, Hyogo, Japan, Dec 2017-Feb 2018*
– Collaborated with Kwansei Gakuin University and Jilin University scholars and completed joint workshops on East Asian economy.
– Produced two research reports on e-commerce development and housing market price volatility between China and Japan (1995–2015).

AWARDS

Graduate Assistantship, *Syracuse University* *2021-2025*
Summer Support, Department of Economics, *Syracuse University* *2021-2025*
Second Honor Scholarship, *Jilin University*, *2016*
Individual Scholarship in Arts & Sports, *Jilin University* *2016*