Yu-Shiou (Willy) Lin

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Education

Columbia University — **Sep. 2024 (Ongoing)**
PhD in Industrial Engineering and Operations Research, Advisors: Garud Iyengar and Kaizheng Wang — *New York, USA*

London School of Economics and Political Science — **Jun. 2020**
Master of Science in Econometrics and Mathematical Economics with Distinction — *London, United Kingdom*

National Taiwan University — **Jan. 2019**
Bachelor of Business Administration in Finance, Double Major in Mathematics with GPA 4.03/4.30 — *Taipei, Taiwan*

Work Experience

QuantumBlack - McKinsey & Company — **Mar. 2022 – Jul. 2023**
Data Scientist — *Taipei, TW*

- Improved long-term component shortage prediction precision 3x by implementing **Logistic Regression** and **Decision Tree** based on demand, commitment rate and component commonality etc. for Consumer Electronic Manufacturer
- Reduced **50%** final goods' Day of Inventory by setting statistical replenish formula and running stock level simulation
- Conduct **Generative AI impact analysis**, outline technical stacks and design use cases for multiple industries
- Deploy client solutions on **Kubernetes**, such as data cleaning, model training/inferencing, dashboard creation etc.

University of Chicago Booth School of Business — **Aug. 2020 – Jan. 2022**
Research Professional, Supervisors: Anthony Zhang and Eric Budish — *Chicago, IL*

- Conducted spatial analysis with advanced regression method, **General Additive Model (GAM)**, on US's property data to investigate housing price and improve variance stability, and repeatedly used in 2-3 empirical Economic papers
- Developed R package to **evaluate GAM's feature importance** with permutation method, a feature selection method

Research Papers and Projects

Model-Free Assessment of Simulator Fidelity via Quantile Curves | Garud Iyengar, Kaizheng Wang

- Developed a model-free framework that constructs quantile envelopes $V(\alpha)$ bounding sim-to-real gaps without parametric assumptions and provides finite-sample and uniform-in-level coverage guarantees
- Demonstrated applications of our methodology to large-language-model (LLM) survey simulators, where the quantile-envelope shape enables interpretable, risk-aware comparisons across simulators

Benfits and Costs of Adaptive Sampling | Iavor Bojinov, David Ham

- Proved a finite-sample, closed-form sufficient condition under which a simple two-stage adaptive allocation achieves lower total MSE than uniform sampling
- Designed the $\pi - \rho$ policy which is simple and practical, and balances best-arm learning with inference-aware sampling
- Established rate-optimality of $\pi - \rho$ policy: proved the mixed policy achieves the oracle $\Theta(T^{-1/3})$ objective rate (matching optimal fixed allocation) and stability guarantees

Teaching Experience

IEOR E4404 - Simulations — **Spring 2025**

IEOR E4404 - Simulations (Also served as guess Lecturer) — **Fall 2025**

Skills / Honors

Languages: Python, R, SQL, Stata, SAS, MATLAB, HTML & CSS
Honors: National Taiwan University Presidential Award * 2