Marcus Wong

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EDUCATION

National University of Singapore (Sept 2023 to Present)

- Bachelor of Engineering (Honours): Major in Computer Engineering; GPA: 4.67/5.0
- Engineering Scholars Program: 3 years BEng + 1 year Masters

Anglo-Chinese School Independent (Jan 2015 to Dec 2020)

- IB Diploma, HL: Physics, Chemistry, Mathematics; IB Score: 44/45

Work Experience

NCS Pte Ltd, Automation Intern (Feb 2nd 2023 to June 22nd 2023)

- **Implemented Automation tools:** Leveraged UiPath and Excel Macros to streamline business processes, reducing manual workload by 30 hours per month.
- **Collaboration across teams:** Actively worked with cross-functional teams to understand business processes and identify automation opportunities.
- **Developed workflow documentation:** Created detailed documentation for automation workflows to ensure long term maintainability.
- **Introduced Microsoft PowerBI:** Deployed Power BI statistics to track key project metrics, empowering leadership with data-driven insights.

KEY ACHIEVEMENTS AND AWARDS

SUTD 3D Print and Design Innovation Challenge (Sept 2020)

- **Problem Identification**: Recognized the challenge faced by the elderly in applying eye drops independently, particularly due to shaky hands.
- **Solution Development**: Designed and prototyped a 3D-printed spectacle holder with an integrated funnel, enabling elderly users to apply eye drops with ease and accuracy.
- **Achieved first place overall.**

First Global Challenge Dubai (October 2019)

- **System Development**: Designed and prototyped a ball intake feeder system and a flywheel mechanism to accurately launch balls into target goals.
- **Achieved Silver for the Zhang Heng Award for Engineering Design**

VEX Robotics World Championship in Louisville, Kentucky (April 2018, April 2019)

- **Robot Development**: Designed and built various drivetrains (e.g., tank drive, holonomic drive), arm systems (e.g., 4-bars, linear lifts), and shooting mechanisms (e.g., catapults, flywheels) to meet game and robot design requirements.
- **Control System Development:** Contributed to the creation of a robot control library, implementing an odometry system for precise autonomous navigation.
- **Achieved Division Champions of the Maths Division, overall 3rd (April 2019)**
- **Achieved Semi-finalists of the Engineering Division (April 2018)**

Singapore VEX Robotics Competition

- **Design Analysis**: Precisely identified robot and game design requirements, enabling an efficient and streamlined prototyping process.
- **Strategic Planning**: Developed game strategies to ensure effective execution and competitive performance.
- **Achieved 1st in Skills Competition (2020)**
- **Achieved 1st overall (2017-2019)**

Projects

HornetX Underwater Autonomous Vehicle Challenge (Sept 2024 to Present)

- **Control System Design**: Initiated discussions on the implementation and structure of control systems for an underwater vehicle.
- **Thrust Vectoring Development**: Contributed to the design of the thrust vectoring system, calculating the precise thrust output required for each vector to achieve the desired position in a 3-dimensional space.

Orbital: Robotic Home Monitoring (May 2024 to Aug 2024)

- **Project structure planning:** Researched and planned the communication framework between the frontend, backend and hardware, ensuring the use of appropriate tools and a logical structure.
- **Frontend and Backend Development**: Implemented the frontend and backend using ReactJs, JavaScript and CSS, while learning to utilize WebSockets for real-time video and controls communication.

LEADERSHIP

Robotics Technology Society/Robotics Club (2015 to 2020)

Vice-chairman, Logistics (2018 - 2020)

- **Resource Management:** Planned and organised key components to ensure efficient and fair distribution of resources.
- **Equipment Readiness:** Ensured the timely availability of essential equipment and spare parts, maintaining readiness for both local and overseas competitions.

Vice-Chairman, Training (2017)

- **Junior Member Training:** Trained junior members in robotics fundamentals, ensuring they developed a strong foundation.
- **Mentorship and Supervision:** Mentored and supervised junior members in developing their robots for national and international competitions.

Technical Skills

- Programming Languages: C, C++, Java, Python, Assembly, Verilog
- Microcontroller Experience: Arduino, Raspberry Pi, FPGA
- Software Version Control Systems: Git, GitHub SourceTree

Referees

- **NCS:** Kian Keong Ang (Email: kiankeong.ang@ncs.com.sg)
- **ACSI:** Foo Kam Meng (Email: kammeng@acsindep.edu.sg)