

## EDUCATION

**Nanyang Technological University, Singapore** Aug 2022 - Jul 2026  
**Bachelor of Engineering in Computer Engineering**, 4.23/5.00

- Second Major in Data Analytics

**Catholic Junior College, Singapore** Feb 2018 - Dec 2019  
**GCE A levels**

- Science Stream

## SKILLS

Portfolio website: <https://sharpwoofer.github.io/portfolio/>  
Github: [github.com/SharpWoofer](https://github.com/SharpWoofer)  
Linkedin: [linkedin.com/in/hongqicai](https://linkedin.com/in/hongqicai)  
Programming: Python, C, C++, C#, Java, Javascript, Go, Structured Query Language (SQL), Verilog HDL  
Concepts: AI, Cybersecurity, Data Structures & Algorithms, Object-Oriented Programming, MVC Architecture, Software Engineering, MongoDB, Express.js framework, React (frontend), Linux command line, SIEM tools

## EXPERIENCE

**YoFun Singapore Pte Ltd** Jun 2023 - Feb 2024  
**Programming Tutor**

- Tutored and mentored 100 primary and secondary foreign students to achieve programming competency interfacing hardware and software development through languages such as Python and Scratch.
- Ensured and facilitated safety measures and precautions for instructors and students during 3 technological workshops with multiple small robotics parts (micro-bit) and high speed drones (DJI's Tello) simultaneously.

**William Tan Organisation (Prudential Assurance Company)** May 2022 - Jul 2022  
**Sales Intern**

- Accomplished M9, M9A, M5 & HI certificates in a span of 2 weeks with additional coaching lessons.
- Connected and networked with 4 insurance team leaders and members within Prudential Assurance Company.
- Generated 2 case reports with various value propositions on leveraging Fintech in insurance industries.

**MINDEF Singapore** May 2020 - May 2022  
**Heavy Equipment Specialist**

- Collaborated and chosen to be part of an elite team comprising of 18 Engineers from 3 different platoons to plan and execute wartime strategies on the ground operating specialized Man-Portable Anti-Tank equipments.
- Performed 3 types of real-time debugging and analysis of equipment with fixed-time constraints when malfunction occurs.

## ACADEMIC PROJECTS

**What-If...? Artificial Intelligence (AI) Project** Jun 2024 - Jul 2024  
**Artificial Intelligence (AI) Developer / TikTok TechJam 2024**

- Created and deployed a Flask application for users to generate alternate movie plots using a fine-tuned Mistral 7B Artificial Intelligence (AI) model.

**Pocket Chef Web Application** Jan 2024 - May 2024  
**Student full-stack developer**

- Collaborated with 4 other student developers in a software engineering project building a web application using the MERN (MongoDB, Express.js, React.js, Node.js) stack with inbuilt REST apis.
- Developed a shippable and tested application where users can find recipes, workouts and gym locations using various public APIs in less than 10 weeks with detailed Software Requirements Specifications (SRS).

**Camp Application and Management System (CAMs)** Aug 2023 - Dec 2023

### **Student Developer**

- Collaborated with 3 other peers via git to develop a command line interface backend system using Object-Oriented Programming to develop a camp booking and management system.
- Applied Java frameworks such as Maven with corresponding javadocs and SOLID design principles, increasing modularization and efficiency during system development.

### **TikTok Tech Immersion backend instant messaging system**

May 2023 - Jun 2023

#### **Student Developer**

- Created a solo project written using Golang and docker as an assignment to provide core message features for an IM system application architecture, without including front-end and account/authentication components.
- Implemented the production of a 5-step process of continuous integration/development tools with github actions/workflows to make use of automation to run test cases and deployment.

### **Spotify songs analysis using data science**

Jan 2023 - May 2023

#### **Student/Leader**

- Led a team to predict the popularity of a song based on its attributes and applied 2 models (Multiple Linear Regression (MLR) and Random Forest) to best predict the top few most influential attributes.
- Authored a 3 member project management where teamwork was done via Deepnote for data analysis to break down a song's individual and quantifiable components.

### **Whatsapp RSVP Self-bot**

Mar 2023 - Mar 2023

#### **Student**

- Created and improved on the original javascript-based Whatsapp self-bot by embedding data structures and algorithms learnt during the SCSE iLab workshop to support RSVP capabilities for more than 20 members.

### **Car Park viewer Unity application for SCSE Hackathon 2023**

Feb 2023 - Feb 2023

#### **Participant**

- Analysed the development of a handy web application to use JSON files and shows HDB car park lot availability and maintenance status level by level, and also its address and hourly rates from api data provided by gov.sg.

## **CERTIFICATES**

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Google: Artificial Intelligence (AI) Essentials

Google: Advanced Data Analytics Professional Certificate

Google: Cybersecurity Professional Certificate

Microsoft: Foundational C# with Microsoft in partnership with freecodecamp

TikTok/Bytedance: Foundation Programme in Server, Quality Assurance and Site Reliability Engineering

Google Digital Garage (Grow with Google): The Fundamentals of Digital Marketing

Nanyang Technological University: SCSE annual TechFest Hackathon 2023

Code Gakko: ASPIREAlpha South-East Asian Hackathon 2018 - Achieved 3rd Place

Nanyang Polytechnic: PICO-Mouse Race Engineering Explorer 2016 - Awarded 3rd Place

## **CO-CURRICULAR ACTIVITIES AND COMMUNITY SERVICES**

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### **NTU Hall 2's Darts**

Aug 2022 - Jul 2023

#### **Captain for 2 academic years**

- Started the CCA from scratch with 10 members on board due to its closure from insufficient members the previous year.
- Self-taught and taught team members with little to no experience to play well and eventually made it to the top 8 qualifying rounds during Inter-hall recreational games against all other competing halls.

### **CJC's Guitar Ensemble**

Feb 2018 - Dec 2019

#### **Prime Player**

- Obtained Distinction award during the biannual Singapore Youth Festival 2019 for Catholic Junior College.
- Managed section of 6 to play cohesively as a band and reduced the out-of-sync notes during playtime.