ALAN MATTHEW

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EDUCATION

Yale-NUS College Singapore

Bachelor of Science (Honours) in Mathematics and Computer Science; GPA: 4.89/5.00 May 2025

Relevant Coursework: Asset Pricing, Options, Econometrics, Stochastic Modelling, Machine Learning
Activities: Teaching Assistant for Data Structures & Algorithms, Probability Theory, and Databases
Awards: Kewalram Chanrai Full Scholarship

EXPERIENCE

Caladan (AlphaLab Capital) High Frequency Market Making in Singapore

Algorithmic Trading Intern May 2024 - Aug 2024

- Engineered low-latency trading execution servers and market quote polling services for new exchanges.
- Monitored and resolved production issues in core trading algorithms, ensuring correct trading behavior.
- Expanded **Python** analysis libraries for deeper insights into market volume, PnL, and trading statistics.
- Built ETL visibility tools and debugged out of memory issues in **Python**, reducing AWS costs by 80%.

Evooq Swiss Wealth and Asset Management SaaS

Software Engineering Intern Jan 2024 - Apr 2024

- Created a **Python** LLM chatbot which can query a **MariaDB** database using natural language.
- Created a **Python** tool to generate trading ideas for a given portfolio with specific goals using RAG.

Hatcher+ Singaporean Venture Capital SaaS

Software Engineering Intern May 2023 - Aug 2023

- Developed a **Python** LLM service to extract structured data from company capitalization tables.
- Scripted a **PHP** scheduler to apply language updates using LLM-predicted English sentences.
- Authored a smart contract in **Golang** to store investment data on the AWS Hyperledger Fabric network.

Switcheo Labs Singaporean Cryptocurrency Exchange

Software Engineering Intern Oct 2022 - Dec 2022

- Automated market and liquidity pool allocation logic in Golang for DeFi trading across 90+ markets.
- Developed a **TypeScript** service for monitoring debt transactions and visualizing trades using **React**.
- Developed a Telegram bot to monitor and alert support of stalled Carbon blockchain trades.

Kredens Capital Management Singapore

Equity Trading Intern May 2022 – Aug 2022

- Researched US equities and macro trends to pitch short-term trades; generated 27% portfolio returns.

PROJECTS

- **Strategy Behaviour Analysis**: Investigated trade direction predictability using classification models. Engineered features and systematically trained and applied different models to understand trading behavior.
- **Market Impact Analysis**: Designed custom metrics and applied permutation-based hypothesis testing to evaluate the market impact of a live trading strategy.
- **Strategy Markout Analysis**: Performed post-trade analysis on crypto data by identifying key one-hour windows, computing markouts, and visualizing strategy behaviour, trade profiles, and drawdowns of strategy.

SKILLS

Languages: C++, Python, C#, TypeScript, JavaScript, SQL, Kotlin, Scala, Golang, Rust, OCaml, Coq

Frameworks: React, Vue.js, Next.js, Express.js, Flask, Laravel, AWS (Lambda, DynamoDB)