Yilie Huang

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EDUCATION

Columbia University Sept 2019 - Dec 2024
Fu Foundation School of Engineering and Applied Science USA
Doctor of Philosophy in Industrial Engineering and Operations Research
Advisor: Xunyu Zhou

Columbia University Sept 2017 - Dec 2018
Fu Foundation School of Engineering and Applied Science USA
Master of Science in Operations Research
Advisor: Xunyu Zhou

Zhejiang University Sept 2013-Jul 2017
Chu KoChen Honors College China
Bachelor of Science in Mathematics and Applied Mathematics (Honors Program)

The University of Hong Kong Sept 2015-May 2016
Faculty of Science Hong Kong
Exchange student

CFA Institute Since Feb 2022
CFA® (Chartered Financial Analyst) charterholder

RESEARCH NTERESTS

- Reinforcement Learning
- Stochastic Control
- Financial Engineering
- Diffusion Models

RESEARCH PAPERS

Publications

Huang, Y., Jia, Y., & Zhou, X. (2022). Achieving Mean–Variance Efficiency by Continuous-Time Reinforcement Learning. In Proceedings of the Third ACM International Conference on AI in Finance, 377-385.

Preprints

Huang, Y., Jia, Y., & Zhou, X. (2024). Mean–Variance Portfolio Selection by Continuous-Time Reinforcement Learning: Algorithms, Regret Analysis, and Empirical Study. Submitted.

Huang, Y., Jia, Y., & Zhou, X. (2024). Sublinear Regret for a Class of Continuous-Time Linear–Quadratic Reinforcement Learning Problems. Submitted.

In Progress

Huang, Y. & Zhou, X. (n.d.). Achieving Sublinear Regret in Continuous-Time Linear-Quadratic Reinforcement Learning: An Adaptive Exploration Approach. In progress.

PRESENTATIONS

Conference Presentations

Columbia IEOR Colloquium	Nov 2024
2024 INFORMS Annual Meeting	Oct 2024
2024 INFORMS Conference on Financial Engineering and FinTech	Aug 2024
2022 INFORMS Annual Meeting	Oct 2022
11th World Congress of Bachelier Finance Society	June 2022

Session Chair

2024 INFORMS Annual Meeting	Oct 2024
11th World Congress of Bachelier Finance Society	June 2022

Posters

Financial and Business Analytics Poster Session@Columbia University	Nov 2022

INDUSTRY EXPERIENCE

Tower Research Capital, Mako/Ace Trading Team — Feb 2023-May 2023
Quant Trader Intern — New York, NY, USA

- Engineered over 20,000 high-frequency factors for futures, resulting in the development of a trading strategy with a Sharpe ratio exceeding 5, showcasing strong risk-adjusted performance
- Innovated a factor selection algorithm using a stepwise-stagewise approach that outperformed the existing system; Created corresponding C++ packages, leading to its integration into the core pipeline, and enhancing overall efficiency

Millennium Management, Equity Derivatives Quant Team — Jun 2022-Aug 2022
Quant Researcher Intern — New York, NY, USA

- Designed Asian option pricing algorithms by solving 2-D PDEs via Alternating Direction Implicit and Strang Splitting techniques, thereby ensuring convergence and stability, as well as outperforming Monte Carlo in accuracy and efficiency
- Implemented the algorithms in production-grade codes via C++ and incorporated diverse features, including continuous- / discrete-averaging settings, American exercise style, Local-Volatility, and Buehler's dividend framework

LevelHead Capital, LLC, Quantitative Value Investing — Jan 2018-Jul 2018
Quant Trader Intern — New York, NY, USA

- Implemented deep learning models like CNN, LSTM, GRU to predict stock price, which achieved accuracy of over 60%
- Extended the quantitative value investing algorithms by adding more fundamental factors; Selected the optimal combination of factors by Machine Learning techniques like Random Forest and Ridge Regression

TEACHING EXPERIENCE

Columbia University
Teaching Assistant — New York, NY, USA

- IEOR E4602, Quantitative Risk Management — Fall 2023
- IEOR 4630, Asset Allocation — Spring 2023
- IEORE 4732, Computational Methods in Finance — Spring 2022
- IEORE 4701-001, Stochastic Models for Financial Engineering — Fall 2021
- IEORE 4701-002, Stochastic Models for Financial Engineering — Fall 2021
- IEOR 4524, Analytics in Practice: MSBA Capstone — Spring 2021
- IEOR 4100, Probability, Statistics and Simulation — Fall 2020
- IEOR 4101, Probability, Statistics and Simulation — Fall 2020
- IEOR 4707, Financial Engineering: Continuous Time Models — Spring 2020
- IEOR 4735 Structured & Hybrid Products — Fall 2018