Chia-Hung Kuo

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

Technical Skills

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

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