

Benn Tan

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EDUCATION

National University of Singapore

First Class Honours (On-Track)

BComp. Computer Science (Hons)

Expected Graduation: May 2027

- Certificate of Distinction in Networking & Distributed Systems Focus Area
- Top Students Award - Introduction to Operating Systems (*A+* out of 592 students)
- Teaching Assistant - CS2040S: Data Structures & Algorithms (*Feedback Score: 4.8/5.0, Faculty Average: 4.2/5.0*)

EXPERIENCE

Squarepoint Capital (C++ Data Infrastructure Team)

Jan 2026 - May 2026

Software Engineer Intern

Singapore

- Working on an internal **spcurl** command in **C++** to send **kdb+** payloads with human-readable **JSON** interface
- Invented type inference heuristics to map loosely-typed **JSON** values to **kdb+/q** types via **recursive descent parsing**, spanning primitives (i.e **date**, **timestamp**) and complex structures (i.e **dictionary**, **nested lists**)

The Trade Desk (User Trails Team)

May 2025 - Aug 2025

Software Engineer Intern

Singapore

- Designed Product Insights Tool in **C#**, **Python**, **Spark** integrating $\approx 2\text{TB}$ worth of real-time analytical data from Databricks Delta Lake (**Parquet**), utilizing SQL warehouse query optimizations and thread-level concurrency
- Ensured reliability and performance of backend APIs by implementing exponential backoffs across all unsuccessful network requests and batching large response payloads, reducing failure rates by $\approx 30\%$
- Shipped an interactive Sankey Chart in **React**, **TypeScript** by modeling user journeys across the Kokai platform as **directed-acylic-graphs**, cutting time-to-insight across different product and analytical teams by > 1 day

Apple (Apple Online Store Team)

Jan 2025 - May 2025

Software Engineer Intern

Singapore

- Engineered a backend service in **Java**, **Spring Boot** that streams order alerts in real-time from Apple's internal Monitoring Data Platform to Slack, enabling Customer Support to rapidly identify critical network issues
- Reduced **AWS TimestreamDB** response time from **5s** to **0.5s** for querying millions of Nginx Ingress Controller records and Kubernetes pod metrics using asynchronous I/O and event-driven caching with **Redis**
- Implemented **adaptive thresholding** in Splunk Processing Language to automate detection of anomalous logs amongst billions of Splunk events, achieving a **recall rate of $> 70\%$** and allowing for predictive intervention

Binance (KYC/Identity Verification Team)

Apr 2024 - July 2024

Backend Engineer Intern

Dubai, United Arab Emirates (Remote)

- Designed an end-to-end flow of a new microservice (i.e **KycMeasureTimeDeltaService**) to assess SLA compliance of third-party API vendors by collecting metrics from > 2 million identity verification requests
- Developed backend services using **Java**, **Spring Boot**, **Maxwell** to stream **MySQL binlog** changes to **Kafka**
- Implemented additional **Spring Boot** services that are responsible for consuming **Kafka** events, calculating user verification durations accurately and logging said metrics into Hive table for further processing

PROJECTS

IPPT Machine | *Python, OpenCV, Streamlit, Math*

Aug 2022

- Uses **OpenCV** and **MediaPipe** to parse video input and conduct pose estimation
- Wrote custom trigonometric functions in **Python** to calculate critical angles between bone joints
- Won **Special Prize - Most Data Friendly Hack** out of 400+ in NUS LifeHacks 2022 as a pre-university student

AWARDS

National Olympiad in Informatics 2020: Silver Medal and shortlisted for **SG National Team training**

Victorian Pioneer Award 2020: Emerged as one of 6 recipients out of a cohort of 800 in **Victoria Junior College**

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL (Postgres), TypeScript, Swift, HTML/CSS

Technologies/Frameworks: React, Node.js, Flask, JUnit, Docker, AWS, Linux