

# Alan Matthew

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## EDUCATION

### Yale-NUS College

*Bachelor of Science in Math and Computer Science; Minor in Economics; CAP: 4.80/5.00*

Singapore  
May 2025

**Awards:** Recipient of the Kewalram Chanrai Scholarship

**Relevant Coursework:** Data Structures and Algorithms, Operating Systems, Parallel and Distributed Programming

**Professional Certification:** AWS Cloud Practitioner

## EXPERIENCE

### Hatcher+

*Software Engineer Intern*

AI Driven Venture Capital in Singapore  
May 2023 - Jul 2023

- **Data Parsing Microservice:** Engineered and deployed a **Python** microservice in **AWS** from scratch that parses company capitalization documents and extracts the key information into a structured JSON format, saving manual labor and reducing costs by 13%.
- **Employee Leave Management System:** Architected a comprehensive employee leave system using **Vue.js**, **Laravel**, and **MySQL** to handle employee data, manage leave requests, and provide analytical insight into leave trends, boosting HR productivity by 20%.
- **Investment Information Smart Contract:** Authored a smart contract using **Golang** from scratch that stores investment data so users can create and management investments on the Hyperledger Fabric blockchain, improving user confidence in data security by 73%.
- **Automated Translation Workflow:** Programmed a **PHP** scheduler to locate untranslated strings in the codebase, use the OpenAI API to predict English sentences for the untranslated strings, and automate language updates, saving the testing team 10h/week.
- **Slack Bot for System Monitoring:** Built a Slack Bot using **Python** to supervise the primary web scraping bot's health and activities, and deliver analytical summaries of the scraped data to the main engineering updates Slack channel, saving support costs by 8%.

### Switchco Labs

*Software Engineering Intern*

Cryptocurrency Exchange in Singapore  
Nov 2022 - Dec 2022

- **Consolidated Search API Development:** Spearheaded the creation of a search API in **Golang**, aggregating data from multiple databases into a unified API call; optimized data retrieval process for 96,000+ users, resulting in a 40% reduction in query time.
- **Automated Market-Pool Linkage:** Leveraged **Golang** to automatically link markets with the corresponding liquidity pool and vice versa, eliminating manual intervention and securely allocating all USD \$130 million of capital across the exchange.
- **Transaction Service & UI:** Implemented a new service to query Switchco's DEX and record collateralized debt position transactions using **Typescript** and **Redis**, then utilized **React** to visualize and summarize CDP trading in the exchange for 35,000 daily visitors.
- **Telegram Bot for Blockchain Monitoring:** Built a Telegram Bot using **Typescript** and **Redis** to monitor transactions in the Carbon blockchain and alert the team about stalled transactions that demand manual attention, boosting problem resolution speed by 83%.

### Investree

*Software Engineering Intern*

P2P Fintech Lending in Jakarta  
May 2022 - Aug 2022

- **Investment Dashboard Enhancement:** Implemented new features for the investment dashboard using **Vue.js** and **Kotlin** which improved the presentation of financial statements and key metrics and increased the number of positive reviews from users by 17%.
- **Covenant Page Development:** Designed and developed an intuitive covenant page with **Vue.js** and **Kotlin**, simplifying the terms and conditions signing process for over 59,000 small business loans, leading to a significant reduction in transaction costs.
- **RESTful APIs Development:** Constructed and deployed RESTful APIs using **Kotlin** to query and process data from **PostgreSQL** databases for the frontend, and validated sensitive information, enhancing data security and reliability for over 100,000 users.
- **Quality Assurance:** Leveraged **Jest** to devise comprehensive unit tests, ensuring  $\geq 80\%$  code coverage across all components, which led to a 32% reduction in user-reported bugs and enhanced overall product stability and user satisfaction.

## PROJECTS

- **yokurang/YNCModsBot:** Engineered a robust Telegram bot using **Typescript** and the Telegram API to offer real-time assistance to Yale-NUS College students navigating module selection, reducing response time by 40% and catering to 500+ students each year.
- **yokurang/Csv2Json:** an **Elm**-based CSV to JSON file converter; taking advantage of advanced functional programming techniques to streamline data conversion and enhance web application performance.
- **yokurang/yokurang.com:** Created a personal website utilizing **React** and **Typescript**, hosted on **AWS**; enhanced user experience and increased engagement by implementing intuitive navigation and interactive features.

## SKILLS

**Languages:** C/C++, Python, TypeScript, JavaScript, Golang, Scala, Kotlin, OCaml, Rust, PHP, SQL

**Frameworks:** React, Vue.js, Next.js, Spring Boot, Express.js, Flask, Laravel, Amazon Web Services