# HSU, Ke-Cheng (Clio)

(852) 6840 9753 | khsu@connect.ust.hk | github.com/cliohsu1997 | cliohsu1997.github.io

## Professional Summary

PhD candidate in Economics at HKUST with strong statistical training and 5+ years of hands-on analytics experience since 2020. Works with large proprietary datasets (e-commerce transactions and retail point-of-sale records): joins and transforms multi-table data, checks data quality, builds quantitative models, and tracks results against clear metrics through charts and written summaries delivered under fixed deadlines. Clear written and verbal communicator who structures complex ideas for non-specialists and picks up new industries and methods quickly; collaborates in Mandarin and English. Hong Kong permanent resident. Seeking Manager, Business Planning and Analytics at The Hong Kong Jockey Club (Membership and Customer Excellence).

## Education

**The Hong Kong University of Science and Technology**, Hong Kong

*Doctor of Philosophy in Economics* — Expected Graduation: June 2027

Research interests: Empirical industrial organization and digital economics.

*Master of Philosophy in Economics* — 2020–2022

CGA: 4.1/4.3.

*Bachelor of Science in Mathematics and Economics, Minor in Actuarial Mathematics* — 2015–2019

CGA: 3.9/4.3.

Awards: Dean's List (2016–2019); University Scholarship (730K HKD); Academic Achievement Medal (top 1%); Postgraduate studentship (1.5M HKD); Redbird scholarship (40K HKD).

## Experience

**Research Assistant**, National Taiwan University — 2020

- Modeled crisis intervention as regulator–creditor negotiation; derived and simulated equilibrium predictions to support policy design.

**Teaching Assistant & Lecturer**, Department of Economics, HKUST — 2020–present

- Lecturer for MSc Math Camp (4.53/5); TA for PhD and undergraduate economics (avg 4.72/5).

## Projects

**Inventory and Pricing under Resale Price Maintenance (RPM)** *(w/ K. Kawaguchi, HKUST; K. Kawai, U. Tokyo)*

- Built a dynamic oligopoly model of pricing and inventory under demand uncertainty and RPM, with equilibrium stockouts and unsold returns (35–40% of Japanese books printed are discarded); constructed title-by-market-by-month panels from monthly bookstore POS data (deliveries, sales, returns; tens of billions of records across 1,000+ stores), linked via standardized ISBNs and merged with local demographics and detailed title-level information scraped from Amazon in Python.
- Estimated demand and supply with instrumental variables (2SLS) and Hausman-style price instruments; validated the estimator with Monte Carlo on simulated equilibria; selected controls with LASSO and panel fixed effects; implemented iterative equilibrium simulation in C++.
- Revealed that the classical static model overestimates marginal cost by ∼20% when ignoring dynamic demand uncertainty and inventory decisions; uncovered stockout-driven intertitle and intertemporal substitution (not inter-regional) through weekly descriptive statistics, regressions, and figures.

**Return Policy Design in E-Commerce**

- Built and estimated a structural model of purchase, return-shipping-insurance take-up, and return decisions under monopoly pricing, using within-retailer switches between automatic provision and selective adoption of return-shipping insurance on Taobao (2017–2023; ∼62M RMB revenue; six apparel categories; ∼20–30% return rates); scraped and OCR-digitized product attributes in Python.
- Developed a reproducible, version-controlled estimation pipeline on AWS and HPC/SLURM (Python, R, C++); cleaned and linked orders, prices, insurance, and returns on transaction keys; transformed data into analysis-ready panels; recovered category-specific demand, consumer fit uncertainty, and return responses via GMM; accelerated Monte Carlo and optimization in C++; validated policy rankings (seller profit, consumer surplus, social welfare) with bootstrap inference.
- Uncovered a purchase–return efficiency trade-off: a stricter return policy curbs inefficient ex-post returns but raises prices and can exclude ex-ante efficient purchases; demonstrated that automatic provision expands valuable purchases in high-margin categories while selective adoption outperforms it by ∼15–30 pp of first-best welfare in thinner-margin categories, and that a partial return-penalty discount (discounted price + ∼10–15% restocking fee) attains ∼75–78% of first-best welfare outside dresses.

## Skills

**Languages:** Mandarin (Native), English (Fluent), Cantonese (Basic).

**Technical:** Python, R, Stata, C++, Excel, LaTeX, AWS, HPC/SLURM; multi-table joins and data transformation; MLE, GMM, minimum distance, EM algorithm, bootstrap.

**References:** Kei Kawai (UTokyo; Compass Lexecon), Kohei Kawaguchi (HKUST; UTokyo Econ Consulting), Pak Hung Au (HKUST).