

HU CHONG XERN

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Website	https://chongxern.github.io/portfolio-website/		

Availability: 1st June 2026 onwards

Education

National University of Singapore

August 2022 – Present

- Bachelor of Engineering in Computer Engineering (CAP: 4.34)
- Specialisation in Internet of Things
- Expected Date of Graduation: May 2026

Boston University Student Exchange Programme

August 2024 – December 2024

Technical Courses: Programming Methodology | Software Engineering and OOP | Data Structures Algorithms | Design Thinking | Machine Learning | Digital Design | FPGA Programming | Signals and Systems | Electrical Engineering Principles | Database Systems | Computer Networking | Operating Systems | Computer Organisation | Internet of Things | Data Science

Technical Skills: C/C++, Java, Python, C#, React, SQL, Oracle, TypeScript, HTML, CSS, OpenCV, Fusion360, Arduino, Wireshark, BitBucket and Git.

Work Experience

Data Analyst with Machine Learning at Henkel Singapore

January 2025 – June 2025

- Designed and implemented a Power BI dashboard with a synchronisation algorithm to identify energy-saving opportunities across APAC manufacturing sites.
- Packaged data analysis pipelines into self-contained executable applications, enabling scalable deployment across multiple facilities.
- Applied NLP and K-means clustering to organize project proposals, creating a reusable tool for data-driven decision-making.

QA Internship at Integro Technologies

May 2024 – July 2024

- Analysed, reviewed and modified SQL code in Oracle to ensure accuracy and efficiency when resolving ticket issues via QA test case design.
- Identified and resolved software defects by analysing system behaviour, debugging issues and collaborating with cross-team developers to implement solutions.
- Communicated findings across teams and prepared clear defect reports using Bitbucket for version control and tracking.

Project Experience

FYP Capstone Project: IoT Greenhouse Project

September 2025 – Present

- Led the design, planning and implementation of end-to-end smart greenhouse system that integrates IoT sensing, computer vision and machine learning for plant health monitoring.
- Coordinated and integrated contributions across team members, serving as the primary technical lead and system integrator for the project.
- Built and deployed a plant leaf detection model for early identification of plant disease, including dataset collection, annotation, training and evaluation.

Embedded Computer Vision Motion Tracking Robotic System

September 2025 – November 2025

- Deployed an AprilTag-based computer vision system using ESP32-CAM to facilitate real-time user tracking and distance computation for an autonomous mobile robot.
- Created a multi-task Convolutional Neural Network (CNN) for combined binary classification and 8-value corner regression, improving model accuracy by applying fine-tuning and custom data augmentation.
- Managed the end-to-end process of embedded camera integration, including low-latency frame streaming from camera module to the main server.

FinTrack Financial Management Application

March 2024 – April 2024

- Collaborated in a team of 4 to develop Java application for tracking financial activities such as spending and income, maintaining product cohesiveness and integrity.
- Implemented automated JUnit testing to enhance user experience, alongside comprehensive documentation for both users and developers.
- Employed rigorous code reviews and creatively applied data structures for improved performance, ensuring the application could securely handle up to 50 financial transactions simultaneously with no data loss or delays.

FPGA Sorting Algorithm Visualiser

January 2024 – April 2024

- Developed a sorting algorithm visualizer on an FPGA using Verilog onto Basys3 board, implementing four sorting algorithms: bubble, insertion, selection, and cocktail.
- Successfully tackled complex challenges related to digital logic design and FPGA programming, ensuring the system's reliability and reusability.
- Applied digital logic concepts such as flip-flops, digital circuits, and programmable devices to create a functional and reusable system.

BrainHack TIL-AI Competition Hackathon

May 2024

- Developed skills in voice and image recognition while participating in a competitive AI hackathon, training AI models to detect objects in images using labelled sample images of military weapons.
- Gained hands-on experience in model training and evaluation, enhancing understanding of AI technologies, applying fundamental machine learning techniques for effective model evaluation.

Co-Curricular Activities

Group Leader of Gardening Interest Group

August 2023 – Present

- Spearheaded, planned and initiated events, workshops and weekly sessions for Gardening Interest Group in Pioneer House, a Student Residence at NUS.
- Arranged group meetings for ideation and execution of gardening events, effectively incorporating diverse ideas from team members.
- Delegated tasks and responsibilities within the team and motivating existing members to actively participate in session activities, maintaining participation of each session at around 10 members.

Volunteer Experience

Volunteering at Senior Care Centre

March 2025 – October 2025

- Participated in weekly volunteering at ElderCare centre in Telok Blangah, serving up to 60 seniors
- Planned and executed activities for elderly participants such as singing and art craft sessions and managed procurements for activity programmes.

Pioneer House Flag 2025 Publicity Head

February 2025 – August 2025

- Led the publicity committee for Pioneer House Flag 2025, strategically coordinating campaigns for merchandise sales and volunteer recruitment.
- Supported fundraising efforts and community engagement sessions with the Roundbox Children Society under RAG & Flag 2025.
- Developed custom-coded applications to produce promotional videos protecting children's identities, delivering cost-effective and impactful publicity content.

Additional Information

Languages: Fluent in English, Mandarin and Malay

Interests: Enjoys playing badminton, basketball and gardening.