

# ALAN MATTHEW

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## EDUCATION

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### Yale–NUS College

Aug 2020 – May 2025

Bachelor of Science (Honours) in Math, Computational and Statistical Sciences | GPA: 4.87/5.00

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

**Activities:** Teaching Assistant for Data Structures & Algorithms, Probability Theory, Statistical Inference

**Awards:** Kewalram Chanrai Full Scholarship

## EXPERIENCE

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### DRW

HFT Proprietary Trading

Incoming Quantitative Trading Analyst

Jan 2026

- Will trade stock options on HKEX, researching and implementing high-frequency and mid-frequency strategies.

### Caladan

HFT Market Making

Software Engineer

Jul 2025 – Present

- Built generalised caching layer for time-series datasets, reducing query latency from seconds to milliseconds.
- Re-engineered distributed ETL workflows using DAG modeling with fault-tolerant retries for high-availability.
- Developed real-time PnL computation service with streaming validation and metric exposure to Grafana.
- Created modular Python services for fills and market research with generalised architecture for cross-team reuse.

### Caladan

HFT Market Making

Software Engineering Intern

May 2024 – Aug 2024

- Implemented cold and hot path components for C# trade servers, expanding crypto trading to new exchanges.
- Developed data ETL pipeline visibility service in Python; Rewrote core services using async to improve speed.
- Resolved critical bugs in algorithm trading logic and fixed out of memory issues, saving monthly costs by 80%.

### Evooq

Fintech SaaS

Software Engineering Intern

Jan 2024 - Apr 2024

- Created a Python LLM chatbot that translated natural language queries into SQL for a MariaDB database.

### Hatcher+

Fintech SaaS

Software Engineering Intern

May 2023 - Aug 2023

- Developed a Python LLM microservice to parse excel company capitalization documents into structured JSONs.
- Programmed a PHP scheduler leveraging an LLM to predict English sentences and translate foreign languages.

## OPEN SOURCE

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### panglesd/diffcensible

Accessible Diff Viewer (OCaml)

- Developed side-by-side diff rendering with numbered lines, color highlighting, etc., to enhance user experience.
- Implemented data structures (e.g., zipper, block-based storage) and linear-space diff algorithms to enable precise word-level comparisons across multi-line changes and improve performance in large-scale file navigation.

## PROJECTS

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- **yokurang/poe2-arbitrage:** Engineered ETL and ML pipeline to scrape Path of Exile item prices and estimate FX via VWAP. Researched features and built regularized regression and closed-form models with residual diagnostics. Deployed live client to detect undervalued items across multiple currencies in real time.
- **yokurang/mytree:** A published Rust tool for displaying directory trees with custom filters. 2k+ downloads.

## SKILLS

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

**Frameworks:** React, Next.js, Flask, PyTorch, TensorFlow, scikit-learn, AWS (Lambda, DynamoDB)