

Seamus Johnston

University of Waterloo Mechatronics Engineering 2020

U.S./Canadian citizen seeking roles to advance 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++, Python, Arduino, C, XML, Bash, C#, MySQL, Matlab
Libraries	Boost, Eigen, ROS, Gazebo, OpenGL, OpenCV, OROCOS KDL
Hardware	3D Printing, Laser Cutting, Arduino, Raspberry Pi, ARM

PROJECTS

Co-Founder/Controls Lead

UW Sailbot - University funded with 40 members, placed 4th internationally May 16 - Sept 19

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

- 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

Flight Controls Intern

Kitty Hawk - Project Cora May 19 - Aug 19

Modelling and controller analysis for an autonomous VTOL aircraft

- Worked on motor thermal modelling and non-linear trim optimization
- Modified and analyzed deceleration trajectory planning

Vehicle Dynamic Controls Engineering Intern

NVIDIA - Autonomous Vehicles Group Sept 18 - Dec 18

Filter and controller design/optimization for an autonomous car

- Designed control system latency monitor and analyzed controller performance
- Analyzed and designed different methods for state filtering (Kalman etc.)

Robotics Software Developer

Trexo Robotics Jan 18 - Apr 18

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
- Designed a simulator using Gazebo with a custom ROS control loop plugin

Robotics Engineering Intern

2G Robotics May 17 - Aug 17

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

Software Developer

Tigercat Industries Sept 16 - Dec 16

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

Robotics Research Assistant

University of Waterloo Jan 16 - Apr 16