

# Cole Haraga

Edmonton AB

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## Engineering Co-op Program

### Academic & Co-op Status:

**Computer Engineering, BSc Co-op, University of Alberta**

**Completed Academic Terms**

**Completed Co-op Terms**

**Availability Starting January 2023**

Class of 2024

5 of 8

1 of 5

8 months

### Work Experience:

#### **Automation and Data Science Engineer | Gov. Canada AAFC Nano**

May-Aug. 2022

- Sole programmer and data scientist for a lab with 3 ongoing projects in a lab of 6 members in a hybrid remote and in-person position. Collaborating with all members of this team, mainly with the head research scientist for multiple projects and timeline requirements.
- Collaborated directly with the lab supervisor to program and design protocols/experiments in Python for robots that conduct the experiments of this lab. Created calculators for nanoparticle and DNA/RNA solution concentrations also in Python.
- Built a SharePoint website to automate and lighten administrative burden, with collaboration with the full time scientists for user accessibility. Using Microsoft Office platforms: SharePoint, Power Automate, Power Apps, Excel and Forms to build and automate systems such as incident reporting that I presented to Gov. Canada Occupational Health Safety who reviewed and approved for nation-wide use.
- Designed and created a machine learning neural network training set and validation set in Python, for high throughput of the experiments in order to allow for predictability of experiments to limit the uncertainty in nanotechnology. Implemented this program into Knime data science platform for future usability of the full-time scientists at this lab.

#### **Farm Hand | Skiff AB.**

On-going

- Grew up Independently maintaining multiple farms simultaneously. Mainly solo effort, for larger jobs in collaboration with other farmers. Operating and maintaining heavy machinery, some of which are over half a century old.
- Construction skills exercised such as: building planning, electrical work, plumbing and carpentry.
- Time management being an important skill in order to schedule projects into the time frame of a single farm season and long term goals.

### Personal Projects:

#### **Personal Website | HTML5, CSS, Java Script**

- Using HTML5, CSS and Java Script, created a personal website to learn these skills and learn how domain and web service operations work: coleharaga.ca

#### **Road Map of Edmonton | C++**

- Using images of Edmonton AB and coordinates of the road, a GPS map of Edmonton for the shortest path between points, multiple paths can be displayed at one time. Used Breadth First Search algorithm, Dijkstra algorithm

#### **Display and Sort | ARM Thumbset2**

- Using ARM Thumbset2 built a display and sorter to display and sort ASCII characters in order of their hex/decimal chart order.

#### **Traffic Light | VHDL**

- Implemented VHDL code into a zybo board to display red or green lights that would swap colours, 'emergency vehicle' button to swap the lights instantly and a 7-segment display on clock time to count-down to light switch.

### Additional Information:

- Team Canada and academy baseball throughout highschool.
- Class 5 drivers license (graduated or non GDL).
- PADI Rescue Scuba Diver.
- Certified sailor for lakes and oceans.