Yu-Shiou (Willy) Lin

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Education

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*

Relevant Coursework

- Machine Learning
- Computational Content Analysis
- Computational Mathematics
- Computer Programming
- Econometric Analysis
- Probability Theory
- Real Analysis
- Quantitative Analysis
- Game Theory

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, Supervisor: 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
- Implemented SQL and SAS to build **ETL process** that integrates billion rows of panel data from disparate data source
- Pinned down a **2% - 60% implicit security tax** on crypto mining due to cryptocurrency 51% attacks and showed that escrow periods is an ineffective security measure by building Monte Carlo Simulation with R

National Taiwan University **Sep. 2017 – Aug. 2019**
Research/Teaching Assistant, Supervisor: Chyi-Mei Chen and Hendrik Rommeswinkel *Taipei, Taiwan*

- Gave lectures to 100+ students on probability, statistics, and game theory related to financial applications
- Literature review and proofread game-based model to determine the optimal finance instruments for startups

Working Paper

Best arm identification under Factorial Multi-arm Bandits with Confidence Sequences | Iavor Bojinov **Nov. 2023**

- Formulate large number of advertisement variations as **Multi-Arm Bandit (MAB)** and **Factorial Design** problem and identify optimal treatments by combining **Any-time Valid Confidence Intervals** and **Successive Elimination**
- Built simulations for proposed algorithms to identify **sample size required** for significant effect under different factor levels and treatment effect gaps, along with other sensitivity analysis

Projects

Funding Risk of Crypto Perpetual Contract | Collaborator: Anthony Zhang, Xinkai Wu| *Python* **May 2021**

- Constructed **dynamic game-based inventory model** to depict perpetual contracts price and underlying index time series to determine optimal funding rate for perpetual contract
- Built Monte Carlo Simulation to illustrate the risk hedgers and investors face due to funding payment

Economists Imitation Behaviour | *Python: scikit-learn, gensim, NLTK* **Mar. 2021**

- Designed NLP models to measure the novelty, transience and resonance of economists' research topics
- Web-scraped NBER to collect 30,000 econ papers as corpus and performed tokenize, stemming and lemmatization
- Performed **Word2vec** and **Latent Dirichlet Allocation** algorithm, along with information theory concepts such as Kullback–Leibler Divergence, in order to evaluate the similarity between texts

Skills / Honors

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