

Chia-Hung Kuo

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Technical Skills

Programming: Python, SQL, Stata, R

DS: scikit-learn, PyTorch, XGBoost, pandas, Polars, EconML, CausalML

Visualization: matplotlib, seaborn, Tableau

MLOps: MLflow, Optuna, Git, Docker, AWS

Data Platforms: MySQL, BigQuery, Redshift, Databricks, Spark (PySpark)

Projects & Working Papers

A/B Testing with Uplift Modeling and Causal Decomposition

2025/11

- Implemented S/T/X/R meta-learners achieving 0.1753 Qini on 13.9M user RCT (96.4% noncompliance); decomposed CATE via instrumental variables to enable differentiated bidding strategies
- Quantified tradeoff: 10% ranking cost for strategic bid optimization

Multi-Target Stacking: A Novel Ensemble Framework

2025/9

- Developed ensemble framework using auxiliary targets with 57% improvement over standard stacking on 14M+ financial time series records
- Validated across 12 walk-forward folds maintaining stable 95.6% PR-AUC despite distribution shifts

Family Structure and Young Adult Child's Geographic Mobility

2023/3

- Built structural discrete choice model on NLSY97 panel data (~9,000 individuals) using maximum likelihood estimation to decompose migration decisions into preference and cost components
- Identified 12% reduction in migration probability for two-parent households, driven by 35% higher home premium rather than financial constraints

Compulsory Schooling and Locus of Control: Evidence from China

2021/2

- Applied difference-in-differences IV strategy exploiting China's 1986 Compulsory Schooling Law variation across 25 provinces (16,500+ individuals, CFPS data)
- Estimated 0.84 SD increase in internal locus of control from completing junior high school, with effects concentrated among policy compliers (females, rural residents)

Experience

Taiwan Assessment and Evaluation Association, Taiwan

Data Science Consultant

2024/9-Current

- Built time series regression pipeline for anomaly detection across 1,600 department assessments annually, identifying outlier patterns in accreditation metrics

Michigan State University, East Lansing, Michigan

Graduate Researcher & Teaching Assistant

2018/9-2024/6

- Conducted causal inference research (IV, DiD, MLE) on large-scale public surveys
- Excellence in Teaching Award (2022)

Institute of Labor Economics, Bonn, Germany

Research Assistant

2017/1-2018/7

Education

PhD Candidate (ABD) in Economics, Michigan State University, MI

2024/6

MSc in Economics, University of Bonn, Germany

2018/6

BSc in Quantitative Finance, National Tsing Hua University, Taiwan

2014/6