

# MAVERICK CHIN YU HENG

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## EDUCATION

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### NANYANG POLYTECHNIC

Apr 2023 – May 2026

Diploma in Electronic & Computer Engineering

**GPA 3.99**

NYP-SICK Product Center Asia Scholarship

Awarded Director's List every semester

Relevant Coursework: Computer Networking, Microcontroller Applications, Electronic Systems Design

### CATHOLIC HIGH SCHOOL (SECONDARY)

Jan 2018 - Oct 2021

GCE O-Level

**L1R5 7, L1R4 5**

## EXPERIENCE

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### MICRON TECHNOLOGY

Jun 2025 – Aug 2025

Firmware Engineer Intern

- Designed and implemented Python-based test scripts to validate new SSD firmware features, ensuring alignment with product requirements.
- Conducted white-box and grey-box testing to thoroughly assess firmware functionality and performance throughout the development process.
- Investigated and triaged firmware failures, collaborating with development teams to debug and resolve critical issues, enhancing overall firmware stability and reliability.

### WORLDSKILLS SINGAPORE (ELECTRONICS)

Mar 2024 – May 2025

Trainee & Competitor

**Silver Medal**

**Software used:** Autodesk Fusion 360 Electronic Design, LTSpice, STM32Cube Development Tools

#### Embedded Systems Programming

- Gained hands-on experience with STM32 MCUs and professional-grade hardware design, reflecting industry standards.
- Quickly and accurately analysed component datasheets to integrate them appropriately.
- Thoroughly studied and utilised common interface standards:  
UART/USART, SPI, I2C, USB
- Proficient in using common MCU features and peripherals:  
GPIO, NVIC/EXTI, RCC, DMA, Low Power modes, ADC, COMP, DAC, TIM/LPTIM, PWM

#### Hardware Design Prototyping

- Designed industry-standard analogue and digital circuits involving ICs and microcontrollers.
- Simulated circuits to identify and eliminate performance issues and errors.
- Schematic capture; PCB routing; 3D PCB visualisation to enhance design accuracy for precise fits to enclosures.

#### Fault Finding and Repair

- Diagnosed faults in analogue and digital circuits using multimeters, oscilloscopes and logic analysers.
- Performed soldering and rework to IPC standards (IPC-A-610D, IPC-7711/21A).

## POLYTECHNIC PROJECTS

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### AUTOMATED RENTAL MUSIC ROOM SYSTEM

2024

Project Lead, Group of 4

- **Objective:** Designed an automated system for managing rental music rooms using IoT and full-stack web technologies, aimed at reducing operational costs and enhancing service quality for users.
- Programmed ARM-based BeagleBone Black Wireless boards including Mikroe Click boards to manage access, monitor room conditions, and interface with the backend Flask server via Socket.IO.
- Designed and implemented a RESTful backend including SQLAlchemy (SQLite) to streamline integration, support scalability, and follow standard development practices.
- Developed an intuitive web interface using Next.js and Mantine, enabling dynamic room booking and admin monitoring.
- Prototyped scaled-down versions of the system to demonstrate its functional hardware-software integration, while focusing on aesthetics by organizing and concealing wiring for a sleek, clean design.

## POLYTECHNIC PROJECTS (continued)

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### SMART BLACK SOLDIER FLY FARM

2024

Project Lead, Group of 3

- **Objective:** Designed a smart black soldier fly farm focused on sustainability, automating insect waste (frass) collection and creating a closed-loop system where frass is used to fertilize plants and plant scraps are fed back to the insects.
- Programmed ESP32-based M5Stacks FIREs to monitor environmental factors, insect activity, and automate feeding, optimizing conditions for insect growth.
- Implemented MQTT communication with Qubitro to send real-time data, enabling remote monitoring through a dashboard and reducing man hours spent manually checking insect boxes.

## CO-CURRICULAR ACTIVITIES

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### "TURTO'S TROOP" (STUDENT VOLUNTEER GROUP)

2025

Programme Coordinator

- Designed and organized a full day of activities for individuals with muscular dystrophy in collaboration with Singapore's Muscular Dystrophy Association (MDAS), ensuring an engaging and inclusive experience that catered to their needs.

## SKILLS

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### Technical Skills:

- **Embedded C:** Experienced in low-level software and device driver development for embedded systems.
- **Microarchitecture:** Strong understanding of processor design, memory management, and ISAs.
- **PCB Design:** Familiar with designing and prototyping PCBs using Autodesk Fusion 360 Electronics Design and KiCad.
- **Full-Stack Development:** Proficient in front-end (Next.js, UI libraries) and back-end (SQL, Flask) web technologies.

### Soft Skills:

- **Team Leading:** Successfully led cross-functional teams to produce high quality solutions before deadlines.
- **Passionate About Learning:** Continuously seek opportunities to expand knowledge and skillset, staying up to date with industry trends and emerging technologies.

**Languages:** Fluent in English; Conversational Proficiency in Chinese

### Others:

- **Videography & Video Editing:** Familiar with core videography techniques including exposure settings, frame rates, and resolution. Experienced in post-production tasks such as video cutting/splicing, subtitling and applying transition effects using Davinci Resolve.

## HOBBIES AND INTERESTS

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**Drumming:** Achieved Rockschoool Grade 7 (Distinction).

**Running & working out:** Completed the 2XU Singapore Compression Run 2025 (21.1km).

**Technology Enthusiast:** Passionate about the latest trends in computer hardware and peripherals.

**Microelectronics:** Actively follow developments in microelectronics and integrated circuits, with a particular interest in industry insights shared by platforms such as Asianometry and High Yield.

## REFERENCES

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### Mr Weizhong Toh

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### Mr Alex Oh

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