HAIJIAN WU

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EDUCATION

Columbia University, Fu Foundation School of Engineering and Applied Science New York, NY
Master of Science in Business Analytics Aug 2022 - Dec 2023
GPA: 4.06/4.0, Benjamin Miller Memorial Fellowship
Skills: Hybrid Products, Derivatives Modeling, Time Series Analysis, Reinforcement Learning, Deep Learning, Optimization, Simulation

University of Michigan at Ann Arbor, College of Literature, Science, and the Arts Ann Arbor, MI
Bachelor of Science in Mathematics and Data Science Aug 2019 - May 2022
Minor in Physics and Creative Writing
GPA: 3.99/4.0, Graduation with Highest Distinction, Phi Kappa Phi, University Honors, James B. Angell Scholar
Courses: Linear Algebra; Data Mining and Machine Learning; Regression Analysis; Financial Math; Theoretical Statistics

WORK EXPERIENCE

JP Morgan Chase & Co. New York, NY
Quantitative Analytics Summer Associate Jun 2023 - Aug 2023

- Conducted a project that developed a Natural Language Processing Question Answering Model to diminish subjectivity in risk management of estimating market, credit, and operational risks, such as loss caused by business disruptions (e.g., system outage); the model adeptly extracted numerical values from 20,000 text-based event records, constructing distributions essential for Monte Carlo simulations of pivotal model features, and notably attained a 70% accuracy rate.
- Evaluated and collaborated to recalibrate a thematic financial model, successfully reducing discrepancies from $7 million at the 50% quantile to over $2 billion at the 99% quantile from one million simulations; this critical alignment with the accurate mathematical model ensures potential losses are not underestimated, providing a basis for capital allocation decisions to offset potential losses.

China International Capital Corporation, Wealth Management Shenzhen, China
Data Analyst Intern, Internet Finance Department May 2021 - Aug 2021

- Assisted six Sales & Trading teams and operating groups to analyze the profit and loss of daily strategies with regressions analysis, giving their business and financial suggestions to their strategies with data reports which indirectly made 1 million dollars in profits
- Gathered and analyzed investment data derived from CICC wealth management mobile application from 2020 to 2021 and its investors' feedback to investigate impact from markets and other competitors, and saved about 0.3 million dollars to the team
- Enhanced data authority management system based on organizational structure changes and data governance system and formulated a specific data authority application process based on different types of data applications

China Minsheng Bank Shenzhen, China
Credit Analyst Intern, Credit Department Dec 2020 – Jan 2021

• Engaged in an asset pricing and credit analysis, project for iDreamSky (valued 10 million USD), a domestic leading gaming company developing single-player mobile games and online games based on annual financial reports and industry develop in recent 10 years

RESEARCH AND ACTIVITIES

IMC Trading Prosperity Trading Competition New York, NY
Competition Participant Mar 2023 - Mar 2023

- Practiced high frequency trading strategies in money making and taking, pair trading, hedging, seasonal pattern trading (short-term and long-term), and trending following, such as volume-weighted average pricing and Stoikov's theorem for more than ten products and achieved the highest ranking at 35th place among about 8000 teams

PROJECT EXPERIENCE

Columbia University New York, NY
Researcher, Pricing of an Exotic Derivative Contract Oct 2023 - Dec 2023

- Architected financial model for a $1 million notional quanto contract linked to EUROSTOXX50, incorporating log-normal equity modeling for European market sand Hull-White short rate dynamics with Bloomberg data spanning 2018-2023 to inform simulations
- Employed Monte Carlo simulation to generate different scenarios, refining pricing estimates from $895 to $9,987 under diverse market conditions and theoretical assumptions, thus underpinning the contract's valuation with advanced stochastic techniques

EnergyLive and Columbia University New York, NY
Researcher, Forecasting of Greek Energy Market ISP2 Energy Price Jan 2023 – May 2023

- Made exploratory analysis of the feature data and time series data, implemented the LSTM model to forecast ISP2 process energy and power price in Greek electricity market, and optimized the model by hyperparameter tuning with the grid search method
- Brought forward and designed DNN-LSTM structure to model both the non-sequential data and the sequential relations based on time series data, which better assisted in the electricity and power commodity in European market with simulation

Columbia University and European Investment Bank New York, NY
Researcher, Crop Yield Prediction in United States Sep 2022 – Jan 2023

- Improved RNN-CNN models with LSTM structure for soybean data collected from 1088 counties through about 30 years to make predictions of crop yield by tuning hyper-parameters, such as activation functions, kernel size, and stride, to make optimization
- Assisted in business and financial impact of the model, such as application in pricing strategy of crop commodities by providing the forecasting of the United States crop quantity, and design the basic architecture design of GNN improvement

LANGUAGE AND IT SKILLS

- Programming: Python, C++, R, SQL, MATLAB, Excel, Machine Learning, Reinforcement Learning, Time Series Analysis
- Quantitative Skill: Financial Mathematics, Derivatives Pricing, Term Structures, Structured & Hybrid Products, Asset Management