Chong Kai Ying

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|https://github.com/kaiiyingg | Singaporean

EDUCATION

Nanyang Technological University, Singapore   **Aug 2024 - May 2028**
Bachelor of Computing (Honours), Computer Science
- Honours (Highest Distinction) | CGPA 4.66/5 (Current)
- Relevant Modules – Data Structures & Algorithms, Object Oriented Design & Programming, C & C++ Programming, Computer Organisation & Architecture, Introduction to Computational Thinking & Programming, Digital Logic, Linear Algebra for Computing, Discrete Mathematics, Probability & Statistics for Computing

Raffles Institution, Singapore   **Jan 2022 - Jan 2024**

PERSONAL PROJECTS

Learning Stream: Your Personalized Tech Digest   **June 2025 - Present**
- In progress of developing a cloud-native web application to combat information overload, aggregating and filtering tech news and learning resources based on user-defined interests.
- Architected a scalable, event-driven backend utilizing **AWS Lambda** and **SQS** for asynchronous content ingestion and processing, with user data and content metadata stored securely in **AWS RDS (PostgreSQL)** and viewed database using **DBeaver.**
- Applied modern DevOps principles including **Infrastructure as Code (AWS CloudFormation)** for reproducible deployments and implemented a **CI/CD pipeline with GitHub Actions** for automated testing, linting, and continuous delivery of Dockerized Flask services.

Personal portfolio website   **May 2025 - June 2025**
- Built a responsive personal portfolio website (https://kaiiyingg.github.io/Portfolio-website) using **HTML**, **CSS**, **SCSS** and **JavaScript**, with a strong focus on **accessibility** and **clean coding practices**.
- Started with a base template to demonstrate **efficient code reuse**, then **enhanced and customized** it by adding my own **features, styling, and original content** to reflect my personal brand and creativity.

ACADEMIC PROJECTS

Object Oriented Design & Programming
Build-To-Order (BTO) Management System   **Jan 2025 - April 2025**
- Collaborated with a team of 4 members to design and develop a Build-To-Order (BTO) Management System using **Java**. Focused on implementing key **object-oriented design principles**, including encapsulation, polymorphism, inheritance, abstraction and **SOLID design principles** to model the system's core entities: Applicant, HDB Officer, and HDB Manager.
- Developed features for applicant registration, project applications, status tracking, and flat booking, using a **5-layer architecture (UI, controller, service, data, and model layers)** for modularity and ensuring data integrity with file-based storage through a **CLI interface**.
- Authored system documentation, including **UML class and sequence diagrams**, to illustrate the application's architecture and flow. Contributed to the design decisions to enhance system scalability and maintainability, following best practices for object-oriented programming; awarded **A grade**

Introduction to Computational Thinking & Programming   **Oct 2024 - Nov 2024**
Student Team Formation System
- Worked with a team of 5 to develop an algorithm for balanced student team formation, considering school affiliation, gender, and CGPA distribution. Processed and analyzed 6,000 student records using **Python** without external libraries.
- Created visualisation tools with **matplotlib and seaborn** to assess team diversity effectiveness, ensuring clarity in the results.
- Applied **computational thinking** to decompose the problem and design **modular solutions**. **Documented** the process in a **Jupyter Notebook** and presented findings clearly in a report; awarded **A grade**

HACKATHON

GovTech x NTUPC Product Hackathon 2025   **June 2025 - July 2025**

- Collaborated in a team of 4 to research and validate market opportunities for expanding GovTech's no-code platform, BoB, into sustainability-focused government and commercial sectors, addressing fragmented certification and compliance workflows for SMEs aligned with Singapore Green Plan 2030.
- Contributed to the design of innovative features such as OCR-based automated data extraction and auto-matching eligibility systems, while anticipating integration challenges and proposing solutions like blockchain for certificate verification.

