HSU, Ke-Cheng (Clio)

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Professional Summary

PhD candidate in Economics at HKUST with strong statistical training in empirical industrial organization and market structure. Builds Python research pipelines; collects/validates large financial and market-style datasets; develops and tests structural/statistical models with Monte Carlo and bootstrap; uses AI daily for coding and research automation with verified outputs; writes clear technical documentation. Clear written and verbal communicator who structures complex ideas for non-specialists and delivers careful work to deadlines; collaborates in Mandarin and English. Hong Kong permanent resident. Seeking Junior Quantitative Research Analyst role; available as early as February 2027.

Education

The Hong Kong University of Science and Technology, Hong Kong

Doctor of Philosophy in Economics Expected Graduation: June 2027 (available as early as February 2027)

Empirical industrial organization; structural modelling; GMM; simulation; large-data computation.

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

- Built MATLAB model of interbank crisis dynamics; analyzed positions, liquidity stress, and cascade risk across a financial network.

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); explain quantitative methods clearly; write reproducible teaching materials.

Teaching Assistant Coordinator, Business School, HKUST 2025–2026

- Coordinated technical deliverables and kept documentation consistent before release.

Hall Tutor, UG Hall I, HKUST 2024–present

- Mediated resident conflicts; led orientation, workshops, and career talks.

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++.
- Compared the dynamic model against the classical static model and showed the static version overstates marginal cost by ∼20% once demand uncertainty and inventory decisions are ignored; uncovered stockout-driven intertitle and intertemporal substitution through weekly descriptive statistics, regressions, and figures.

Return Policy Design in E-Commerce *(Sole-authored Job Market Paper)*

- Sole-authored Ph.D. structural industrial-organization study: built and estimated a model of purchase, return-shipping-insurance take-up, and return 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.
- Collected, cleaned, validated, and maintained a multi-source transaction panel; estimated structural demand/return models via GMM; Monte Carlo and bootstrap for model checking and inference; built reproducible Python / R / C++ research stack on AWS/HPC; AI-assisted coding with tests; documented methods and results.
- Documented a purchase–return efficiency trade-off and showed that a menu pairing a discounted price with a moderate (∼10–15%) restocking fee raises social welfare by about 2 million RMB (∼5%) and seller profit by about 1.2 million RMB relative to status-quo insurance policies.

Skills

Languages: Mandarin (Native), English (Fluent), Cantonese (Basic).
Quantitative: Probability, statistics, structural modelling, GMM, 2SLS, Monte Carlo, bootstrap, LASSO, simulation.
Programming: Python, R, C++, MATLAB, Stata, Excel; AWS, HPC/SLURM; research automation.
AI: Daily use for coding, analysis, and workflow improvement; outputs verified by tests.
References: Kei Kawai (UTokyo; Compass Lexecon), Kohei Kawaguchi (HKUST; UTokyo Econ Consulting), Pak Hung Au (HKUST).