

# Yu Wang

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## EDUCATION

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- **University of British Columbia** Vancouver, CA  
*Ph.D; Mathematics* *Expected Enrollment: Aug 2024*  
*Research interests: Deterministic Global Optimization, Optimal Decision Tree*
- **Shanghai Jiao Tong University** Shanghai, CN  
*BBA; Major in Business Data Science; Minor in Finance;* *Sep 2019 - Jun 2023*  
*Courses: Management Science, Machine Learning, Artificial Intelligence, Natural Language Process, Reinforcement Learning.*

## SKILLS SUMMARY

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- **Languages:** Python, Julia, C++, MATLAB
- **Tools:** Docker, GIT, JIRA, Linux, Bash, Nix

## EXPERIENCE

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- **Cao Research Group** Remote  
*Research Assistant* *Jul 2023 - Current*
  - **Optimization in Machine Learning:** Engaged in developing and refining optimization algorithms for machine learning applications. Focused on enhancing algorithmic efficiency and scalability in large data environments.
  - **Data Analysis and Model Development:** Conducted comprehensive data analysis and developed predictive models to address complex challenges in various domains.
- **Egret Quant** Shanghai, CN  
*Reinforcement Learning Researcher (Intern)* *Oct 2022 - Mar 2024*
  - **DRL for Portfolio Management:** Building end-to-end portfolio management strategies using deep reinforcement learning algorithms. Using State-Action embedding methods to solve the problems caused by the large number of possible states and actions.
  - **Forecasting Models:** Conducting research on enhancing the performance and robustness of deep learning models in predicting daily returns for A-share stocks.
  - **Alpha-Mining Framework:** Constructing and combining alpha factors using deep reinforcement learning to obtain a large number of factors with IC over 0.02.
- **Kafang Tech** Shanghai, CN  
*HFT Quantitative Researcher (Intern)* *Jul 2022 - Oct 2022*
  - **Volatility Prediction:** Constructing signals and models to predict high frequency volatility of commodity futures.
  - **High Frequency Market Making:** Research on high frequency market making strategies of commodity futures. Constructing simulator for maker orders and using reinforcement learning and deep learning models to get optimal actions.
- **Bright Ridge Investments** Shanghai, CN  
*HFT Quantitative Researcher (Intern)* *Jul 2021 - Jan 2022*
  - **Trading Signals:** Research and optimization of high frequency trading signals to improve the performance of high frequency signals in real trading.
  - **Spoofing Detection:** Build algorithms to detect and reject *Spoofing* transactions.
  - **Strategy Optimization:** Constructing and developing trading strategies, tracking the actual performance of strategies, and making improvements and optimizations.

## ACADEMIC PROJECTS

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- **Deep Reinforcement Learning Based Quantitative Investment:** Developed trading strategies of China A-shares using deep reinforcement learning algorithms. Built a simulated market environment and comparing the performance of different DRL algorithms. (Sep '22)
- **Deep Learning Sequence Prediction and Decision-Making Methods in Quantitative Trading:** Reproduced temporal relational ranking model(*Feng F, 2019*). Implemented an end-to-end stock selection model, capturing time series information and stock interrelationships using LSTM and GNN. (Apr '21)
- **Research of Investment Strategies for Cryptocurrency:** Optimized portfolio of cryptocurrency and maximized the Sharpe ratio of the portfolio using the latest linear merged optimization method (*Tu and Zhou, 2011, JFE*). (Oct '20)

## HONORS AND AWARDS

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- SJTU Mathematical Modeling Competition First Prize, Sep 2021
- MCM/ICM Honorable Mention, Apr 2021