

Core Skills and Competencies

- AutoCAD
- SolidWorks
- Visual Basic
- Excel
- Java
- Python
- C
- MATLAB
- ArcGIS
- Machine Shop Knowledge
- Survey Equipment
- Basic Lab Skills

Technical Professional Experience

Data Input Operator | Medicine Hat Municipal Works

May 2019 – Aug 2019

Reporting to an Engineering Technician, evaluated municipal works assets throughout the city to identify assets in need of replacement or repair.

- **Data Assessment:** Physical assessment of over 5000 traffic signs to prioritize replacement based on location, reflectiveness, damage, and type of sign. Evaluated various municipal assets by using survey equipment and then imported collected data into ArcGIS and Excel for assessment.
- **Communication:** Engage ArcGIS specialists and municipal works stakeholders to discuss opportunities and priorities associated with the repair or replacement of roads during a 2 million dollar road overlay project.
- **Time Management:** Thrived in an independent and self-driven operator role, managing own priorities and timelines.

Technical Project Experience

Crosswalk Assessment Matrix | Medicine Hat Municipal Works

May 2019 – Jun 2019

Aided civil engineers in creating additional features for a tool to quickly assess and prioritize placement of crosswalks in order to provide pedestrians with a safe way to cross roads.

- **Weighted Design Matrix:** TAC pedestrian crossing control guidelines are used as design parameters for the assessment matrix, these are given a weight and then summed into an overall crosswalk grade, which is used to prioritize the type and location of the crosswalk to be implemented. 20 crosswalks have been assessed using the matrix this year.
- **Data Analysis:** Analyzed pedestrian crossing opportunities based on traffic volume and road width data by with an Excel model that I designed.
- **Data Collection:** Utilized Miovision traffic counting equipment to collect traffic volumes. Determined road crossing length, proximity to other crosswalks, and high pedestrian volume areas using ArcGIS.

Waves & Music Software Project | UBC

Sep 2019 – Oct 2019

A software assignment to represent sound waves as an object and perform operations on them using Java.

- **Sound Wave Manipulation:** Created a software to manipulate audio files in a variety of ways including volume adjustments, add echoes, superimpose waves, filter frequencies, and group sound waves by similarity.
- **Team Work:** Collaboration with a partner using GitHub for task management and simple communication. Peer reviewed and wrote tests to find and fix bugs. Obtained 100% branch coverage.
- **Usage:** I use the software to create backing tracks to play guitar over, and filter out frequencies from recordings to produce a better sound.

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Autonomous Robot Claw Project | UBC

Jan 2019 – Feb 2019

A team-based course assignment to design an Arduino controlled metal claw that detected objects and grabbed them.

- **Machining:** Built claw out of aluminum sheets by using different hand tools. The claw included a platform to hold the Arduino that was connected to the claw with constructed hinges.
- **Prototyping:** Modeled preliminary designs using SolidWorks and paper, moved forward with most promising design.
- **Testing:** Stress tested grip strength of the claw and discovered the first design melted the servo motor. Created new design that put stress onto the metal instead of the servo.

Rainwater Collection System Model | UBC

Feb 2019 – Mar 2019

A team-based course assignment that used Excel to simulate rainwater collection system and determine the optimal design for an isolated community.

- **Component Modelling:** Developed Excel models for different sections of the collection system. This included a variety of pumps, water purification systems, location, environmental impact, cost, and energy generators.
- **Satisfaction Assessment:** Determined stakeholders satisfaction levels on the different parts of the model. A satisfaction function was created to optimize an overall satisfaction level based on certain combination of components.
- **Prototyping:** Physically tested pumps and filters to determine the loss in energy from moving water. From the results an equation was created and used in our component modelling.
- **Project Management:** Our team created a project plan to assign tasks and reassign tasks based on the teams progress, allowing us to complete the project in a timely manner.

Education

Bachelor of Applied Science in Engineering Physics | University of British Columbia

Sep 2018 – Apr 2023 (Expected)

Volunteer Experience

Graduating Class President | Medicine Hat High School

Nov 2017 – Jun 2018

Led a team of students who organized the graduation ceremonies for 250 students.

- **Budgeting:** Designed and sold apparel as well as organized outdoor movie on large outdoor cinema allowing tickets to be subsidized. Resulted in the least expensive ticket in the last 10 years.
- **Leadership:** Organized weekly meetings and aided team members with their respective roles. Actively sought the student bodies opinions through online polls and incorporated them into the graduation ceremonies.

Interests

- Guitar
- Duplicate Bridge
- Camping
- Travel
- Board Games
- Fishing