

Seamus Johnston

Mechatronics Engineering 2020

U.S/Canadian citizen seeking roles to advance my knowledge in the field of robotic software design

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SKILLS

Languages	C++, Python, Arduino, C, XML, Bash, C#, MySQL
Libraries	Boost, Eigen, ROS, Gazebo, OpenGL, OpenCV, OROCOS KDL
Hardware	3D Printing, Laser Cutting, Arduino, Raspberry Pi, ARM
Electrical Design	AutoCAD, SolidWorks, Soldering, KiCad, Oscilloscope

PROJECTS

Co-Founder/Controls Lead

UW Sailbot - University Funded with 40 members

May 2016 - Present

Created an autonomous sailboat to compete in the International Robot Sailing Regatta

- Competed in first international regatta placing 2nd out of all Canadian entries
- Developed velocity optimized GPS path planning algorithm in Python
- Designed entire ROS architecture for autonomous control on NVIDIA Jetson TX1
- Wrote an OpenGL simulator for ROS navigation development and data visualization

EXPERIENCE

Robotics Software Developer

Trexo Robotics

Jan 2018 - Apr 2018

Designed a gait trajectory planner and control loop for adolescent physical rehabilitation

- Wrote a gait trajectory controller to enable a bipedal exoskeleton to walk on a treadmill in both open and closed loop modes with configurable joint limits
- Wrote a real-time control loop with RTT ROS, increasing loop frequency by 1000%
- Designed a simulator using Gazebo with a custom ROS control loop plugin

Robotics Engineering Intern

2G Robotics

May 2017 - Aug 2017

Created a light simulator to model and correct the light distribution of LEDs on the seafloor

- Used C++ to design a ray tracing algorithm and a Monte Carlo simulator
- Designed and implemented image rectification algorithm using OpenCV
- Performed circuit board testing and design verification using an oscilloscope

Software Developer

Tigercat Industries

Sept 2016 - Dec 2016

Developed software and PCBs for use in the deployment of a telematics system

Robotics Research Assistant

University of Waterloo

Jan 2016 - Apr 2016

Designed an intelligent walker that helps the elderly by planning paths around obstacles