Yizheng (Andy) Lu

Personal Email: andyluyzcareer@gmail.com | University Email: yizheng.lu@kellogg.ox.ac.uk
Tel: (+44) 07598349541 | LinkedIn: www.linkedin.com/in/yizhenglu

EDUCATION

University of Oxford — Oxford, UK
M.Sc. in Mathematical and Computational Finance — Sep 2025 - Present
- Courses: Stochastic Calculus, Financial Derivatives, Numerical Methods, Monte Carlo Simulation, Financial Computing with C++

University of Liverpool — Liverpool, UK
B.S. in Mathematics (GPA: 91/100, First Class Honour, ranked 1/320) — Sep 2021 - Jul 2025
- Award: Willis Prize in Mathematics (top 1%), Exchange Program Excellence Scholarship (top 1%), Academic Excellence Award (top 5%)
- Courses: Project on Deep Learning, Financial Mathematics, Stochastic Process, Financial Stochastic Models, Probability Theory, Markov Chain, Time Series, Bayesian Statistics, Stochastic Theory and Methods in Data Science, OOP and Java, ODE, Applied PDE

WORK EXPERIENCE

Guotai Haitong Securities — Suzhou, China
Quantitative Research Intern — Jun 2025 - Aug 2025
- Researched and implemented an ETF-based All-weather Strategy, extending the traditional risk-parity framework to the US ETF markets; built a parameterized risk-parity model optimized via grid search under Sharpe ratio criteria.
- Led a group of 4 and designed a rule-based dynamic leverage-switching strategy, where every 10% drawdown in the underlying ETF triggered a partial shift into its leveraged counterpart, and positions were reverted upon recovery to historical highs.
- Preprocessed financial data from Yahoo Finance and conducted 5-year rolling backtests in Python, yielding an annualized return of 18.6%, a Sharpe ratio of 1.85, and a max drawdown of 18.4%, outperforming the S&P 500 benchmark.
- Conducted numerical derivative pricing research, implementing CRR trees, Black–Scholes model, Monte Carlo Simulation in Python to price options under different market conditions; computed Greeks, including Delta, Gamma, Vega to analyze the models' sensitivity.
- Participated in the 4th China Quantitative Investment White Paper Conference (Quanference) as a representative of the company, with panels covering the latest techniques of factor mining, machine learning and trading strategies.

Bank of Suzhou — Suzhou, China
Financial Data Analyst Intern — Jan 2023 - Mar 2023
- Conducted statistical analysis on large-scale customer datasets to ensure integrity and consistency for modeling, extracted meaningful variables from demographics and transaction records, and preprocessed data by removing duplicates, missing and unreasonable data.
- Applied logistic regression, decision trees, and SVM in R for classification tasks, evaluating and comparing models with accuracy and F1 score, and interpreted model results to identify customer segments, providing quantitative insights into product targeting.
- Gained an introductory understanding of Decentralized Finance, such as stablecoins, decentralized exchanges, and liquidity pools, broadening exposure to alternative financial systems.

PROJECTS AND RESEARCH

University of Liverpool (Supervised by Dr. Youness Boutaib) — Liverpool, UK
Final Year Thesis - Deep Learning with its Applications — Jan 2025 - Jun 2025
- Constructed the mathematical frameworks of feedforward neural networks (FNN), recurrent neural networks (RNN), long short-term memory networks (LSTM), and echo state networks (ESN), and implemented these architectures using PyTorch.
- Applied neural networks to MNIST and Japanese Vowel datasets, achieving a 95% classification accuracy with LSTM models.
- Conducted empirical analysis on the S&P 500 using financial indicators from Yahoo Finance and the Federal Reserve Economic Database (FRED), achieving a predictive accuracy of over 80% for distribution interval forecasting with RNN and LSTM.
- Developed a 6-page paper on the Backpropagation Through Time (BPTT) algorithm in RNNs and LSTMs, including advanced mathematical proof involving matrix operations and multivariate analysis.

Xi'an Jiaotong Liverpool University (Supervised by Dr. Mu He) — Suzhou, China
Elementary Methods in Dimensionality Reduction and Transforms — Jun 2023 - Aug 2023
- Implemented Singular Value Decomposition (SVD) and Principal Component Analysis (PCA) in Python, applying dimensionality reduction techniques to high-dimensional datasets; extended methods to financial factor modeling for identifying latent risk drivers.
- Applied Fourier Transform and Fast Fourier Transform (FFT) to detect periodic structures and frequency-domain patterns in time series, with applications in volatility clustering and market cycle analysis.
- Investigated alternative transforms (Discrete Cosine, Gabor, Wavelet) and evaluated their efficiency in capturing localized features, highlighting potential use cases in denoising financial signals and improving predictive modeling.
- Conducted an in-depth study of the mathematical underpinnings of these methods, and produced a series of formal proofs and derivations of their theoretical properties.

CERTIFICATIONS

Certificate of Competition: Asia and Pacific Mathematical Contest in Modelling (APMCM), *Second Prize Winner* — Nov 2022
Certificate of Competition: Mathematical Contest in Modelling (MCM&ICM), *Honorable Mention* — Feb 2022

STILLS & LANGUAGE

Programming Languages: Python, C++, R, Java, Maple, Matlab, SQL, LaTeX
Languages: Mandarin (Native), English (Full professional proficiency), Cantonese (Basic), Spanish (Basic)