

# Chia-Hung Kuo

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## Technical Skills

Programming: Python, SQL, Stata, R

ML/DS Libraries: 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

11/2025

- Implemented S/T/X/R meta-learners achieving 0.1753 Qini on 13.9M user RCT; 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

09/2025

- Developed a new 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

03/2023

- 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

02/2021

- 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, Taipei, Taiwan

Data Science Consultant

09/2024-Current

- Built time series regression and latent variable model for anomaly detection across 1,600 department assessments annually, identifying outlier patterns in national higher education accreditation

### Michigan State University, East Lansing, Michigan

Graduate Researcher & Teaching Assistant

09/2018-06/2024

- Conducted causal inference research (IV, DiD, MLE) on large-scale public surveys
- Excellence in Teaching Award (2022); Honorable Mention, Peter Schmidt Award (2019)

### Institute of Labor Economics, Bonn, Germany

Research Assistant

01/2017-07/2018

### Taiwanese Army, Hsinchu, Taiwan

Corporal

09/2014-09/2015

## Education

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

06/2024

MSc in Economics, University of Bonn, Bonn, Germany

06/2018

BSc in Quantitative Finance, National Tsing Hua University, Hsinchu, Taiwan

06/2014