Zhu Liang

(608) 695-7780 liangzhu1995@gmail.com zhuliang.io zhuliang21 zhuliang21

SUMMARY

Highly analytical and quantitatively driven professional with a proven ability to enhance and innovate models and methodologies. Passionate about leveraging advanced statistics and econometric techniques to tackle complex risk modeling challenges in the financial industry.

EDUCATION

Ph.D. in Economics (STEM), Stony Brook University — Expected March 2025
Fields: Empirical Industrial Organization, Health Economics, Applied Econometrics
M.S. in Econometrics and Quantitative Economics, University of Wisconsin-Madison — 2017 - 2019

SKILLS

Advanced Graduate Certificate in Data and Computational Science, Stony Brook University
GitHub Copilot, **GitHub Foundations**, GitHub
Google Data Analytics Professional Certificate, Coursera
Programming: Python, SQL, R, MATLAB, STATA, Excel, C, MPI, Copilot, Git, LaTeX
Quantitative: Econometrics, Optimization Methods, Machine Learning, Monte Carlo Mathod.

EXPERIENCE

Dissertation Researcher, Stony Brook University — 2021 - 2024
"Risk Adjustment, Self-Selection, and Plan Design in Medicare Advantage" - Job Market Paper

- Developed a multiple choice **logistic model** to capture beneficiary insurance plan selection behavior and used **two-stage least squares (2SLS)** to resolve endogeneity in product design.
- Leveraged **Monte Carlo simulations** to generate diverse beneficiary private information, enhancing data robustness.
- Combined beneficiary choice data with insurance plan market share to estimate parameters using **simulated maximum likelihood estimation (SMLE)**.
- Utilized counterfactual simulations to conduct **scenario analysis**, quantitatively assessing the impact of risk adjustment mechanisms on market behavior and associated welfare outcomes.

Research Assistant, Stony Brook University — 2021 - 2023

- Developed and maintained robust data cleaning and preprocessing pipelines for large-scale transaction datasets using Python and R, ensuring high-quality data for empirical research and analytics.
- Integrated and managed extensive survey datasets containing plan characteristics and health outcomes, ensuring data integrity and consistency.
- Collaborated with faculty to develop and validate critical model assumptions for a healthcare market model, enhancing the reliability of research outcomes.

NLP Applications on Yelp Datasets — 2023

- Leveraged Python and machine learning libraries, including Scikit-learn, Random Forest, and XGBoost, to implement classification models on Yelp feedback data.
- Evaluated model performance using metrics to ensure robust prediction outcomes.
- Developed a restaurant recommender webpage that predicts user behavior using NLP techniques for feature extraction.
- Employed Flask to build a lightweight backend for managing user requests and application workflows.

Teaching Assistant, Stony Brook University — 2019 - Present

- Taught recitation sessions in Econometrics, Applied Macroeconomics, Data Science, and Machine Learning, emphasizing practical problem-solving techniques.
- Edited and maintained a comprehensive repository of coding and math tutorials tailored for students with limited backgrounds in these areas.
- Managed and streamlined activities across multiple sessions and lecture sections, enhancing communication and ensuring teaching consistency.