MAVERICK CHIN YU HENG

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EDUCATION

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

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

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.

SMART INSECT FRASS FARM   2024
Project Lead, Group of 3
- **Objective:** Designed a smart insect frass farm focused on sustainability, automating 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 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

"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

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 Collaboration:** 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

Drumming: Achieved Rockschool 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 Asianometry and High Yield.

REFERENCES

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