Joshua O'Reilly

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Education

BASc in Mechanical Engineering and BSc in Computing Technology – 9.4/10 GPA Ottawa, ON
University of Ottawa *2015 – 2020*
Awards: NSERC USRA, NSERC Experience Award, OPEFE Scholarship, Dean's Merit Scholarship

Experience

Software/Mechanical Engineering Intern Ottawa, ON
Romaeris Corporation *Fall 2018*
Improved UAV camera system frame-rate by 50% with threading and processes using Python and OpenCV
Designed and simulated UAV taxiing system using SolidWorks and ANSYS Workbench

Robotics Intern Saarbrücken, DE
Zentrum für Mechatronik und Automatisierungstechnik *Spring 2018*
Wrote control software to automatically align 6-DOF robotic arm with riveting surface using Python and ROS
Improved read and write speeds of robot database by factor of 30 using Python and Pandas

Teaching Assistant Ottawa, ON
University of Ottawa *Fall 2019*
Taught Arduino, MATLAB, SolidWorks and machine shop skills in product design class, corrected assignments
Guided students through design process of revamped tractor exhibit for Agriculture and Food Museum

Makerspace Coordinator Ottawa, ON
Richard L'Abbé Makerspace *Sep 2016 – April 2017*
Taught workshops in Arduino, soldering, 3D printing, laser cutting and CAD to students

Research

Research Assistant Ottawa, ON
University of Ottawa *Jan 2019 – Sep 2020*
Automated gain selection for airship dynamic model with batch simulation and analysis job in MATLAB
Developed autopilot stack with Pixhawk 4 and Raspberry Pi using Simulink Embedded Coder and C++

Undergraduate Thesis Ottawa, ON
University of Ottawa *Fall 2020*
Performed literature review of legged robots and aggregated performance metrics
Modelled and simulated two leg topologies for beachfront litter collection application, selected optimal topology

Leadership

Co-Founder and Co-Captain Ottawa, ON
uOttawa Bionics *Aug 2017 – June 2019*
Managed team of 25 engineering students in designing and manufacturing a hip exoskeleton for stroke patients
Designed and manufactured parts using SolidWorks, and developed motor position controller using Arduino

Publications

E. Lanteigne and J. O'Reilly, "Multibody Dynamic Modeling and Control of an Unmanned Aerial Vehicle under Non-Holonomic Constraints", *2020 International Conference on Unmanned Aircraft Systems (ICUAS)*, Athens, Greece, 2020