

Guangqi Li

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EDUCATION BACKGROUND

Southwestern University of Finance and Economics

Chengdu, China

- Bachelor of Economics in *Financial Mathematics (Financial Services and Quantitative Analysis)* (Expected)

2021.09–2025.06

- GPA: 4.3/5.0

- Joint-established Program in collaboration with the University of Delaware

University of Delaware

- Bachelor of Science in *Finance (Financial Mathematics)* (Expected in June 2025)
- GPA: 4.0/4.0
- Minor in *Business Analytics*

INTERNSHIP EXPERIENCES

Guotai Junan Securities

Shanghai, China

Financial Engineering Group Intern

2024.01-04

- Designed and executed a Smart Beta strategy, selecting factors like dividend and low volatility for analysis against the CSI Total Index, outperforming the market benchmark by 5% through data optimization techniques
- Implemented a stock selection strategy for CITIC Pharmaceutical using a Fama-Macbeth regression, optimizing factors like PE and ROE, enhancing model accuracy with an information ratio of 1.8732 and a Sharpe ratio of 1.3919
- Developed a polynomial-based multi-factor Alpha strategy, improving stock return predictions through nonlinear transformations and achieving internal and external information ratios of 2.0 and 1.56 respectively

Cinda Securities

Shanghai, China

Financial Engineering Team Intern

2023.07-2023.11

- Developed a risk budget-based asset allocation backtesting framework using Pandas, NumPy, and SciPy, achieving an annualized return of 5.92% and a Sharpe ratio of 1.19, while maintaining a maximum drawdown at 5.80%
- Established a single-factor testing framework using Pandas, NumPy and connected to Juyuan and Wind databases via cx_Oracle and WindPy API. Improved factor analysis through outlier removal, standardization, and market value neutralization, evaluating performance indicators like Sharpe ratio and IC
- Implemented a multi-factor model with rolling training and backtesting, generating factors using operators like MA and STD, and synthesized them into a comprehensive factor for strategy testing. Enhanced strategy analysis with performance metrics and data visualization, addressing trading costs and market cap adjustments

Huachuang Securities Research Institute

Shanghai, China

IT Industry Research Group Intern

2023.04-2022.07

- Wrote financial briefs for listed companies in the computer industry, analyzing their financial performance and business progress to support adjustments to the stock pool and investment recommendations
- Conducted statistical analysis and visualization of iFlytek's procurement order data using Tableau, creating trend charts and regional heat maps to reveal market dynamics and product sales trends. Successfully identified the Eastern coastal regions as key growth areas, providing a basis for precisely targeted marketing activities and resource allocation

The People's Bank of China

Chengdu, China

Monetary and Foreign Exchange Department Intern

2022.02-2022.12

- Monitored and compiled key report summaries on digital currency policies from global central banks and financial institutions to provide accurate and timely information support for internal policy analysis
- Analyzed digital currency strategies of major central banks and wrote periodic analysis reports to introduce global digital currency trends and developments

RESEARCH EXPERIENCES

Coauthor, The Power of Satellite Imagery Data in Credit Scoring: A Spatial Analysis of Consumer Loans

2024.07-present

Guided by Prof. Zhiyong Li from Southwest University of Finance and Economics

- Utilized Lending Club data from the U.S. P2P lending market, applying AUC to extract spatial metrics (nighttime light, temperature, precipitation) at the 3-digit ZIP code level to support more accurate default risk prediction
- Created indices for extreme weather conditions, augmenting credit scoring models with new spatial insights and using AUC as a binary classification measure
- Explored the impact of spatial information on credit models across various machine learning frameworks (XGBoost, CatBoost, LightGBM), comparing and synergizing with macroeconomic variables, and investigating the cumulative effects of spatial factors over time
- Results indicated that spatial factors cumulatively enhanced model robustness, with a more significant impact on predicting credit risk than macroeconomic variables, confirming the time-accumulated benefits of spatial data in credit scoring

Research Member, Research on Optimization of Multiclass Customer Behavior Prediction Model Based on Focal Loss and SHAP Analysis

2024.05-present

Guided by Prof. Feng Shen from Southwest University of Finance and Economics

- Conducted a multiclass prediction task on customer repurchase intentions using LightGBM and the 2023 Sichuan College Students Fintech Modeling Competition dataset, incorporating Cohen's Kappa as a key metric for accuracy assessment in multiclass settings
- Enhanced prediction accuracy on imbalanced data by integrating a multiclass focal loss function and Particle Swarm Optimization (PSO) for hyperparameter tuning
- Applied SHAP analysis and feature importance scoring to derive new, economically relevant features, improving model interpretability and predictive effectiveness
- Results demonstrated that the optimized LightGBM model outperformed traditional approaches in identifying customer repurchase patterns, with impactful features (e.g., recent transaction frequency) offering valuable insights for commercial banks targeting active customers

Research Member, Research on Enhancing Portfolio Performances through LSTM and Covariance Shrinkage

2023.01-04

Guided by Prof. Miquel Noguer Alonso from New York University

- Predicted stock returns using an LSTM model, reduced covariance matrix estimation errors using shrinkage estimators, and optimized stock portfolios using the Mean-Variance Optimization (MVO) model, resulting in a notable increase in risk-adjusted returns
- Integrated stock price predictions and shrinkage techniques within a Mean-Variance Optimization (MVO) framework, dynamically optimizing portfolio weights through Monte Carlo simulation, leading to improved risk-adjusted returns

