Yifan **Li**

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Education

University of Connecticut
Connecticut, USA

PhD in Statistics
Sep 2018 - Sep 2023

- **Coursework:** Analysis of Survival Data, Bayesian Data Analysis, Computational Method for Optimization, Financial Data Mining, Bayesian Decision, Applied Multivariate Analysis, Linear Statistical Model

University of Wisconsin - Madison
Wisconsin, USA

Master in Statistics
Sep 2016 - May 2018

- **Major GPA:** 3.87/4; **Overall GPA:** 3.77/4
- **Coursework:** Survival Analysis, Stochastic Modeling, Classification and Regression Tree, Statistical Method, Mathematical Statistics, Machine Learning, Multilevel Models, Design of Experiments

Nanjing University
Jiangsu, China

Bachelor in Statistics
Sep 2013 - Jun 2017

- **Coursework:** Mathematical Analysis, Higher Algebra, Discrete Mathematics, Ordinary Differential Equation, Partial Differential Equation, Function of Complex Variable, Stochastic Process, Real Analysis
- **Award:** Awarded People Scholarship

Work Experience

Quantitative Trading Book in Ernst & Young U.S. LLP
New York, USA

Senior Consultant
Oct 2023 - Present

1. Derivatives Pricing Algorithm Project
   - Led the modular redesign of derivatives pricing algorithm by decomposing it into service class and analysis units.
   - This architecture ensured high decoupling of coding, enabling independent updates to each component without affecting the overall system, significantly reducing redundancy and enhancing maintainability.
   - Designed and implemented robust unit testing frameworks, improving system debug reliability by proactively identifying potential errors.
2. Equity Derivatives Pricing Algorithm Enhancement
   - Improved the pricing algorithm of equity derivatives by shifting from a market-based risk model to an underlying location-based risk analysis, enabling a more accurate and interpretable pricing framework.
   - Combine advanced machine learning techniques, such as LSTM, random forest models with traditional MCMC methods to price derivatives, enabling the pricing of complex toxic options with more than three underlying.
3. Counterparty Credit Risk Monitoring Using SFT VaR-Based Models
   - Employed SFT VaR-based models to calculate and monitor Counterparty Credit Risk.
   - Interpreted complex data and model results to deliver clear insights to stakeholders, including cross-disciplinary teams and non-technical audiences.
   - Continuously updated model parameters in line with evolving market data, ensuring the models reflect current market conditions and deliver accurate risk assessments.
4. Optimization of American Options Pricing
   - Applied the American Monte Carlo (AMC) method to price American options, replacing the computationally intensive Monte Carlo over Monte Carlo method. This optimization reduced the computational complexity from $O(n^2)$ to $O(n)$, significantly improving pricing speed and saving considerable computational resources.

Bank of China International Holdings Limited
Shanghai, China

Securities Analyst Assistant (intern)
Jun 2021-Sep 2021

- Focused on battery and new energy industry. Predicted the short- and long-term performance of stocks of related companies based on time series model with a spike-and-slab error.
- Adjusted the prediction under a multinomial model based on the performance of correlated companies and avoided making an over-optimistic forecast compared with previous model.

HUATAI SECURITIES CO., LTD.HTSC
Jiangsu, China

Data Analyst (intern)
Jul 2017-Sep 2017

- Unsupervised screened visitors with a strong desire to buy products based on their records on company's APP.
- Cleaned and reshaped the 17 million visitor records by summarizing operations from the same visitor.
- Extracted useful variables by PCA (principal component analysis) method.
- Divided visitors into five groups by K-means methods and assigned visitors labels by their group.
- Fitted a decision tree with labeled data which could tag new visitor within 20 seconds while the target is 1 min.