

Joshua Tan Yin Feng

Ambitious and hardworking Y5 computer science student at NUS. Primary experience as a backend software engineer with a focus on Cloud development. Passionate about building effective delivery pipelines to increase developer efficiency.

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Education

National University of Singapore

Bachelor of Computing (Honours) in Computer Science, GPA: 4.66

Singapore, Singapore

Aug 2019 – Dec 2023

University of British Columbia

Overseas Exchange Program

Vancouver, British Columbia

Jan 2022 – Apr 2022

Experience

Backend Software Engineer Intern (Cloud Infrastructure) | [ByteDance](#) | Singapore, Singapore

May 2023 – Present

- Part of core team responsible for the migration of ByteDance business products from the internal cloud to [Volcano Engine](#) cloud platform across multiple regions and availability zones.
- Ensured the availability and correctness of thousands of newly migrated database storages and message queues through the development of a health check system using Go.
- Created Grafana dashboards and alert systems by using Bosun to query OpenTSDB metrics; both dashboards and alerts were crucial in preventing service downtimes of ByteDance key applications and services like TikTok.
- Increased robustness and improvements of health check system as the primary maintainer – initiated whiteboarding sessions with team leads to enable scaling to multiple availability zones and gained approvals within 3 months of interning.

Backend Software Engineer Intern | [Horangi](#) | Singapore, Singapore

Jun 2022 – Dec 2022

- Worked in a multi-national team of 4 to add 3 new cloud security policy automated checks to Horangi's Cloud Warden service, enabling big clients such as Gojek to efficiently monitor the security statuses of over hundreds of thousands of cloud assets.
- Added compliance support for NIST SP 800-53R5, CIS AZR 1.4 and [Korea ISMS-P](#), enabling Horangi's international clients to better meet security requirements in the US and Korea.
- Designed and developed an internal web application tool using the PERN stack to speed up the process of adding compliance support, saving the team 40-50 hours of manual work for each compliance.
- Improved exception handling practices within the Cloud Warden service with more specific error diagnosis log messages, saving the team 2-3 hours of debugging time for each exception encountered.
- Won 2nd during in-house hackathon: created an attack path visualiser to provide a graphical display of possible sophisticated attack vectors exploited by malicious users with access to various insecure cloud assets.

Cybersecurity Engineer Intern | [Defence Science and Technology Agency of Singapore](#) | Singapore, Singapore

May 2021 – Aug 2021

- Implemented a parallelised version of the [Sparkle](#) algorithms using Intel's AVX2 ISA, successfully achieving at least 2x speedup on the authenticated encryption scheme Schwaemm (final presentation slides can be found [here](#)).

Projects

Smart Grid Cyber-range | Final Year Project with [Illinois ARC at Singapore Ltd](#) | Singapore, Singapore

Jan 2023 – Nov 2023

- Developed an IEC61850 compliant cyber-range modelled after [SUTD's iTrust](#) electrical testbed using C++, MySQL and Vagrant to coordinate virtual machines.
- Created a novel [IEC61850 plugin](#) for the [MITRE Caldera](#) adversary emulation platform to complement cyber-range efforts.

Static Program Analyser | [NUS's CS3203](#) Software Engineering Project | Singapore, Singapore

Jan 2023 – Apr 2023

- Led a team of 6 to develop a Static Program Analyser using C++; was amongst the top 15% of teams in the class.
- Utilised tools such as GitHub Project Board and Google Documents for effective team management and documentation.
- Sole developer for the database system and adhered to good design principles to ensure robustness and ease of development on the system.
- Contributed to good design decisions and feedback on other components of the project worked on by other team mates through quality discussions and code reviews.

Project Mart for Good | [NUS Google Developer Student Club](#) | Singapore, Singapore

Aug 2022 – Present

- Developed a new [donation website](#) and Content Management System for Food Bank SG to better their cause using Moleculer.js microservices framework, Typescript and PostgreSQL on the backend.
- Built key features such as payment integration with Checkout.com and the accounts management system with Google Firebase.
- Spearheaded the DevOps and CI/CD pipeline development, using Docker, Jest and Fly.io to containerise, test and host our backend services respectively; team's development cycle was very effective and was the only team that delivered a working product to our client on time.
- Collaborated with a team of 8 to ensure timely project delivery, and guided juniors on better software development practices.

Tournament Scheduler Web App | [UBC's CPSC319](#) Software Engineering Project | Vancouver, British Columbia

Jan 2022 – Apr 2022

- Collaborated with a multi-national team of 5 UBC students while on a student exchange to develop a tournament organiser web application tool to enable employees at Amazon to easily organise mini-tournaments.
- Augmented Hopcroft Karp's algorithm to create a scheduling and match creation algorithm.
- Implemented the CI/CD pipeline using GitHub Actions for automatic deployments to our AWS EC2 instance.
- Spearheaded the backend development using Java Springboot and PostgreSQL while adhering to best software engineering practices.

- [Academic Paper on Security Formulations for NFT minting and Lottery Schemes.](#)

Skills

- **Languages:** English (excellent), Chinese (good)
- **Programming Languages:** C, C++, Go, Java, Javascript, Python, Typescript
- **Frameworks/Libraries:** Apache Thrift, Jest, Kitex, MoleculerJS, Springboot
- **Frontend Technologies:** NextJS, ReactJS, Tailwind CSS
- **Databases:** PostgreSQL, MySQL, OpenTSDB
- **Cloud Platforms:** Amazon Web Services, Google Cloud Platform, Microsoft Azure
- **DevOps Tools:** Docker, Fly.io, Git, Vagrant