Matthew Pihowich

matthewpihowich@yahoo.com | 952-693-5227 | www.linkedin.com/in/mpihowich | matt740.github.io

Education

University of Toronto (Sep 2022 - May 2026)

Bachelor of Applied Science in Robotics Engineering, Machine Intelligence Minor.

3.91 GPA, Dean's List.

- Relevant Courses: Structures and Materials, Thermodynamics and Heat Transfer, Vector Calculus and Fluid Dynamics Molecules and Materials, Digital and Computer Systems, and Praxis Engineering Design courses.

Experience

Blue Sky Solar Racing, Mechanical Engineer (Jan 2024 - Present)

Blue Sky Solar Racing, Structural/Fabrication Engineer (Sep 2022 - July 2023)

- Fabricated a kevlar-carbon battery box with hand layups and designed battery-box latching based on structural regulations for withstanding 20g acceleration.
- Designed DRLs and Indicators with housings in CATIA V6/3DX, manufactured with 3D printing PLA, thermoforming PETG, and using hand tools, and validated viewing angles and brightness in compliance with UNECE Regulations.
- Organized and led 2-3 person work sessions for top aero body array installation and sandwich panel layups.
- Formulated and executed testing procedure for Flow Visualization through research and physical testing in collaboration with Aero subteam that cut application time to 4 man-hours while increasing quality from previous iterations.
- Operated and troubleshooted telemetry and state of charge simulations for over 1000 km of on-road testing, while communicating information and strategy recommendations to the driver.

UTAT Rocketry, Avionics Team (Jan 2024 - Present)

- Researched LiPo battery discharge characteristics for 6 different cell chemistries including LCO and NCM.

Skills

- CAD/Design: CATIA V6/3DX (GSD, Part Design, Assembly Design), Onshape, Solidworks, Fusion 360.
- Finite Element Analysis Structural Simulation: Ansys and Onshape.
- Hands-on Manufacturing: Composites, Mold Making, Soldering, 3D Printing, Dremeling, and Sanding.
- Programming: Python, C, Matlab, HTML, CSS, RISC-V, Verilog and FPGA.
- Proficient in Engineering Design with Requirements Models.
- Strong Analytical Problem-Solving and Technical Communication Skills.

Projects

GaitKeeper Assistive Walking Device (Feb 2023-Apr 2023)

- Designed a Rollator for a stakeholder with a disability that increased ergonomic comfort and stability during motion.
- Modeled, selected material, and simulated multiple iterations of rollators in Onshape to determine structural strength-to-weight ratios and ensure adherence to ISO safety standards for rollators.

Greenhouse Goblin Prototype **(**Jan 2024)

- Implemented ease of access features into structural elements of a greenhouse control box such as a hinged lid, static latch, and retained buttons using Fusion 360.
- Prepared drawings in AutoCAD to laser-cut lid and laser-etch user instructions near buttons for ease of use.

Awards/Achievements

- 2024 Clarke Prize Environmental Design Challenge Finalist.
- Praxis II Rowe Award Finalist.
- Domestic Engineering Scholarship and Harvey Aggett Memorial Scholarships.

Activities

- Principal Cellist in Iron Strings Quartet and Skule Orchestra with several school-affiliated performances.