Seamus Johnston

Mechatronics Engineering 2020

Seeking roles to push my knowledge in the field of robotic software design

(647) 995-4375
seamusbjohnston.com
sbjohnst@uwaterloo.ca
github.com/SeamusJohnston
linkedin.com/in/seamusbjohnston

SKILLS

Languages	C++, Arduino, C, Python, XML, Bash, C#, MySQL
Electrical | Design	AutoCAD, SolidWorks, Soldering, KiCad, Oscilloscope
Hardware	3D Printing, Laser Cutting, Arduino, Raspberry Pi, ARM

PROJECTS

Co-Founder/Controls Lead

UW Sailbot — 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
- Designed preliminary path planning algorithm for GPS based navigation
- Built ROS architecture for autonomous/manual control on NVidia Jetson TX1
- Managed and helped deploy a buoy tacking algorithm using OpenCV

EXPERIENCE

Robotics Engineering Intern

2G Robotics — May 2017 – August 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

- Designed a PCB/automated tester to test critical power modules for defects
- Designed C# application interacts with the factory telematics computers and configures satellite messages, wireless settings, serial ports and provisions firmware
- Wrote Arduino program for power tester circuit, coded to ensure accurate timing

Robotics Research Assistant

University of Waterloo — Jan 2016 - Apr 2016

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

- Designed preliminary model in SolidWorks, machined handles and handle supports
- Wrote a package with components for visualization and control input from Arduinos
- Customized path planning algorithms in ROS to allow for Ackermann drivetrains
- Utilized SLAM algorithms to create real time maps and set goals with RTabMap