Hack4Good NUS Web Development Hackathon   Jan 2025 - Feb 2025
- Worked in a group of 4 to develop a web-based Minimart and Voucher System for Muhammadiyah Welfare Home.
- Handled frontend development, designing and implementing the user interface using HTML, CSS and JavaScript. Utilised React for building dynamic, reusable components and Next.js for server-side rendering and optimised performance, ensuring a seamless user experience across devices.

INTERNSHIP | WORK EXPERIENCE

Tetrixx Pte. Ltd., Singapore
Software Developer Intern   **May 2025 - Aug 2025**
- Built and tested **RESTful APIs** using **Java**, **Spring Boot**, and **Postman**, integrating **SQL** via **DBeaver** to **reduce data retrieval time by 20%** on the Freya platform.
- Built a new feature using Java for Freya to recalculate freight invoice adjustments using historical pricing data, improving cost accuracy despite fluctuating charges.
- Automated routine tasks and system debugging using **Python** scripts.
- Applied **object-oriented principles**, **good coding practices**, **unit testing**, and **clear documentation** across all development work.
- Participated in **daily stand-ups** as part of the Developer team's **Agile ceremonies**.
- Gained hands-on experience with **AWS (incl. Cognito), Docker, CI/CD and Git/GitHub for DevOps**, **prompt engineering and team collaboration**.

Raffles Hospital, Singapore   Jan 2024 - Jun 2024
Healthcare, Surgery Centre Intern
- Handled patient registration and guided pre-op procedures in a high-traffic environment, **strengthening communication and attention to detail**.
- **Supported frontline operations** by addressing inquiries and coordinating with medical staff, ensuring smooth daily workflow.
- **Reduced patient wait time by 20%**, demonstrating my ability to **optimise workflows** and apply process improvements.

Golden village, Singapore   Nov 2021 - Jan 2022
Ticketing Staff
- Managed high volumes of customer interactions during peak hours, honing my **multitasking** and **time management skills**.
- Processed ticket sales, answered inquiries, and resolved issues, demonstrating **effective problem-solving and clear communication**.
- **Improved customer satisfaction by 15%**, showcasing my **ability to work under pressure** and **deliver efficient solutions.**

CO-CURRICULAR ACTIVITIES

Interact Club in Raffles Institution   Mar 2022 - Sept 2023
Active Member
- Led volunteer projects and mentored P4 students, strengthening my **leadership** and **teamwork skills** in a collaborative environment.
- Collaborated with peers to assist wheelchair-bound individuals, enhancing my ability to o**rganise tasks** and **work effectively in diverse teams**.
- Developed **strong communication** and **adaptability**, skills that will support **effective collaboration** in team environments.

RI Medical Society   Dec 2022 - Sept 2023
Volunteer
- Volunteered at AMK-Thye Hua Kwan Hospital, working in a fast-paced setting, enhancing my ability to **manage time and priorities under pressure**.
- Coordinated with staff and assisted patients, refining my **problem-solving abilities** and capacity to adapt to dynamic environments.

- Developed **critical thinking** and **teamwork skills**, directly transferable to fast-paced, solution-driven projects that require efficient collaboration and quick decision-making.

AWARDS | ACHIEVEMENTS

- Edusave Scholarship (2019-2021)
- Completed NTU Career & Attachment Office Workshops (2024)
- Earned Coursera Certification in HTML5, CSS3 & JavaScript, Introduction to Structured Query Language (SQL) - University of Michigan (2025) and Cloud Computing Foundations - Duke University (2025)

SKILLS

- **Programming languages:** Python, C, C++, Java, HTML, CSS, JavaScript, Git, PostgreSQL, Flask
- **Development tools:** Visual Studio Code, IntelliJ, Eclipse, GitHub, Git Bash, AI-Assisted Development (Copilot), Jupyter Notebook, Docker, AWS, Postman, DBeaver, MAMP
- **Languages:** Proficient in English and Chinese
- **Attributes**: Analytical and detail-oriented, Fast learner with a growth mindset, Creative problem-solver, Confident communicator, Reliable and self-motivated, Respectful team player

HOBBIES & INTERESTS

- Volunteering, swimming, movies, lifelong learning and problem-solving.