Tyler Fong

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EDUCATION

McMaster University September 2023 - Present

Electrical and Biomedical Engineering (Year 3)

- GPA: 11.5/12.0
- Awards: Deans' Honour List (2024, 2025), Faculty of Engineering Award of Excellence (2023)

SKILLS AND QUALIFICATIONS

- Proficient in programming languages: Python, C++, C, HTML, CSS, JavaScript and MATLAB
- Proficient in MS Office (Word, Excel, Powerpoint)
- Experienced in 3D modeling and laser cutting programs for prototyping: Autodesk Inventor, Solidworks, Fusion 360, KiCAD, Altium and Illustrator
- Skilled in soldering and working with microcontrollers and microprocessors (Arduino, Raspberry Pi)
- Delivered clear technical instruction and maintained strong communication across collaborative team projects

PROJECTS

Designing PCB Board for RC car

- Designed a power distribution PCB in KiCAD, incorporating voltage regulators and protection components to step down LiPo battery voltage for microcontrollers and sensors
- Performed schematic capture, assigned footprints, and optimized PCB trace width and routing for current capacity and minimal EMI
- Analyzed component datasheets to verify pin configurations, operating threshold and design considerations to select compatible parts via DigiKey and LCSC

Stock Filter Program

- Built a Python script using yfinance to automatically screen stocks based on defined criteria, improving portfolio performance by 22.3% over one year
- Implemented a data pipeline using Python libraries and Jupyter Notebook to clean, analyze financial metrics and visualize performance trends

Sumo Bots

- Designed a Sumo Bot chassis in Inventor to house electrical components and knock out competing robots
- Prototyped collision detection logic using Arduino, integrating ultrasound and IR sensor data to control motor-driven wheel movements

EXPERIENCE

McMaster's Aerial Robotics and Drone Club - *Electrical Sub Team Member* October 2025 - Present

- Developed detailed electrical circuit and communication schematics (UART, I^2C, PWM) to interface the Pixhawk flight controller with sensors, ESCs, GPS, and telemetry modules
- Designed and implemented the power distribution PCB and electrical architecture for a UAV competing in the Aerial Evolution Association of Canada Student UAS Competition

Steam Project - *Program Instructor (Co-op)* June 2024 - August 2025

- Prototyped projects and documented required parts to BOMs
- Led hands-on engineering projects by designing laser-cut components and guiding students in woodworking, PCB soldering, 3D modeling and biological techniques such as agarose gel preparation and bacterial cultivation

Bioengineering Bacteria (Course: 2P03 - Grade: 12/12) January 2025 - April 2025

- Performed experimental procedures to assess the effects of various synthetic genetic components on bacterial function
- Applied aseptic techniques to maintain sterile conditions and ensure experimental reliability
- Developed a MATLAB simulation using the Synthetic Biology Toolbox, integrating literature-derived data to predict system behavior and generate logic-based responses

Mobility Aid Design for MS Patient (Course: 1P10 - Grade: 12/12) January 2025 - April 2025

- Interviewed MS patient to propose a refined problem statement to address customer's needs
- Prototyped and optimized design through iterative testing based on user feedback and experience