JEREMY HALL

MECHANICAL ENGINEER

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SKILLS

MECH & CAD

- **SolidWorks** used on various projects involving **GD&T**, **FEA Analysis**, and **sheet metal design**
- Design 3D models and engineering **technical drawings** based on **DFM/DFA** principles
- **PDM (SolidWorks)** to manage design data and organize **BOMs**
- 3D Printing, machine processing, and CNC
- Analysis techniques such as stress/strain, cost, and failure

SOFTWARE & HARDWARE

- **C/C++**, **Python**, Java, Ruby, and VBA used in various personal & professional projects
- **Arduino** used for building mechatronic prototypes
- **MATLAB**, ANSYS, and Visual Studio

EXPERIENCE

Advanced Dynamics | Mechanical Design Engineer

Jan - June 2020

- Collaborated in the design and manufacturing of custom heavy material handling systems (uplifters, dwiring machines, turntables, etc.)
- Produced part and assembly **CAD** models & drawings in **SolidWorks** using **DFM/DFA** principles
- Diagnosed and redesigned **non-conforming parts** during manufacturing
- Computed proper **fits** and **tolerances** using manufacturer catalogues and **GD&T** principles
- Managed models and drawings within the **SolidWorks PDM** workflow

Pratt & Whitney Canada | Quality Inspection Assistant Supervisor

May - Aug 2019

- **Managed priorities** of engine parts through the **SAP** system
- Coordinated with **multiple teams** of quality inspection engineers on organizational & quotidian duties
- Improved the employee **schedule management** system
- Created detailed **instruction manual** on quality inspection supervisor procedures

EDUCATION

CONCORDIA UNIVERSITY | Bachelors in Mechanical Engineering Co-op

Sep 2016 - April 2021

- Member of the Institute for Co-Operative Education
- Dean's List Winter 2021

PROJECTS (PROFESSIONAL & PERSONAL)

Crossover Platform | Advanced Dynamics

April - June 2020

- Designed a custom steel crossover platform for pedestrian use in client's factory using **SolidWorks**
- Created assembly and part **models** and **technical drawings**
- Collaborated with **lead engineers** for design decisions
- Referenced **manufacturer catalogues** and used **industry standard safety measures**

Laser Program | Concordia Lanthanide Research Group

June - Aug 2021

- Improved the X-ray laser program by creating an automated warm-up routine, experiment timer, and service hour tracker using **C++**
- Created a **custom C++ environment** for testing
- Upgraded **UI** for ease of use
- Coordinated with Amptek engineers and catalogues to ensure **safety measures** were maintained

Shock Tube | Capstone Project, Concordia University

Sept 2020 - April 2021

- Redesigned & manufactured a shock tube for the aeronautics lab to withstand over **300 psi impulse** pressure and full vacuum while **preserving** a **sealed environment**
- Designed **clamping mechanism** to replace bolts to **decrease time** needed for experiments
- Improved design by **reducing weight** by over **50%** while conforming to **ASME safety standards** for pressure vessels
- Conducted **FEA simulations** to compute integrity of parts and assemblies, verified analysis with testing

Computer Programs | Personal

Various

- 3D voxel engine in C++ and OpenGL
- 2D falling sand simulation in C++
- Automated 2D car simulator using computer vision in C++