

Qinxin (Mary) Wu
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Education

- 2024– **M.S.**, Statistics & Data Science, Northwestern University, *Evanston, IL*
Thesis Advisor: Wenxin Jiang
- 2020–2024 **B.A.**, Economics & Mathematics, New York University, *New York, NY*

Research Experience

- 2025.01– **Bayesian Hierarchical Modeling for Sunspot Number Reconstruction**
Supervisor: Wenxin Jiang (Northwestern University)
Abstract: Sunspot numbers (SSNs) track the phase and amplitude of the Sun’s ~11-year magnetic cycle. Pre-telescopic SSNs are sparse and unreliable; works in astronomy have used ^{14}C production rates to reconstruct SSNs, which sometimes led to negative values. A prior statistics study addressed this issue through Bayesian knowledge infusion, yielding near-zero, positive SSNs at cycle minima. We extend this to a yearly reconstruction by fitting a cycle-shape model with latent start times and amplitudes; global hyperparameters are learned from telescopic observations, and a joint likelihood links the ^{14}C -telescope overlap years and single-source periods. This yields a posterior over cycle start times and amplitudes, and, in turn, a full annual SSN series with uncertainties, validated against both ^{14}C and telescopic data.
- 2024.05– **Machine Translation in Reducing Language Barriers to Chinese Outward FDI**
Supervisor: Bernard Yeung (NUS); joint with Lixin Huang (Beijing Normal University)
Abstract: Classic Foreign Direct Investment (FDI) theory attributes firms’ location choices to geographic and cultural proximity. A key component of culture is language, whose impact is empirically difficult to isolate from broader cultural factors. We overcome this challenge by exploiting the staggered rollout of Google Translate language support, which is exogenous to outward FDI and provides a natural staggered DiD setting. Using a firm–country–year panel of SZSE-listed Chinese companies from 2002–2019, we estimate a fixed-effects Poisson model with firm, host-country, and China-host dyadic controls to identify the causal effects of language barriers on outward FDI location choices.
- 2022.08–12 **Research Assistant, Tax Incidence**
Supervisor: Wenjian Li (Zhejiang University)
Topic: Analysis of general equilibrium tax incidence models linking consumer demand, firm production, and government taxation. Derived incidence and welfare implications using techniques such as total differentiation and log-linear approximations. Presented at weekly group meetings.

Projects & Initiatives

- 2025.06– **Data Scientist/Web Developer, CareMatch** 
Develop and maintain the website for CareMatch, a public health startup aiming to bridge caregiving gaps for vulnerable individuals. Lead discussions on AI integration and app development, and contribute to investor outreach and pitch materials.
- 2025.04 **IMC Prosperity 3** 
Rank: top 5% globally
Conducted exploratory analysis of time-series trading data in Python to detect alpha signals and market patterns in a 15-day trading competition; collaborated with 4 other students to develop and implement optimized trading strategies.
- 2024.11 **U.S. Presidential Election Forecast** 
Mentor: Martin Tanner (Northwestern University)
Applied Bayesian simulation models to analyze state-level polling data in Python, generating forecasts that correctly predicted the 2024 presidential election winner. Presented results to Bayesian statistics class (STAT-357).

Skills

Technical: Python, R, SQL, SAS, GitHub, \LaTeX

Languages: English, Chinese

Awards & Honors

- 2021–24 **Dean's List**, New York University
- 2020 **National Merit Scholarship Finalist**, The Baldwin School
- 2017 **Gold Certificate**, UKMT Intermediate Mathematical Olympiad and Kangaroo

Other Experiences

- 2025.06–08 **Merchant Analytics Intern**, Grubhub, *Chicago, IL*
- 2023.06–08 **Asset Custody Intern**, China International Capital Corporation, *Beijing, China*
- 2022.06–08 **Marketing Intern**, About Time Coffee, *New York, NY*
- 2021.05–08 **Sales Intern**, UHOMES, *New York, NY*