

# CONNER CURRIE

BASc in Mechatronics Engineering

@ connercurrie@gmail.com

📞 925-660-2218

🌐 <https://github.com/ConnerCurrie>



UNIVERSITY OF  
**WATERLOO**

## WORK EXPERIENCE

Origin Laboratories

Hardware Validation Engineer

ORIGIN

📅 June 2020 – August 2020 📍 San Francisco, California

- Designed and implemented electro-mechanical systems for validating the functionality and reliability of **3D printing** assemblies
- Developed Hardware In the Loop (**HIL**) applications for validation of 3D printer firmware using **Python**, **Node**, **Javascript** and **C++**
- Contributed to 3D-printed **COVID-19** nasopharyngeal test swab production process
- Developed **image processing** scripts for 4K projector quality validation and calibration using **Python**

Uber ATG

Hardware Validation Engineer

Uber

📅 Jan 2019 – Aug 2019 📍 San Francisco, California

**Project: LiDAR Laser Calibration & Validation System**

- Developed and implemented high-precision **Computer Vision** algorithms in **Python** for infrared image processing using **OpenCV**
- Designed an actuated **electro-mechanical system** for orienting **LiDAR** units at highly precise angles
- Developed a **control system** to actuate the assembly based on the measured position of the laser beam

**Project: Automated Laser Eye-Safety Test System**

- Designed an actuated, automated **3D positioning** system for orienting optical power sensors
- Characterized laser-diode power profiles using an **oscilloscope**
- Assisted senior engineers in producing the **laser-class** assessment report for a **LiDAR** product
- Designed a **hardware-interlocked** enclosure for **EOL** test operation

**Project: Hardware Validation Test Development**

- Produced hardware manufacturing validation tests for **LiDAR**
- Deployed software to a production line and trained test operators
- Developed **HIL** software applications in **Python** and **C++**
- Implemented statistical models for **LiDAR point-cloud** bench-marking to present to engineering upper-management using **Python**

Clearpath Robotics

Robotic Applications Engineer



📅 May 2018 – Aug 2018 📍 Kitchener, Ontario

- Developed **image processing** scripts for characterizing cameras
- Used **Solidworks** to design fixture prototypes for passive autonomous package delivery applications
- Developed automation scripts using **Python** and **C++** that reduced employee data processing time by up to **80%**

## LANGUAGES

(>4yrs Exp.): Python C++ Matlab

(>2yrs Exp.): C C# JS

## DESIGN SKILLS

Test Design Automation HIL  
Instrumentation 3D Printing Altium  
Machining Soldering SolidWorks  
SPI I2C RS232

## PROJECTS & TEAMS

Autonomous Search & Rescue Robot  
Course Project

📅 September 2018 – December 2018

- Developed **PID** control system for motor control in **C++** from scratch
- Developed drivers in **C++** for motors, **IMUs** and ultrasonic sensors
- Developed sensor fusion, localisation and **DSP** algorithms
- Debugged system with digital logic analyzer and **oscilloscope**

C++ Sensor Fusion Embedded

Computer Vision Lead

UW Autonomous Sailboat Design Team

📅 December 2017 – April 2018

- Created applications in a Linux environment using **OpenCV** and **TensorFlow** to identify buoy objects for boat navigation
- Interfaced **Computer Vision** applications with a Jetson single-board computer running **ROS** which handled controls via peripheral controllers

Python OpenCV Linux C++

## INTERESTS

⚙️ **DIY Instrument Creation**  
I have built instruments like electric guitars, pedals and drum kits

💓 **Rock Climbing**  
I enjoy indoor and outdoor climbing