

SUYANG XIAO

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Education

- University of Hong Kong**, Hong Kong Sep. 2022 – May. 2026
- *BSc: Mathematics (Intensive), Physics (Minor)*, **Full ride scholarship** (President's Scholar)
 - GPA: 3.77/4.30 (3.80/4.00 WES), First Class Honours
 - Coursework: Financial Calculus, Probability Theory, Linear Algebra 2, Introduction to Optimization, Game Theory
- University of Oxford**, United Kingdom Oct. 2024 – Jun. 2025
- *Visiting student program, St. Peter's College*, **First Class Honours** (Predicted)
 - Coursework: Probability Measure and Martingales, Differential Equations 2, Statistical Machine Learning
- St. Joseph's Institution International**, Singapore (**IB: 45/45**, 99th percentile) Jan. 2020 – Jan. 2022

Honors and awards

- **Ranked 5/64** – Oxford CSSA Poker Tournament (2025)
- **Dean's List (Top 10% of Faculty)**– HKU Faculty of Science (2023, 2024)
- **Bronze Award** - Singapore Mathematics Olympiad (Open Division) (2021)
- **Silver Award** – Singapore Chemistry Olympiad (2020)

Experience

- Oxford Alpha Fund**, *University of Oxford* Nov. 2024 – Mar. 2025
- Quantitative Analyst, Options and volatility group*
- Researched the VIX index by modelling volatility regimes using a Hidden Markov Model (HMM), fitted using a custom dispersion parameter and other indices such as VVIX and SWAP.
 - Designed a volatility arbitrage strategy on variance swaps and VIX futures using HMM signal, backtested using CBOE data, with a Sharpe ratio of **1.21** (Accounting VIX quote slippage and transaction costs in backtest).
- University of Hong Kong, Department of Mathematics** Jun. 2024 – Sep. 2024
- Summer Research Fellowship, Quantum algorithm option pricing | Supervisor: Prof. Zhang Zhiwen, Mathematics*
- Researched Independently the pricing of European options with stochastic volatility using variational quantum algorithms, constructed an ansatz (parameterized wave function) unique to initial condition of the option.
 - Priced a toy option for proof of concept, beyond what is done in literature, with a classical simulation of the quantum algorithm using Qiskit in Python.
- Teaching Assistant (MATH1009: Basic Mathematics for Business and Economics)* Sep. 2023 – Dec. 2023
- Held 6 revision classes to a class of 120 students, covering topics leading up to multivariable optimization.
 - Designed revision class notes independently using Latex, and further assisted the Lecturer on student Q&A.

Research and Projects

- Exploitive Poker** (Supervisor: Dr. Nazem Khan, University of Oxford) Jun. 2025 -
- Currently researching in designing a poker playing algorithm that actively exploits sub-optimal play.
 - Working on reproducing Counterfactual Regret Minimization to produce an ϵ -Nash Equilibrium strategy.
- Mean Reversion Trading** Aug. 2024 – Sep. 2024
- Performed tests for cointegration, such as the Engle-Granger test, Johansen test and Augmented Dickey-Fuller test on over 10 cryptocurrencies and 20 forex pairs.
 - On the AUD/NZD pair, designed a statistical arbitrage strategy, where a dynamic spread is calculated over a 360-day window, using spread volatility as signal for entering position.
 - Backtested on daily-frequency data, with a Sharpe ratio of **3.0**, Max drawdown of under **6%**, achieved a 5x on initial capital (assuming 10:1 leverage, reasonable due to low max drawdown).
- Orderbook Simulation** (HKU Quantitative Investment and Data Science Society) Mar. 2023 – Jan. 2024
- Researched into simulating price distribution of Limit Order Books using Poisson distributed Zero-Intelligence agents, and developed a trade matching prototype to give a better simulation of the stock exchange market.
 - Conducted validation of stylized facts, such as mean-reversion and volatility clustering via the autocorrelation of asset return, using minute frequency data over 20 years from the Shenzhen Exchange.

Extra Curriculars

- LSE Summer School** (IR105-Understanding Foreign Policy: The Diplomacy of War, Profit, and Justice) Jul. 2025
- HKU Quantum Bit Demonstrator Group**, Hong Kong, *Speaker* Sep. 2022 – Sep. 2023
- Acted as a speaker at HKU Innoshow, covering concepts such as quantum locking and superconductivity.
- HKU Judo Club**, Hong Kong, *General Secretary* Sep. 2022 – Sep. 2023
- Represented HKU at Inter-college Judo Competition, achieved silver medal as a team.

SKILLS

Technical /Computer Skills: Python, Latex, Matlab
Languages: English (fluent), Chinese (fluent)