

Kevin Toh Zheng Ying

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PERSONAL SUMMARY

A meticulous, organized and resourceful technologist, possessing strong technical knowledge in software engineering. Passionate about creating innovative software solutions and contributing to the evolution of our digital landscape.

EDUCATION

National University of Singapore

August 2022 – Present

Bachelor of Computing, Computer Science (Honours)

- Expected Date of Graduation: December 2025
- Distinctions: Software Engineering, Databases, Operating Systems

Ngee Ann Polytechnic

April 2017 – February 2020

Diploma with Merit in Information Technology

- Awards: SCS Silver Medal & Prize, CSIT Diploma Scholarship
- Distinctions: Mobile Applications Development (Android & iOS), Full Stack Development
- Relevant Modules: DevOps, Deep Learning, Predictive Analytics

SKILLS

- **Programming Languages:** C/C++, C#, Java, Python, TypeScript
- **Front End Development:** ReactJS, VueJS
- **Server-Side Development:** NestJS, SpringBoot
- **Database Management:** Microsoft SQL, MySQL, PostgreSQL, Firebase, MongoDB

EXPERIENCE

Large Language Model Research Intern

June 2023 – February 2024

*Agency for Science, Technology and Research (A*STAR)*

- Constructed graphs of multiple LLM agents using LangGraph to facilitate interaction and knowledge sharing.
- Investigated optimal graph structures for efficient information exchange and collective performance.
- Researched applicability of LangGraph on smaller models (e.g., LLaMA3 8B) to achieve performance comparable to larger models (e.g., LLaMA3 13B)
- Fine-tuned LLMs on golden standard datasets of counselor-patient conversations, rated by psychologists, for mental health support.
- Explored applications of fine-tuned LLMs in mental health, such as chatbots or virtual support agents.
- **Technologies Used:** LangChain, LangGraph, Groq, ChromaDB, TavilyAI

Research Engineer

June 2023 – February 2024

National University of Singapore

- Conducted research and development on Bluetooth interactivity of carbon monoxide sensors used for smoking cessation studies.
- Designed and implemented an API in TypeScript to interact with the iCOQuit Smokerlyzer.
- Collaborated with 3 developers on a smoking cessation mobile application and backend infrastructure for a study involving 100 participants; undertook project from ideation to acceptance.
- **Technologies Used:** React Native, TypeScript, Firebase

Software Engineer Intern

March 2019 – August 2019

Centre for Strategic Infocomm Technologies (CSIT)

- Designed, implemented a collaborative meeting management system using SpringBoot, VueJS, Elasticsearch and NLTK within a 5-month timeframe, enhancing meeting efficiency by 43%.
- Innovated and designed a Natural Language Processing (NLP) model to generate follow-up actions from meeting minutes, saving 1 man-hour from post meeting coordination.
- **Technologies Used:** Microsoft SQL, NLTK, Scikit-Learn, SpringBoot, VueJS

PROJECTS

Intelligent Tutoring System (Frontend Management System)

January 2024 – Present

National University of Singapore

- Collaborated in a dynamic SCRUM team of 6 students to spearhead the development of a frontend assignment management system. The system serves as a vital component of a future learning platform catered to students taking introductory level programming courses in NUS.
- Implemented robust CI/CD pipelines and meticulously crafted deployment environments, ensuring seamless project delivery and optimization of development processes.
- Leveraged on the Intelligent Tutoring System API to integrate advanced functionalities to provide personalized and constructive feedback to guide students in their programming journey.
- **Technologies Used:** ReactJS, NestJS, CodeMirror, PostgreSQL, Prisma, GitHub Actions

Burnout Support Bot

January 2024

Hack & Roll 2024

- Contributed to the team-based development of a conversational therapy application, Burnout Support Bot, aimed at providing personalized coping strategies for users experiencing burnout. The application identifies burnout types, enables users to journal gratitude, and facilitates balance restoration.
- **Technologies Used:** MistralAI, LlamaIndex, Langchain, FAISS, DeepFace, Beautiful Soup
- **Project Website:** <https://devpost.com/software/burnout-support>

VoluNteerUS

May 2023 – August 2023

Orbital, National University of Singapore

- Collaborated with a partner to conceptualize, plan and develop a volunteering management platform for NUS students to discover volunteering opportunities and for student clubs and organizations to host events.
- **Technologies Used:** ReactJS, TailwindCSS, NestJS, MongoDB, Google Cloud Storage
- **Project Website:** <https://volunteer-us.onrender.com/>

EXTRA-CURRICULAR ACTIVITIES

Treasurer

August 2023 – Present

NUS Community Service Club, L-derly Befrienders

- Managed finances and meticulously crafted comprehensive budget plans for academic year 2023/2024.
- Conducted weekly befriending visits to the elderly residents of Bukit Merah View and Jalan Bukit Merah, ensuring that basic welfare needs are met.