

# Benjamin Christopher Toh

+65 83382898 | toh.benjamin123@gmail.com | linkedin.com/in/ben-toh | github.com/bentohset | bentohset.dev

## EDUCATION

### National University of Singapore

Expected Graduation: May 2025

Bachelor of Engineering in Computer Engineering with a Minor in Data Engineering

First Class Honours

- Teaching Assistant for AY23/24 CS2113 Software Engineering and OOP
- Relevant Coursework:** Data Structures & Algorithms, Software Engineering & OOP (Java), Computer Networks, Database Systems, Data Engineering Principles, Realtime Operating Systems, Modelling and Analytics
- Certifications:** SQL Fundamentals, EdX DevOps and Software Engineering Capstone

## EXPERIENCE

### GovTech Singapore

Jan 2024 – Present

Software Engineer Intern

- Optimized and developed new features for a scalable cloud-native Cloud Operations platform that provides info-comm security and compliance services across 55+ public service agencies with React, Node.js and Azure Functions.
- Reduced Azure DevOps CI/CD pipeline execution time by 45% by upgrading and migrating to a modern framework.

### Heia.io

Dec 2023 – Present

Cofounder

- Spearheading the development of a career advisor AI and a platform to streamline university applications.
- Collaborating with a cross-functional team to define product features aligned with market needs and user feedback.

### Google Developer Student Club NUS

Aug 2023 – Present

Software Engineer

- Developed a full-stack volunteer management system in a cross-functional team for a Non-Profit Organisation to manage 10,000+ volunteers using Next.js, TypeScript, Express, Node.js, Docker and PostgreSQL.

### Trilogy Technologies

May 2023 – Aug 2023

Software Engineer Intern

- Designed and built backend architecture single-handedly with Pub/Sub Protocol, Edge gateway and Azure Functions in Python to handle high volume data processing and scalability for an IoT monitoring system with 1K+ sensors.
- Developed a full-stack web application to monitor and analyse IoT data using React, Python Flask and PostgreSQL.
- Prototyped a realtime location coordinate system from scratch with ESP32 microcontrollers in C/C++ and Python.

## PROJECTS

### AI Call Agent, NUS Hack & Roll 2024 Winner | Python, FastAPI, Twilio, AWS, OpenAI, PineconeDB, React, TypeScript

- Achieved Top 8 out of 244 projects in a 24-hour hackathon.
- Developed an AI Voice Agent using TwiML conversational model and AWS Polly Neural Voices from embedded data through Retrieval Augmented Generation and OpenAI text embedding model.
- Built a comprehensive dashboard with Next.js for realtime call logging and editable knowledge base for embeddings.

### Networking Platform, Startr | React, TypeScript, MongoDB, Redis, Python, Flask, Tensorflow, Socket.IO

- Developed a networking recommendation platform in a team of 4, resulting in 100+ onboarded users at Unicon 2024.
- Implemented a matching algorithm and recommendation system utilizing BERT embeddings with Tensorflow in Python.
- Leveraged Redis Message Queue on AWS EC2 to implement asynchronous processing and model training.

### Food Recommendation System, Go Eats | Python, Go, TypeScript, PostgreSQL, React, Kubernetes, Docker, Terraform

- Developed a full stack recommendation system and deployed on Azure Kubernetes Service with Terraform.
- Trained a content-based filtering Machine Learning model to recommend similar restaurants according to reviews by vectorizing text which communicates with a telegram bot via gRPC protocol.
- Engineered restaurant review data with a web crawler and scraper leveraging Google Maps API and Selenium.

## SKILLS

**Languages:** C/C++, Python, Java, JavaScript, TypeScript, SQL

**Database/Cloud:** Redis, MongoDB, PostgreSQL, MySQL, Microsoft Azure, Amazon Web Services

**Technologies/Libraries:** React, Next.js, Flask, FastAPI, Node.js, Express, Apache Hadoop

**Tools:** Git/GitHub, Docker, Kubernetes, Terraform, Linux