Chen Tang

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Email: ChenTang@link.cuhk.edu.cn **Website**: ChenTang01.github.io

Research interests

Operations Management
Revenue Management & Dynamic Pricing
Empirical OM & Data-Driven OM

Education

The Chinese University of Hong Kong, Shenzhen Shenzhen, China
M.Sc. in Data Science 2023 – 2025 (expected)

Shanghai University of Finance and Economics Shanghai, China
B.Mgt. in Business Analytics 2019 – 2023

Research Experience

Algorithmic Collusion of Dynamic Pricing: Past, Present and Future

with Janusz Meylahn and Xavier Lambin Working Paper

Algorithmic collusion emerges when companies utilize reinforcement learning and other AI-driven algorithms to engage in pricing competition, resulting in supra-competitive market prices. In this survey, we explore the development and potential future research directions of algorithmic collusion in competitive dynamic pricing.

The initial solo version is available: PDF, SSRN, Tutorial, Presentation

Regulating Asymmetric Competition of Platform Owners: Evidence from the Korean Accommodation Market

with Sung Kwan Lee and Liu Ming Working Paper

This paper empirically examines the causal effect of antitrust regulation on third-party firms that were under asymmetric advantages from the platform owner in the Korean accommodation market. Using the Differences-in-Differences approach, we identified that antitrust regulation has significantly improved the operational conditions of third-party firms within the Korean accommodation market. We provide suggestions and insights on the regulation of the platform operation.

Initial results were present on CSAMSE 2024, Xiamen, July 2024

Pricing Competition under Multinomial Logit Demand with Hidden Inventory Information

with Zizhuo Wang Work in Progress

While price competition with public inventory information has been resolved, the scenario where capacity information is opaque is less understood. In this research, we delve into price competition under the MNL model, where firms can infer the competitor's capacity based on their own demand. The solutions of dynamic programming reveal that firms may experience less profits in an opaque capacity setting depending on the demand-to-capacity ratio.

Research snapshot is available: PDF

Assortment Competition with Multiple Platforms

with Zizhuo Wang Work in Progress

Most consumers do not purchase airline tickets directly from an airline's website; instead, they use online booking platforms to select from products offered by various airlines. Airlines provide different assortments to multiple platforms, which, in turn, charge commission fees during the transaction process. A platform may adopt business practices that offer preferential treatment to airlines displaying products exclusively on its platform. In this research, we develop a model to investigate how such business practices can influence the competitive equilibrium of the game.

Prior model setting is available: PDF

Cross-Channel Marketing on E-commerce Marketplaces: Impact and Strategic Budget Allocation.

under supervision of Qiyuan Deng Research Assistant

This paper optimizes the budget allocation strategy based on a demand function estimated from empirical data, with the core of the data-driven process being the accurate estimation of the demand function. During my research assistant experience, I have conducted data analysis, read related literature, and sought out and tested potential instrumental variables to reduce the bias of parameter estimation.

Working snapshot is available: PDF

Referees

Prof. Guillermo Gallego
X.Q. Deng Presidential Chair Professor
School of Data Science,
Chinese University of Hong Kong, Shenzhen
Email: gallegoguillermo@cuhk.edu.cn

Prof. Zizhuo Wang
Professor and Associate Dean
School of Data Science,
Chinese University of Hong Kong, Shenzhen
Email: wangzizhuo@cuhk.edu.cn

Prof. Liu Ming
Associate Professor
School of Management and Economics,
Chinese University of Hong Kong, Shenzhen
Email: mingliu@cuhk.edu.cn

Miscellaneous

I'm constructing my knowledge database, summarizing all my knowledge in different domains into one single book.