- Backtesting on actual return data revealed that the enhanced portfolio achieved higher cumulative returns and a better Sharpe ratio, and lower maximum drawdown compared to the S&P 500 index and equal-weight strategies, validating the effectiveness of the improved Mean-Variance model with LSTM and covariance shrinkage in optimizing stock market portfolios

TEACHING ASSISTANT, LEADERSHIP AND COMPETITION EXPERIENCES

Teaching Assistant, Machine Learning for Business – 24F MISY331

2024.09-2024.11

- Conducted weekly office hours, explaining data processing and visualization tools such as Numpy, Pandas, and Matplotlib, and assisted students with understanding and implementing supervised learning algorithms like regression, classification, and ensemble learning. Provided in-depth guidance on machine learning concepts and Python programming, helping students grasp complex course content and solve programming challenges
- Organized and led interactive coding sessions, teaching students how to use GitHub for version control and project management in real-world projects. Instructed on developing and deploying data-driven web applications using Streamlit, facilitating an end-to-end workflow from data analysis to visualization

Team Member, Home Credit - Credit Risk Model Stability Competition (Achieved 16nd place out of 3856 teams)

2024.02-2024.05

- Enhanced large-scale data processing efficiency using Polars and Pandas, improved data loading, and implemented custom feature transformations to remove high-missing-value and low-information features. Designed date conversion and time feature extraction strategies to strengthen the model's time series analysis capabilities
- Trained models using CatBoost and LightGBM, fully leveraging their strengths in handling different data types and features, ensuring prediction stability. Designed and implemented an ensemble voting model to merge predictions from multiple models, improving overall robustness and accuracy

Team Leader, Optiver - Closing Price Prediction Competition (Achieved 152nd place out of 4436 teams)

2023.09-2023.12

- Conducted feature engineering on the dataset, extracting meaningful economic indicators like VWAP, price momentum, liquidity imbalance, and bid-ask spread. Utilized sliding window techniques for rolling statistical features to capture market volatility trends, enhancing feature generation speed and memory management using numba and Polars
- Used LightGBM as the core model for regression tasks, incorporating custom cross-validation strategies to prevent data leakage and ensure robustness in time series prediction. Introduced a TensorFlow-based MLP model to explore complex nonlinear relationships and enhance model adaptation to complex data, which included batch normalization, ReLU activation, and Dropout regularization to boost model generalizability and robustness

Team Leader, Higher Education Press Cup National University Math Modeling Competition - First Prize in Sichuan Province

2023.09

- Developed and implemented a geometric and optimization model for multibeam and seabed topography measurement, calculating coverage and width accurately using Taylor expansion along with single and multi-objective optimization techniques.
- Programmed and solved the model using Python, MATLAB, and Lingo with Gurobi optimizer, optimizing seabed slope and survey line layouts to minimize total survey line length.

President, SWUFE Financial Modeling Association

2021.10-2024.06

- Competed in the 2022 Sichuan Province University Student Fintech Modeling Competition, and applied machine learning models such as random forest and XGBoost to financial data analysis
- Hosted the Python programming training within the association, and enhanced skills in Numpy and Pandas in terms of data manipulation and feature engineering

Project Team Leader, Virror, College Psychological Service System Empowered by Virtual Reality

2021.09-2023.06

- Led the team to participate in the Guanghua Entrepreneurship Competition, and organized the planning of developing a virtual reality psychological service system for college students based on the Unity platform
- Built a virtual reality psychological sandbox using the Unity platform, and developed virtual reality scenes for psychological treatment for anxiety and obsessive-compulsive disorder

ADDITIONAL INFORMATION

- Language: Mandarin, English
- Quantitative Skills: Python, R, SQL, Gurobi, Lingo, MATLAB, Excel, Wind Financial Terminal, RiceQuant Software Development Kit
- Interests: Music, Photography

SCHOLARSHIPS AND AWARDS

- 2024 Distinguished SWUFE-UD Joint Educational Institute Student (Sep 2024)
- First-Class Undergraduate Academic Scholarship, Southwestern University of Finance and Economics (Second Semester, 2023-2024)
- Gold Medal, Home Credit - Credit Risk Model Stability Competition (May 2024)
- Silver Medal, Optiver - Closing Price Prediction Competition (Mar 2024)
- First Prize, Sichuan Province, National College Students Mathematical Modeling Contest (September 2023)
- Third Prize, Guanghua Entrepreneurship Competition, Southwestern University of Finance and Economics (June 2023)
- Second-Class Undergraduate Academic Scholarship, Southwestern University of Finance and Economics (Second Semester, 2022-2023)
- Innovation and Entrepreneurship Scholarship, Southwestern University of Finance and Economics (Second Semester, 2022-2023)
- Research and Innovation Scholarship, Southwestern University of Finance and Economics (Second Semester, 2022-2023)
- Second-Class Undergraduate Academic Scholarship, Southwestern University of Finance and Economics (First Semester, 2022-2023)
- Meritorious Student, Southwestern University of Finance and Economics (2022-2023 Academic Year)
- Future Elite Scholarship, Delaware Academy of Data Science, SWUFE (2021-2022 Academic Year)
- SWUFE Innovation Talent Scholarship, Delaware Academy of Data Science (2021-2022 Academic Year)
- Third Prize, Guanghua Entrepreneurship Competition, Southwestern University of Finance and Economics (June 2022)
- Innovation and Entrepreneurship Scholarship, Southwestern University of Finance and Economics (Second Semester, 2021-2022)
- Second-Class Undergraduate Academic Scholarship, Southwestern University of Finance and Economics (Second Semester, 2021-2022)
- Second-Class Undergraduate Academic Scholarship, Southwestern University of Finance and Economics (First Semester, 2021-2022)