Will Taylor

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Skills

Programming	**Python** *(skilled)* | **C/C++** *(skilled)* | Rust *(novice)* | Java *(adept)* | MATLAB *(skilled)* | RISC-V *(adept)* | SystemVerilog *(novice)*
Technical	**Raspberry Pi** | ARM | CAD | RF Communication | Power Electronics | **Systems Design** | Test-bench | Microfabrication Stack
Comprehensive	**Excellent Communication** | Leadership | Project Management | Self-Direction | Initiative | **Enthusiasm** | Team-Player
Certifications	Standard First Aid and CPR/AED | L1 High Powered Rocketry | Amateur Radio with Honours | Cleanroom and BSL-2

Experience

Avionics Lead (Previously Avionics / Propulsion Member)
Toronto, CA

University of Toronto Aerospace Team
JUNE 2021 - PRESENT

- Designing **STM32-series embedded system** for sensor integration and data storage, **RF communications**, and failsafe functionality.
- Designing hardwired NO2 fill-abort system for redundancy in case of system failure. **Physically implementing** and verifying electronics.
- **Defining requirements**, integrating, and overseeing: flight bay CAD, RF optimization, ground station software documentation and updates.
- **Leading team of 10** undergraduate students. Hosting presentations and educational work-sessions. Weekly meeting and brainstorming.
- Flew Canada's first experimental hybrid-propulsion rocket to 21,000' and Mach 1.3 as radio operator. Placed **first in inaugural competition.**
- **Built and up-scaled** ground station sensor array. Implemented live-operations on **sensor data-stream** and enabled automatic calibration.

Research Assisstant and Project Lead
Toronto, CA

Advanced Photovoltaics-Photonics and Devices Laboratories
MARCH 2022 - PRESENT

- Designed high-vacuum chamber and **experimental procedure** for 24h+ continuous outdoor **photonic material** measurements.
- Redesigned and greatly simplified thin-film electronic device stack to eliminate noise, **save 40% write time, and save 50% budget.**
- Programmatic 2D thin-film CAD to **turn hours of design time to minutes**, and seconds for parameter permutations.
- Fabricating and selecting 10,000+ nanoscale memristive devices for neuromorphic properties. Using **high-precision parameter analyser.**
- **Leading two undergraduates** on testing and fabrication protocols, reporting to postdoctoral associate and principle investigator.

Student Investigator
Edmonton, CA

Youreka Canada
JAN 2020 - SEPT 2020

- **Statistically analysed** population-scale trends in flu genomes as they relate to seasonal vaccines. Used two-tailed t-test.
- Wrote manuscript and research poster, leading sections on introduction and discussion. Performed **comprehensive literature search.**
- Presented our findings, winning **Best Presentation** in the local competition and winning **First Place** in the national competition.
- Peer-reviewed and **published** paper in the Canadian Science Fair Journal.

Projects

Automated Sugar Shaking for Improved Bee Parasite Screening
Toronto, CA

University of Toronto
JAN 2022 - MAR 2022

- Built **requirements model** from firsthand interaction with stakeholders. Validated candidate designs with stakeholder approval.
- **Designed and documented proof-of-concept prototype** to spray sugar and shake beehive panels to dislodge varroa mites.
- Personally designed and prototyped sugar-sprayer and cam-and-follower shaking mechanism. **Tested and iterated on concept.**
- Worked in a team of four to develop a comprehensive design timeline and presented our work at a showcase to local residents and stakeholders.

Education

University of Toronto
Toronto, CA

Bachelor of Applied Science in Engineering Science
SEPT 2021 - PRESENT

- Major in Engineering Physics with a focus on Electrical and **Computer Engineering**. Minor in **Robotics** and Mechatronics.
- *Courses:* Digital and Computer Systems, Algorithms and Data Structures, Waves and Modern Physics, Quantum and Thermal Physics, Molecules and Materials, Vector Calculus and Fluid Mechanics. Series of three integrative and requirement-based design courses.

Achievements

2023	**Dean's Honour's List (x3),** University of Toronto Faculty of Applied Science and Engineering	*Toronto*
2022	**First Place,** Launch Canada Competition	*Cochrane*
2022	**Research Fellowship (x2),** Advanced Photovoltaics-Photonics and Devices Group	*Toronto*
2021	**Top in School - Science and Technology,** Edmonton Public School Board Division Awards	*Edmonton*
2020	**First Place,** Youreka Canada Competition	*Edmonton*