Wai Yan Min Ko Ko

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waiyanminkoko.github.io/portfolio/

EDUCATION

SINGAPORE POLYTECHNIC (SP) — **SINGAPORE**
Diploma in Mechatronics and Robotics (GPA: 3.88) — *April 2021 – Present*
Secretary & Community Program Organizer of the SP International Students' Club
Completed Harvard University's CS50x: Introduction to Computer Science (2022) Course

Bukit Panjang Government High School — **SINGAPORE**
Singapore-Cambridge GCE O-Level Graduate — *January 2019 – November 2020*
MOE ASEAN Scholar (Secondary 3 – Secondary 4)

SKILLS

Software and Programming

- C++
- Python
- HTML
- CSS
- JAVA (KUKA)
- ROS
- Linux
- Inventor
- Mastercam
- Adobe Photoshop
- Canva
- Prusa
- AutoCAD
- Figma
- KNIME Analytics

Technical Skills

- Raspberry PI
- Arduino
- Project Management
- Programmable Logic Controller (PLC)
- KUKA (Cobot)
- Networking
- 3D Printing
- Robot AMR Deployment

Core Skills

- Problem Solving
- Adaptability
- Self Management
- Collaboration
- Team Management

PROJECT EXPERIENCE

Automated Guided Vehicle (Arduino & Fabrication) — **SINGAPORE POLYTECHNIC**
Project Head & Programmer, Awarded Top-6 Innovative Designs — *October 2022 – February 2023*

- Designed, fabricated, and programmed an Automated Guided Vehicle (AGV) with a unique functional gripper that efficiently performed pick-and-place and line tracking tasks, to guide the vehicle across a map while transporting a ball.
- Demonstrated expertise in utilizing technologies, such as an Arduino Board and diverse output shields, to power and control the Automated Guided Vehicle (AGV). Designed various AGV components using Inventor, while programming the fabrication process through Mastercam, and subsequently programmed the AGV with C++.

Personal IOT Assistant Device (Raspberry Pi & Web Development) — **SINGAPORE POLYTECHNIC**
Project Head & Programmer — *October 2022 – February 2023*

- Steered a team of 2 in developing a personal IOT assistant device using a Raspberry Pi board that emulated a smart home environment.
- Collaborated with team members to develop a functional Python program and web application using HTML and CSS, implementing best practices for coding and design, and troubleshooting technical issues to ensure efficient and maintainable code.

Ecobite - Sustainable Innovation Project (Prototyping) — **SINGAPORE POLYTECHNIC**
Project Head & Prototype Designer — *October 2022 – February 2023*

- Spearheaded a team of 5 to develop a prototype application on Figma that addressed the United Nations' Sustainable Development Goals (Zero Hunger and Sustainable Cities & Communities) by minimizing food waste produced and overbuying by F&B businesses.
- Implemented agile methodologies to ensure timely and efficient delivery of the project and developed sustainable business models to ensure long-term development and maintenance of the application.

Plain & Pothole Roads Image Classification (Power Apps & Lobe AI) — **SINGAPORE POLYTECHNIC**
Self-Directed AI Engineer — *August 2022*

- Developed an end-to-end Plain & Pothole Classification program by scanning for potholes to be patched, preventing road accidents. The program is built using Microsoft Power Apps, utilizing the Lobe AI algorithm and Kaggle datasets.
- Devised the application to address the challenges of maintaining Singapore's road infrastructures, averting potential problems that could disrupt the daily commutes of drivers and threaten the integrity of the country's infrastructure.

Catapult (Fabrication & 3D Printing) — **SINGAPORE POLYTECHNIC**
Project Head & Designer — *January 2022 – February 2022*

- Collaborated with a team of 4 to design and fabricate a functional catapult that launches a ball towards toy soldiers, to highlight the value of mechanical designs in creating a practical mechanism, through 3D printing & metal fabrication.
- Conducted extensive testing and analysis to ensure that the catapult met the performance standards and implemented necessary modifications and troubleshoots to achieve desired results.

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PROFESSIONAL WORK EXPERIENCE

BOTSYNC Pte. Ltd. **SINGAPORE**

Mechatronics Intern (Operations, Deployment & R&D) *September 2023 – Present*

(**Key Skills:** ROS, Linux, Prototyping, Client & Partner Collaboration, Problem Solving, Project Management)

- Developed comprehensive testing of cutting-edge algorithms developed for robot navigation and workflow enhancement while collaborating proactively with the software team to implement refinements, ensuring optimal performance.
- Spearheaded compelling robot demonstrations tailored to clients, effectively showcasing the company AMRs' capabilities. Driven by a commitment to results, these demonstrations contributed significantly to increased sales and deeper client engagement.
- Directed and coordinated the seamless deployment of the AMRs at CATERPILLAR Logistics Warehouse, ensuring the automation of their work processes. Currently spearheading preparations for the imminent deployment of AMRs at KEMIN Industries.
- Provided dedicated service and support for AMRs at Bolloré Logistics (SG), Mahindra Logistics (India), Sanmina Corporation (SG), Kemin Industries (Asia) Pte Ltd, and Wong Fong Engineering Works (SG), ensuring seamless operation and client satisfaction.

Hwa Chong Institution Boarding School (HCIBS) **SINGAPORE**

Head of the Office-Student Assistant Team (Estate Department) (Parttime) *April 2021 – Present*

(**Key Skills:** Creative Thinking, Problem Solving, Mentorship & Training, Team Management, Facilities Management)

- Trained and managed 5 NUS students and 5 ITE Interns on office duties, student welfare, and facilities maintenance, resulting in a significant decrease in errors and a remarkable improvement in quality work.
- Streamlined the procedure for the web developer to build and launch the website, saving the web developer 1 week of labor by creating a sitemap plan for Frontend and Backend process of HCIBS internal Defect and Cleaning Report System.

Technology and Trust (TNT) **YANGON, MYANMAR**

Parttime Computer Technician & Sales Assistant *January 2012 – October 2018*

(**Key Skills:** Problem Solving, Decision Making, Customer Orientation, Communication)

- Assembled, fixed, and upgraded customers' computers and networks, boosting the processing speed of PCs, internet, and server connections, while ensuring mutual trust and strong business relationships.
- Proactively engaged with customers to identify and resolve pain points related to their computers, resulting in improved customer experience and increased sales.

LEADERSHIP EXPERIENCE

Singapore Polytechnic International Students' Club (SPISC) **SINGAPORE**

Secretary & Community Program Organizer of the SP International Students' Club *July 2021 – Present*

(**Key Skills:** Multiple Stakeholders, Communication, Self & Team Management, Problem Solving, Creative Thinking)

- Provide a fun work environment where CCA members across 8 departments can collaborate and accomplish their objectives for all CCA events while tracking CCA matters and taking care of the members' welfare.
- Coordinated with the school administration, faculty, and staff to ensure smooth collaboration and participation in events, resulting in high turnout and engagement from students with at least 150 student participants per event.