

Ervin Tan Zhang-Hng

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EDUCATION

National University of Singapore

Bachelor of Computing, Computer Science

Singapore

Expected Graduation: May 2027

EXPERIENCE

GIC Pte. Ltd.

Software Engineer Intern

May. 2025 – Current

Singapore

- Automating Key Workflows via Airflow DAGs, LLM APIs, and Retrieval Augmented Generation.

Voltade

Software Engineer Intern

Dec. 2024 – Jan. 2025

Singapore

- Generated a list of 1500 business leads for Voltade by developing a lead discovery system that utilizes Google Custom Search, LLM APIs, and Retrieval Augmented Generation.
- Automated the founder's lead discovery process by building and deploying an internal application that enables direct, categorical searching of potential SME clients.

RAiD, Republic of Singapore Air Force

Data Engineer

May 2024 – Aug. 2024

Singapore

- Reduced data processing time from 10 hours to under 1 hour by engineering a scalable data pipeline using Python to optimize data ingestion and transfer.
- Improved operational efficiency by analyzing and labeling a large-scale dataset, delivering key insights that guided strategic decisions.

RAiD, Republic of Singapore Air Force

Software Engineer

Jan. 2022 – Aug. 2023

Singapore

- Facilitated communications Air Force-wide by developing a full-stack Telegram bot, using TypeScript, React, Prisma, PostgreSQL and Telegram APIs.
- Resolved over 2000 office inquiries within a span of 6 months, saving significant personnel time, by creating an FAQ Telegram Bot with DialogFlow and JavaScript.
- Boosted engagement for an internal innovation campaign by developing a promotional webpage using React and Material-UI.

Trustwave, Singtel

Software Engineer Intern

Sep. 2020 – Feb. 2021

Singapore

- Built complex database queries for extracting data from **ArangoDB** / **MongoDB** database, and connected them to backend interface using GraphQL.
- Improved user experience and data accessibility by developing new data visualization dashboards and optimizing existing ones with React, TypeScript and D3.js.
- Cut database query time by 80% by engineering efficient data transfer pipelines with Apache Spark (PySpark)

PROJECTS

MindConnect | *React Native, NodeJS, Expo-Go, Heroku, Firebase, Git*

- Developed a React Native application to allow people seeking mental health support to speak with a peer or counsellor.
- Built a Node.js/Heroku back end that runs daily database maintenance at 8 a.m. via scheduled jobs.
- Integrated the Agora SDK for reliable, end-to-end voice and video calls.

Project Crisis | *Python, scikit-learn, Flask, Heroku, Docker, Git*

- Created a capture-the-flag style challenge to teach adversarial ML concepts through practical CTF problems.
- Built and deployed multiple AI models (phishing detection, web-defacement classification, DDoS identification).
- Delivered Jupyter notebooks and a Flask web interface so participants could run and test attacks locally or in the cloud.

TECHNICAL SKILLS

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

Technologies / Frameworks: React, React-Native, Node.js, Flask, Django, Docker, Linux, Google Cloud, AWS

Libraries: pandas, NumPy, Matplotlib, Sci-Kit Learn, Seaborn, BeautifulSoup, Selenium, OpenAI, LangChain, PyTorch