

# Anna Verkhovskaya

3B Mechatronics Engineering Student at uWaterloo

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## SKILLS SUMMARY

**Rapid Prototyping:** Personal projects including [5-axis CNC watercolor painting robot](#), [3D modelling by tracking a pen through space](#), and [counting the number of cells in an image](#). More at [annav.ca](http://annav.ca).

**Electronics:** Analog and digital circuit design. Sensor interfacing and motor control. PCB layout using DipTrace and Eagle. Hand and reflow soldering.

**Lab Equipment:** Familiarity with lab equipment including oscilloscopes, signal generators, and spectrum analyzers.

**Certifications:** Amateur Radio Operator Certificate (VE6RKH).

**Mechanical Design:** Knowledge of mechanical engineering principles from coursework, including static analysis, machine elements, and finite element analysis.

**Mechanical CAD:** Experience using AutoCAD, SolidWorks, and OnShape.

**Machine Shop:** Prototyping using CNC mill, lathe, bandsaw, laser cutter, 3D printer.

**Software:** C, C++, Python. Work experience using embedded linux, and programming FPGAs using VHDL. Wrote an RTOS.

**Communication:** Hack the North organizer responsible for hardware.

## EXPERIENCE

**Kodiak Robotics** (Mountain View, USA) - **Controls Intern** September - December 2019

- Developed brake, steering, and throttle control on a new model of self driving truck.
- Integrated the new controls into the existing codebase and implemented parking lot driving.

**Cognite** (Oslo, Norway) - **3D Engineering Intern** January - April 2019

- Improved the performance of a 3D rendering engine.
- Raised frame rate from 15 FPS to 23 FPS, reduced file size from 98 MB to 32 MB, and halved the time to first visible geometry on the main benchmark model.

**Google** (Mountain View, USA) - **Software Engineering Intern** May - August 2018

- Built a prototype integration of a YouTube page for Google Assistant's Smart Display product.
- Worked with embedded audio and video.

**Imagine Communications** (Toronto, Canada) - **Hardware Intern** September - December 2017

- Worked on an FPGA-based product that routed uncompressed video over 100GB/s ethernet.
- Wrote VHDL subsystems for redirecting video and filtering PTP packets on busy networks.
- Automated product setup using Python, saving field technicians hours on each new installation.

**Microactuation Lab Group** (Compiègne, France) - **Hardware Intern** January - April 2017

- Designed and built a hall effect-based 2D tracking system with 10µm resolution.

## EDUCATION

**University of Waterloo** September 2016 to April 2021

3B Honors Bachelor of Applied Science - Mechatronics Engineering