Contact

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Top Skills

AWS Lambda
Amazon Web Services (AWS)
Quantitative Research

Certifications

Option 201 Course certification

Publications

The Black-Scholes Model Analysis and Comparison

Chloe(Zhixin) Zhang

Quantitative Developer | AI Engineer | Quantitative Analyst
Boston, Massachusetts, United States

Summary

Portfolio of AI engineering: https://chloe-zhang-portfolio.vercel.app/ Quantitative Developer at Adaptive Investment Solutions. I build structured note pricing & risk analytics, portfolio optimization, and AI-assisted hedging—and I ship them into production via API design and full-stack delivery.

Experience

Adaptive Investment Solutions, LLC
1 year 8 months

Associate Quantitative Analyst / Quantitative Developer
March 2025 - Present (11 months)
Boston, Massachusetts, United States

- Led structured note pricer implementation, including PDE modeling, API design, and full-stack integration
- Built portfolio optimization, risk management, and AI hedging modules
- Presented pricing models and system demos to institutional clients
- Supervised and mentored interns, managing project timelines and ensuring consistent progress

Quantitative Research Analyst Intern
June 2024 - March 2025 (10 months)
Boston, Massachusetts, United States

- Completed portfolio allocation using various optimization methods and objective functions, followed by implementing risk contribution partitioning and Black-Litterman Model
- Employed explicit, implicit, Crank-Nicolson, ADI and Monte-Carlo methods to price various structured notes
- Research on AI hedging

Boston University Wheelock Educational Policy Center
Data Science Intern
May 2024 - September 2024 (5 months)
Boston, Massachusetts, United States

• Utilized LSTM, target center-based LSTM, Attention-based TC-LSTM and keyATM model for keyword analysis
• Enhanced feature extraction with TF-IDF and Skip-Gram Word2Vec models, and performed topic modeling with LDA, NMF, and BERTopic to uncover relationships between topics and disability types
• Conducted lexical complexity analysis for the text data and visualized the results using various types of plots
• The outcomes have been successfully applied to projects for the Indiana government

Shennong Capital
Quantitative Research Intern
January 2023 - May 2023 (5 months)
Beijing, China

• Built up CTA strategy depository with high frequency contract data, including both trend following strategies and multi-factor strategies and finally combine strategies testing with different metrics
• Employed OLS regression to find the high-frequency factor explaining the activity of the economy and compared this factor with low frequency index like PMI to find the better one describing the trend of economy

TokenInsight Inc.
Quantitative Research Intern
October 2022 - January 2023 (4 months)
Shanghai, China

• Implemented different kinds of strategies into Bitcoin 1-min bar data, 5-min bar data, and high frequency tick data
• Designed adjusted RSI strategy for Bitcoin to obtain a more stable signal and achieved a Sharpe ratio greater than 2

AssetPRO
Quantitative Strategy Research Intern
June 2022 - September 2022 (4 months)
Shanghai, China

• Implemented numerous strategies for CTA and refined the Bollinger strategy, achieving a 15% annualized excess return. This strategy has been adopted by the company for implementation in the actual stock market
• Employed a hierarchical clustering model to categorize Shenwan industries into four sectors and identified proxy variables for cash flow trends, achieving a 13% excess return

Zhiyuan Investment
Quantitative Strategy Research Intern
January 2022 - June 2022 (6 months)
Beijing, China

• Implemented CSI 1000 Index Enhancement Strategy development framework including data preprocessing, factor statistical analysis, industry market value neutral test, T-test, IC test, and risk model analysis
• Performed single factor analysis and score individual stocks with one-year factor return. Constructed an asset portfolio and performed backtesting on the JointQuant platform
• Utilized LSTM model and constructed factor for a 3-5 trading day and 30-60-minute income forecast

Guotai Junan Securities Co., Ltd
Financial Engineering Intern
December 2021 - January 2022 (2 months)
Shanghai, China

• Studied papers pertaining to machine learning stock selection, including the construction of models and the analysis of results; reproduced machine learning related models
• Analyzed the Lasso model and Ridge regression model and presented insights into the model and suggestions for improvement

Dongxing Securities Co., Ltd.
Financial Engineering Intern
September 2021 - December 2021 (4 months)
Beijing, China

• Analyzed literature regarding factor mining models and replicated them in Python/Matlab
Developed general and in-depth reports on financial engineering, including analysis of funds as well as an understanding of industry and some machine learning strategies
• Prepared summaries of fund manager meetings and applied Python to match and analyze funds based on different indicators

GfK - An NIQ Company
Data Analyst Intern
July 2021 - September 2021 (3 months)

• Performed data matching and programming through the use of VBA, SQL, and other programming languages; processed data through Excel and Access;

cleaned and controlled data, including year-on-year comparisons and trend analysis

- Researched IT products to determine their market trends and conducted business data analysis

Education

Questrom School of Business, Boston University

Master's degree, Financial Mathematics · (August 2023 - January 2025)

Xiamen University

Bachelor's degree, Physics & Mathematical finance · (September 2019 - June 2023)

University of California, Berkeley

visiting student, Data Science & Computer Science · (January 2022 - May 2022)

University of Cambridge

Research Assistant, Financial Mathematics · (January 2021 - June 2021)

Peking University

visiting student, Physics · (August 2021 - August 2021)