Matthew Gencher

BASc Mechatronics Engineering

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Summary of Qualifications

- CAD using AutoCAD and SolidWorks
- CAM experience in Mastercam
- Machining experience including mill and lathe
- Python, C++, C, and JavaScript coding experience
- PCB design in KiCad and PCB assembly
- Allen Bradley PLC and HMI software experience

Experience

December 2023 – Present

Controls Engineer / **Automation Alternatives, Woodbridge ON**

- Wrote PLC ladder logic for a butyl dispensing machine as part of solar panel manufacturing processes.
- Developed Keyence XG vision code to ensure produced parts met customer defined specifications.
- Optimized solar panel manufacturing processes to save over 10% on takt time.
- Travelled to the USA to install manufacturing machines and train operators.

September 2018 – July 2023

Propulsion & Electrical Project Lead / **Waterloo Rocketry, Waterloo ON**

- Developed the safety vent valve electrical system for the oxidizer tank using KiCad.
- Designed and tested a new injector valve which saved approximately 4% of the total rocket weight.
- Designed and built a test-stand capable of supporting a 100lb tank in up to 50 km/h winds.
- Wrote and tested code in C for a parachute deployment drop test from 5000ft.

January – August 2022

Aerospace Engineering Co-op / **Columbiad Launch Services, Kitchener ON**

- Designed a thruster for a CubeSat propulsion system using a novel nano-thermite fuel.
- Simulated fuel flow through the injector using ANSYS Fluent.
- Developed a test setup for data acquisition of the prototype engine.
- Researched alternative fuel ignition methods including laser ignition and plasma ignition.

May – August 2021

Software Quality Assurance Specialist / **Siemens Healthineers, Ottawa ON**

- Ran manual tests for a blood analysis system and reported results and bugs using TestRail and Redmine.
- Automated software test runs in python using Appium and PyTest.
- Authored Software Testing, Verification & Reliability (STVR) documents for newly developed and updated in-house software.

January – April 2020

Mechanical Engineering Co-op / **Curtiss-Wright Indal, Mississauga ON**

- Automated helicopter dynamic analysis simulations using Batch and Python scripts.
- Adapted simulation models to accommodate requirements set by the client.
- Obtained required NATO Confidential Security clearance and Controlled Goods clearance.

Education

April 2023

BASc Mechatronics Engineering / University of Waterloo, Waterloo ON

- Graduated with Distinction; 87.4 Cumulative Average
- Designed the PCB and wrote Bluetooth client and server for a 1-axis laser skate profiler for capstone project.