Chen Zimo

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EDUCATION

NATIONAL UNIVERSITY OF SINGAPORE Aug 2023 - May 2027

Bachelor of Science in Business Analytics

- Specialising in Finance and Machine Learning, with Second Major in Quantitative Finance
- Relevant Coursework: Financial Economics, Time Series Analysis, Derivatives & Fixed Income, Statistical Modelling, Machine Learning, Stochastic Processes
- Cumulative GPA: 4.5 / 5

TECHNICAL SKILLS

- Programming: Python, SQL, R, MATLAB, Java, C
- Libraries & Tools: pandas, NumPy, scikit-learn, statsmodels, TensorFlow/PyTorch, Excel VBA, Tableau
- Quantitative Finance: Derivatives pricing, VaR, backtesting, hedging, yield-curve modelling
- Statistics & Modelling: Time series (ARIMA, GARCH), ML (tree-based, deep learning), Monte Carlo simulation

EXPERIENCE

PRIVATE TUTOR *Teacher* Oct 2019 - Present

- Managed a portfolio of 30+ students over four years, tracking performance data and adapting teaching approaches based on measurable outcomes.
- Achieved ~90% long-term retention, demonstrating strong client management, reliability, and ability to maintain engagement across multi-year academic transitions.
- Coordinated feedback loops with students and parents, presenting progress insights using performance metrics and clear documentation.

PROJECTS

Multi-Model Market Forecasting & Risk Engine, Developer Feb 2025 - Present

Python, ARIMA–GARCH, XGBoost, LSTM, pandas, NumPy, scikit-learn, statsmodels

- Developed a forecasting engine to predict equity returns and volatility using ARIMA–GARCH, XGBoost and LSTM models, building a full pipeline from data ingestion → cleaning → modelling → back-testing
- Evaluated forecasts through key risk metrics (drawdown, volatility, Sharpe, VaR) and implemented walk-forward validation to assess model robustness across market regimes.
- Backtested across 5+ equities and demonstrated consistent regime-stability under walk-forward validation.

Rates Term-Structure & Derivatives Analytics Suite, Creator Aug 2025 - Nov 2025

Python, Fixed-Income Modelling, Discounting, Term-Structure Construction

- Constructed implied forward SOFR curves, FRA surfaces, and priced/deferred plain-vanilla interest-rate swaps using historical futures and market data.
- Simulated swap value changes under yield-curve shifts, demonstrating practical understanding of fixed-income markets, valuation, discounting and risk impacts.
- Generated forward curves and FRA surfaces consistent with SOFR futures pricing observed in 2025

Options Volatility & Risk-Neutral Distribution Lab, Developer Aug 2024 - Present

Python, Options Modelling, Monte Carlo Simulation, Numerical Methods

- Built an end-to-end pipeline to process options-chain data, compute implied volatilities (Newton's Method / Black–Scholes) and construct volatility surfaces across strike–maturity dimensions.
- Derived risk-neutral probability densities using the Breeden–Litzenberger approach and extended the analysis with Monte Carlo simulations (GBM and Heston) incorporating variance-reduction methods.
- Produced smooth IV surfaces and risk-neutral distributions for index options, validated against realised return distributions

EXTRA-CURRICULARS

TEAM SINGAPORE, WFDF UNDER-24 WORLD ULTIMATE CHAMPIONSHIPS, Player Jan 2024 - Jun 2025

- Represented Singapore in the WFDF U24 World Ultimate Championships held in Logroño, Spain.
- Achieved 4th position out of 21 teams globally in the mixed category.
- Selected among top national players following multi-stage trials.
- Collaborated with 24-member national team; trained 1.5 years leading up to competition.

RAFFLES INSTITUTION DEBATE CLUB, Debater Feb 2015 - Dec 2018

- Achieved Overall Champions in the 2018 national secondary school debating championships.
- Honed public speaking skills, presenting arguments clearly and persuasively in front of large audiences and judges.
- Collaborated with team members to develop comprehensive debate strategies, conduct research, and formulate compelling cases.