

# ALAN MATTHEW

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## EDUCATION

### Yale-NUS College

Bachelor of Science (Honours) in Mathematics and Computer Science; GPA: 4.87/5.00

Singapore

May 2025

**Relevant Coursework:** Asset Pricing, Statistical Inference, Stochastic Modelling, Machine Learning

**Activities:** Teaching Assistant for Data Structures & Algorithms, Probability Theory, and Databases

**Awards:** Kewalram Chanrai Full Scholarship

## EXPERIENCE

### Caladan

Algorithm Developer

HFT Market Maker

Jul 2025 – Present

- Automated daily post-trade analysis and transaction cost analysis for various trading algorithms, providing insights on hedge timing, execution quality, markout analysis, pricing, and other relevant statistics.
- Built custom reporting pipelines to analyze and monitor algorithmic trading PnL, surfacing the risk of our strategy being arbitrated and assessing potential hedge ineffectiveness, alongside other key performance metrics.

### Caladan

Algorithm Developer Intern

HFT Market Maker

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%.

### Switchero Labs

Software Engineering Intern

Cryptocurrency Exchange

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.

### Singular Asset Management

Equity Trading Intern

Asset Management

Jan 2022 - Apr 2022

- Traded Indonesian equities on IDX, supporting a long-only portfolio with PM; generated 11% returns.

### Kredens Capital Management

Equity Trading Intern

Hedge Fund

May 2022 – Aug 2022

- Researched US equities and macro trends to pitch short-term trades; generated 17% portfolio returns.

## PROJECTS

- **yokurang/mytree:** A published **Rust** tool for displaying directory trees with custom filers. 2k+ downloads.
- **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.

## SKILLS

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

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