

Chong Kai Ying

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<https://github.com/kaiiyngg> | Singaporean

EDUCATION

Nanyang Technological University, Singapore <i>Bachelor of Computing (Honours), Computer Science</i>	Aug 2024 - May 2028
<ul style="list-style-type: none">• 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
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PERSONAL PROJECTS

<i>Learning Stream: Your Personalized Tech Digest</i>	June 2025 - Present
<ul style="list-style-type: none">• Developed a full-stack web app (https://personalized-tech-news-digest.onrender.com) aggregating personalized tech news from 27+ sources using Python (Flask), PostgreSQL (via Supabase), and Docker, achieving 90%+ topic classification accuracy with intelligent content filtering.• Engineered resource-efficient backend algorithms and database schema to operate within 1 GB free-tier hosting on Render, sustaining sub-second response times through connection pooling, caching, and query optimization for scalable growth.• Implemented enterprise-grade security (TOTP 2FA, bcrypt, XSS prevention), WCAG-compliant accessibility with semantic HTML5 (ARIA labels, keyboard navigation, screen reader support), and a 95%+ test coverage suite (unit, integration, accessibility) to ensure a secure, inclusive, and maintainable platform.	

<i>Personal portfolio website</i>	May 2025 - June 2025
<ul style="list-style-type: none">• Built a responsive personal portfolio website (https://kaiiyngg.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 <i>Build-To-Order (BTO) Management System</i>	Jan 2025 - April 2025
<ul style="list-style-type: none">• 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 <i>Student Team Formation System</i>	Oct 2024 - Nov 2024
<ul style="list-style-type: none">• 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
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- 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

- Reduced data retrieval time on the Freya platform by 20% by developing and testing backend logic and RESTful APIs using Java, Spring Boot, and Postman, with DBeaver for database management.
- Engineered 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 assisted with system debugging using Python, including Pytest for unit testing.
- Applied object-oriented principles, good coding practices, unit testing, and clear documentation across all development work.
- Participated in daily stand-ups and sprint planning 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 organise 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.