

# VARUN SWAMINATHAN

+1 415-859-8676 | +65 9180 8472 | s.varun@u.nus.edu | <https://linkedin.com/in/varun-swaminathan/> | <https://varun.flero.link>

## EDUCATION

---

**National University of Singapore**

*Singapore, Singapore*

**Bachelor of Engineering (Computer Engineering) with Second Major in Innovation and Design**

*Aug 2020 - May 2024*

**Stanford University**

*Palo Alto, CA*

**Entrepreneurial Studies under NUS Overseas Colleges**

*Jan 2023 - Dec 2023*

## WORK EXPERIENCE

---

**Synaptec Health**

*San Francisco, CA*

*Software Engineer*

*Jan 2023 - Dec 2023*

- Build and maintain a React frontend to audit machine learning model output to track and boost internal QA team productivity; with user analytics and automated unit testing with Jest and React Testing Library.
- Collaborated with the engineering team to design and implement a secure and scalable GraphQL API endpoint with AWS to interface between frontend and production database.
- Added new features, fixed bugs and maintained Python backend for the data processing pipeline used to classify hundreds of medical charts daily.

**Ground Labs**

*Singapore, Singapore*

*Software Engineer Intern*

*May 2022 - Aug 2022*

- Implemented new features and fixed bugs for C++ backend of core company products for enterprise users.
- Collaborated with the product team to build a performant progressive web app with Svelte for new product launch, currently in use by hundreds of enterprise customers.
- Developed SQL backend administrator tools for networking protocols used to containerize monolith applications.

## SKILLS

---

- Programming languages: C, C++, Java, Python, Typescript, Javascript, Dart, Go, Rust
- Frameworks: React, NextJS, Svelte, Django, FastAPI, Flutter, GraphQL
- Libraries: Tailwind CSS, Jest, React Testing Library, Terraform, PyTorch, Tensorflow, Huggingface, PySpark, OpenCV
- Databases: PostgreSQL, MySQL, Redis, MongoDB, Weaviate, Milvus
- Other: Git, Docker, Amazon Web Services, Google Cloud Platform, Digital Ocean, Figma

## PROJECTS

---

**Fluently Python, Open AI**

*Jan 2024 - Present*

Spearheading a team to disrupt language learning with an AI tutor mimics native fluency, creatively adapts to user-led dialogues, and provides nuanced feedback, leveraging large language models and sophisticated voice synthesis to offer a customizable, interactive language learning experience. Awarded \$10,000 funding from NUS Venture Initiation Programme.

**The Learning Hearing Aid Python, Huggingface**

*Sep 2023*

Partnered with industry experts in a 24 hour hardware hackathon to develop a non-intrusive wearable aid for elderly suffering from dementia to help recognize faces, detect emotion, play cognitive games and interact with other devices such as the Boston Dynamics Spot robot. Won second place and was invited to pitch the product at a TEDxSanFrancisco after event to potential investors.

**NUS RoboMaster OpenCV, YoloV4, PyTorch**

*Aug 2020 - Dec 2022*

Coordinated with the engineering team to create a custom object detection model with YOLOv4 and PyTorch to identify and accurately classify robots with 85% accuracy and display a mini-map of enemy targets in battle arena in DJI RoboMaster competition.

**NUS Rocketry C++, Arduino**

*May 2022 - Dec 2022*

Led an intercollegiate team of 10 in developing the main flight computer and subsystems used in avionics for the first rocketry team from Singapore to compete in the Spaceport America Cup competition in the United States.

**StockUp Flutter, Firebase, Google Cloud Vision**

*May 2021 - Aug 2021*

Spearheaded a mobile app to simplify the grocery planning and inventory tracking experience for grocers to reduce food wastage due to expired items. Awarded Extreme Level achievement for software engineering.

## RELEVANT COURSEWORK

---

Full Stack Web Development, Database Management Systems, Cloud Computing, Deep Learning