

# Chia-Hung Kuo

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Data scientist specializing in machine learning, statistical modeling, and causal inference.

## Technical Skills

Programming: Python, SQL, Stata, R

ML & DS: scikit-learn, PyTorch, matplotlib, seaborn, XGBoost, pandas, Polars, EconML, CausalML

MLOps & Infrastructure: MLflow, Optuna, Git, Docker, AWS

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

## Projects

### 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% non-compliance); decomposed CATE via instrumental variables to enable differentiated bidding strategies
- Quantified honest tradeoff: 10% ranking cost for strategic optimization—deliverability dominates 95% of predictions, proving standard models conflate reach with response

### Multi-Target Stacking: A Novel Ensemble Framework 2025/9

- Developed novel ensemble framework using multiple auxiliary targets for error decorrelation—57% improvement over traditional stacking (95.6% vs 60.8% PR-AUC), demonstrated on financial time series binary classification (14M+ records, 2011-2025)
- Validated across 12 walk-forward folds maintaining stable 95.6 PR-AUC despite distribution shifts

## Experience

### Taiwan Assessment and Evaluation Association, Taiwan

Data Science Consultant 2024/9-Current

- Designed and built time series regression models to detect anomalous patterns in government-funded national higher education accreditation reviews

### Michigan State University, East Lansing, Michigan

Graduate Researcher & Teaching Assistant 2018/9-2024/6

- Conducted causal inference research (IV, DiD, MLE) on large-scale surveys (NLSY97, CFPS) using Python, R, and Stata
- Taught and supported economics courses; Excellence in Teaching Award (2022)

### Institute of Labor Economics, Bonn, Germany

Research Assistant 2017/1-2018/7

- Supported IZA/DFID research program funding economic studies in low-income countries; coordinated evaluation process for 100+ proposals

## Education

PhD Candidate (ABD) in Economics, Michigan State University, MI 2024/6

MSc in Economics, Michigan State University, MI 2020/3

MSc in Economics, University of Bonn, Germany 2018/6

BSc in Quantitative Finance, National Tsing Hua University, Taiwan 2014/6