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
- Controls and PLC programming experience

Experience

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 for parachute deployment for a drop test from 5000ft in C.

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.
- 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.

SEPTEMBER – DECEMBER 2020

Server-Side Cloud Developer / Espial Group, Ottawa ON

- Implemented new features and functions for a cloud-hosted IPTV (Internet Protocol Television) solution.
- Wrote unit tests to verify that new code was functional before deploying to production.
- Participated in daily team stand-ups, ensuring effective coordination for the current sprint.

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.

MAY – AUGUST 2019

Full Stack Developer / Leap Tools Inc, Toronto ON

- Designed and created web pages in JavaScript using Redux, Polymer and Lit-Element.
- Wrote and tested API backends in Python using Django and Django Rest Framework.
- Worked within a small team to design an intuitive and aesthetically pleasing UI.

Education

APRIL 2023

BASc Mechatronics Engineering / University of Waterloo, Waterloo ON

- Graduated with Distinction