

# Hu Bowen

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## Education

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Ngee Ann Polytechnic, *Diploma in Cybersecurity & Digital Forensics*

Apr. 2023 – Present

- **cGPA:** 3.98/4.0
- **Top** in Cohort (AY23/24 Semester 2)
- **Vice-President** of NullSec (Cybersecurity Interest Group)
- **DSTA Polytechnic Digital Scholarship** Recipient

## Projects

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### Basic Operating System

github.com/notbowen/SimpleOS

- Developed a minimal operating system from scratch using **C** and **Assembly**
- Implemented a basic **command-line interface (CLI)** via a `strcmp` based dispatch system
- Wrote a **LCG-based random number generator** to support and integrate a playable snake game

### Data Structures Assignment

github.com/GalenLovesCheese/DSA-Assign...

- Implemented an efficient database for the assignment with **B+ Trees** in **C++**
- Wrote a **polymorphic** CSV parser to deserialize raw data into distinct **C++** object types
- Attained **top in module** with this assignment

### Rust Blog

github.com/notbowen/RustBlog

- Developed a full-stack website to host my writings
- Uses **Rust & SurrealDB** to store blog posts and hydrate the frontend
- Vanilla **HTML, CSS & JS** for the frontend

### Canteen Queue Estimator

github.com/notbowen/CanteenQueueEst...

- Computer vision project to detect and report canteen queue times for my secondary school
- Utilises a fine-tuned **YOLOv5** model to detect heads within a image slice
- Renders the queue timings with a **Flask** server hosted on a **Raspberry Pi**

## Achievements

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### DSTA Brainhack 2025 – Today I Learned-AI, *Semi-Finalist*

Jun. 2025

- Qualified for the semi-finals of a competition ranging across 4 AI fields: **ASR, CV, OCR & RL**
- Fine-tuned a **Real-Time DETection TRansformer (RT-DETR)** model on a provided dataset
- Trained multiple agents using **PPO** to solve a RL environment

### NUS Greyhats – GreyCTF 2024, *Finalist*

Jul. 2024

- Solved challenges regarding **web & binary exploitation**
- First blooded (first to solve) a **prototype pollution** based web challenge

### CSIT – The InfoSecurity Challenge 2023, *Top 5%*

Sep. 2023

- Invited to the prize-presentation ceremony at CSIT's office
- Solved cybersecurity challenges across the fields of: **forensics, cryptography, reverse engineering, open-source intelligence & web exploitation**

## Skills

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**Languages:** Python, Rust, C/C++, OCaml, Javascript

**Interests:** Artificial Intelligence, Vulnerability Research, Programming Languages