Jie Liao

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Education

University of California, San Diego, UCSD   Sep. 2021 – June. 2025
BA in Economics: 4.0/4.0
BS in Applied Mathematics: 3.96/4.0

- Cumulative GPA: 3.987/4.0
- **Coursework:** Econometrics, Microeconomic, Macroeconomics, Data Analysis, Linear Algebra, Vector Calculus, Probability Theory, Real Analysis, Optimization, Ordinary/Partial Differential Equation
- **SEYMOUR HARRIS AWARD**: the Department's most outstanding Economics student
- **Honors**: Provost Honors(2021-2025), Marshall College Honors(2021-2025)
- **Latin Honors**: Summa Cum Laude
- Member in **Phi Beta Kappa Honor Society**

Working Paper

- Combining Forecasts - On Why Averaging beats Optimal Linear Weights with Graham Elliott

Research Experience

Research Assistant   UCSD
Assisted Prof. Emanuel Vespa with   Apr. 2022 - Feb. 2023

- Coding data collected from Economic Experimental Lab

Assisted Prof. Tom Vogl with   Feb. 2023 - Sep. 2024

- Cleaning and Harmonizing Living Conditions Survey (LCS) for supplmenting waves for longitudinal datasets
- Conducting data analysis on panel data after harmonizing
- Creating Geographic Information Systems (GIS) visualizations in R

Research Projects

- Estimating impact of Majoring in Computer Science on Future Earnings
    - Utilized a dual approach of estimating the effects of choosing a CS major on individual and institutional earnings
    - Applied fixed effect regressions to analyze the impact of offering CS on institutional median earnings

- An Empirical Analysis of the Impact of Monetary Policy on Missouri's Economic Activity
    - Fitted reduced-form VAR to estimate the effects of the Federal Funds Rate on GDP Growth and Unemployment, with Impulse Response Analysis for their responses to monetary policy shocks.

- Predicting Household Wealth in the U.S.
    - Utilized K-Fold Cross-Validation Approach to identify predictive features and select prediction models

- Investigating the Relationship Between Depression and Socioeconomic Factors
    - Conducted correlation analysis and utilized non-parametric methods to examine differences in depression scores across groups based on socioeconomic status
    - Developed predictive models using Ordinary Least Squares (OLS), XGBoost, Random Forest, and Decision Tree
    - Identified significant differences in depression severity between women who gave birth and those who did not, with socioeconomic factors playing a critical role

- Digital Recognition: Optimizing Handwritten Digit Classification Using Singular Value Decomposition

- Performed SVD on digit clusters, constructing subspaces for each digit using the first k left-singular vectors, with training data selecting the optimal rank k.
- Classified test data by projecting onto each subspace and measuring the distance from test vectors to identify the corresponding digit.

Research Lab Jan.2024 - Mar.2024

- Participated in a Research Lab at UCSD, receiving mentorship from graduate students on conducting data analysis.
  - Collected data on compulsory education laws across countries and applied Regression Discontinuity Design (RDD) to estimate the effects of compulsory schooling laws(CSL) on rural-to-urban migration.

Teaching Experience

- Undergraduate Instructional Apprentice (UIA) for econometric class — Sep. 2023 - Dec. 2023
- Assistant Coach for the Chinese National Team at the International Economics Olympiad (IEO) — June. 2022 - June 2024
  - Teaching Intermediate Macroeconomics and Microeconomics
  - One of the coached team achieved sixth place in the global competition

Skills

Computer and Programming: Proficient with Python, R, and Matlab. Familiar with Stata, Java