

# Joshua O'Reilly

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/in/joshua-oreilly

## Experience

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### Research Assistant | University of Ottawa

Jan 2019 - Present

- Created batch job to run simulations, and perform graphing and analysis of results in MATLAB
- Programmed autopilot hardware stack on Pixhawk 4 and Raspberry Pi with Simulink Embedded Coder and Python

### Software/Mechanical Engineering Intern | Romaeris Corporation

Aug 2018 - Dec 2018

- Re-wrote multi-threaded aircraft monitoring system with Python and OpenCV, allowing for arbitrary number of concurrent onboard cameras, and improved frame rates by 50%
- Designed and simulated robotic taxiing system for unmanned transport aircraft with SolidWorks and ANSYS Workbench

### Robotics Intern | Zentrum für Mechatronik und Automatisierungstechnik

Jan 2018 - April 2018

- Wrote control software to automatically align 6-DOF robotic arm with riveting surface with ROS and Python
- Re-wrote data collector read and write speeds by 30 times
- Project was a finalist for Airbus Fly Your Ideas 2019 Competition

### Co-Founder and Co-Captain | uOttawa Bionics

Aug 2017 - June 2019

- Acted as project manager for team of 25 engineering students in designing and manufacturing a rehabilitative hip exoskeleton for stroke patients
- Wrote PID controller for stepper motor controller and RFComm script for wireless communication with Python and C
- Designed, simulated and manufactured parts with SolidWorks

### Teachers Assistant | University of Ottawa

Sep 2019 - Dec 2019

- Taught Arduino, MATLAB, SolidWorks and basic machine shop skills in product design class

### Makerspace Coordinator | Richard L'Abbé Makerspace

Sep 2016 - April 2017

- Taught 3D printing, Arduino, soldering, laser cutting and CAD to students and entrepreneurs

## Education

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### BASc in Mechanical Engineering and BSc in Computing Technology

University of Ottawa

2015-2020

5th year, 9.4 CGPA

## Awards

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2019 | NSERC

Undergraduate Student  
Research Award

2018 | NSERC

Experience Award

2018 | Ontario

Professional Engineers  
Foundation for Education  
Scholarship

2018 | International  
Experience Award

2015 | Dean's Merit  
Scholarship

## Tools

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### Software

Python

C++

MATLAB/Simulink

Arduino

Git

ROS

L<sup>A</sup>T<sub>E</sub>X

### Mechanical

SolidWorks

ANSYS Workbench

### Languages

English

French