



Mechanical Engineering – University of Waterloo graduating 2023

Skills

- Rapid Prototyping — Familiarity with 3D printing, laser cutting, and machine shop tools for proof-of-concept purposes
- C, C++, Python — Developed libraries and programs for running microfluidic systems, utilizing version control via git
- SolidWorks, AutoCAD — Knowledge of GD&T to develop and interpret mechanical drawings
- Electrical Systems Design — Capable of creating, interpreting, and installing electrical systems; skilled in soldering and wiring
- Excel and MATLAB experience for data analysis & computational iteration, previously used to inform prototype design alterations
- Jira and Confluence competency for project tracking purposes, adherence to an ISO 13485 quality management system
- Experience working within a CL2 laboratory and alongside Class 3B lasers
- Enjoys collaborating with people of various backgrounds towards a common goal

Relevant Experience

Biomedical Engineering Associate - Vital Biosciences

Mississauga, Ontario

May.2022 – Sep.2022

- Designed centrifugal microfluidic systems using CAD tools in an iterative manufacturing process
- Developed DFM SolidWorks models of microfluidic consumable according to injection molding constraints
- Modularized the design of the microfluidic system on the consumable to increase the rate of data collection
- Supported manufacturing team efforts by designing jigs to increase consumable quality and throughput
- Generated C++ program to run workflow on the instrument, following constraints established by assay team
- Determined next steps in design iterations using data compiled from runs on the microfluidic system

Biomedical Engineering Co-op, Chipcare Corporation

Toronto, Ontario

May.2021 – Nov.2021

- Optimized & troubleshooted a microfluidic system using software and CAD tools according to pre-existing design limitations
- Developed Python source code to run a prototype for a microfluidic point-of-care STI diagnostic device
- Supported assay team activities by providing 3D printed or source code solutions, ensuring accuracy and repeatability of experiments
- Generated documentation following SOPs for experiments and maintained version control using git
- Analyzed data compiled from prototypes, sharing findings with assay & engineering team to inform next steps on prototype development
- Investigated alternative pathways for product development by writing programs in C++ to transfer to an Arduino-based system
- Communicated with cartridge vendors to propose solutions to manufacturing concerns for product quality assurance

Test Jig Design Engineer, I-Gard Corporation

Mississauga, Ontario

Jan.2020 – Apr.2020

- Employed SolidWorks to design the mechanical components of test jigs that were used to streamline production testing
- Created electrical drawings in order to implement (wire, solder) said circuits into new and existing test jigs
- Consulted with operator team to discuss process improvements which were then implemented in final fixture designs
- Enhanced the performance of jigs by sourcing the necessary parts and components from various distributors
- Updated SOP's, testing & design documentation in accordance with the updated mechanical and electrical components of fixtures

Junior Designer, Plan Group

Concord, Ontario

Sep.2020 – Dec.2020

- Generated documentation to support project related developments including Electrical, Plumbing and shop drawings in AutoCAD
- Worked hand in hand with contractors to update drawings/specifications based on change notices and as-built drawings
- Facilitated post work term operations by reviewing project documentation, generating procedures, and maintaining document control