

Chia-Hung Kuo

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PhD Candidate in Economics with strong background in data visualization, quantitative research, time-series modeling, and causal inference. Experienced in applying machine learning and statistical methods to real-world problems, now focusing on data science and business-driven analytics.

Technical Skills

Programming: Python, SQL, Stata, Julia, R, MATLAB

Libraries & Tools: pandas, NumPy, Polars, scikit-learn, PyTorch, matplotlib, seaborn

Data Tools: PostgreSQL, BigQuery, Redshift, Spark (PySpark)

Cloud & DevOps: AWS, Docker, Git, FastAPI, Flask

Core Skills: data visualization, supervised & unsupervised learning, A/B testing & experimentation, deep learning, MLOps, time-series modeling, causal inference

Projects

Market Regime Classification with Cross-ETF Ensemble Learning Sept 2025

- Processed 14M+ minute-level financial records across 9 ETFs using Polars
- Built ensemble of 100+ models (XGBoost, RandomForest, Logit) with MLflow tracking and Optuna tuning
- Achieved $95.6\% \pm 6.8\%$ PR-AUC with ensemble vs $60.8\% \pm 12.8\%$ best individual model
- Tech stack: Python, Polars, scikit-learn, MLflow, Optuna, XGBoost

Working Papers

Family Structure and Young Adult's Migration Decisions Mar 2023

- Estimated structural choice model via MLE on 9,000-person panel (NLSY97)
- Two-parent households show 12% lower migration rates, controlling for education and wages
- Structural model reveals 35% higher home valuation for two-parent households, net of economic factors

Compulsory Schooling and Locus of Control: Evidence from China Feb 2021

- Natural experiment leveraging provincial variation in policy implementation with 16,500 observations (CFPS)
- Identified causal effect of education on personality traits (0.84 std), 6x larger than OLS, concentrated among compliers
- Decomposed psychological mechanism: education weakens fatalistic beliefs rather than strengthening meritocratic ones

Experience

Michigan State University, East Lansing, Michigan

Graduate Instructor/ Teaching Assistant 2018/9-2024/1

- Taught and supported economics/econometrics courses for 10–150+ students, designing lectures and coursework
- Recognized with Excellence in Teaching Award (2022), a selective honor for 1-2 graduate instructors annually

American Economic Association Summer Program (Online)

Tutoring Fellowship 2020/6-2020/8

- Selected for AEA fellowship to support underrepresented students in graduate-level economics
- Delivered tutoring session in PhD courses in macroeconomics, dynamic programming, and quantitative methods

Institute of Labor Economics, Bonn, Germany

Research Assistant for Growth and Labor Markets in LICs 2017/1-2018/7

- Supported Growth and Labor Markets in Low-Income Countries programs (GLM|LIC)
- Coordinated grant tracking, reviewed 100+ proposals, and liaised with international research teams
- Contributed to policy briefs and working papers, translating research findings into publications for academic and policy audiences

Education

PhD Candidate - All But Dissertation, Economics, Michigan State University (US) 2024/6

Master of Science, Economics, Michigan State University (US) 2020/3

Master of Science, Economics, University of Bonn (Germany) 2018/6

Bachelor of Science, Quantitative Finance (Taiwan) 2014/6

Honors & Conferences

Midwest Economics Association Annual Meeting 2023

Kelly Fellowship, Dept. of Econ., MSU 2022

Excellence in Teaching Award, Dept. of Econ., MSU 2022

Red Cedar Conference, East Lansing, Michigan 2021

Honorable Mention, Peter Schmidt Award, Dept. of Econ., MSU 2019

- 2nd Place, Qualifying Exam