OLUWATONI OGUNMADE

UNIVERSITY OF WATERLOO
SECOND YEAR MECHATRONICS ENGINEERING

Phone: +1 (226)-600-2697
Email: oogunma@uwaterloo.ca
Website: oluwatoni.github.io

TECHNICAL SKILLS

- Proficient in C,C++ and Python
- Working knowledge of ROS
- Experience using Simulink and MATLAB
- Experience with SolidWorks and EagleCAD
- UI design experience using QT4

WORK EXPERIENCE

Research Assistant, University of Waterloo Real-time Embedded Systems Lab — Jan - Apr 2016

For the Advanced Driver Assistance System car-on-a-treadmill project

- Designed a custom Pure Pursuit steering, and velocity controller that outperformed the current controllers
  - Used Simulink to verify the design
- Implemented the velocity and steering control systems in ROS using C++

Robotics Engineer Intern, Solus Robots — April - September 2015

- Redesigned a humanoid robot's head unit and arms, effectively increasing the range of motion of the head unit by 70° and reducing manufacturing costs of the arms by 35% using SolidWorks.
- Developed code to control and calibrate the robot's joints using a PID controller
- Implemented C++ code to assist debugging of the robot from the on-board computer and online interface

PROJECTS

I2C GPS — March 2016

An Embedded unit to provide GPS data over I2C

- Wrote software for a I2C GPS-NMEA parser in C
- Designed and soldered together the supporting circuitry

University of Waterloo Robotics Team: Robot Racing Team — November 2015 - present

Defending champions at this year's International Autonomous Robotics Challenge

- Created a detailed simulation of a the team's robotic car in Gazebo to test path planning algorithms
- Refactored existing embedded software responsible for the vehicles controls

Mobile Robot Platform (The Learner) — July 2015 - present

A robot created to learn SLAM and carlike vehicle controls

- Designed a ROS node to estimate robot pose using a Multisensor Extended Kalman Filter
  - Sensors include: 7 ultrasonic sensors, an IMU and a GPS
- Wrote a ROS node that controls a robotic car over Bluetooth with a PS3 controller
- Used EagleCAD to design a power distribution circuit board for various sensors

VOLUNTEER AND EXTRA-CURRICULAR ACTIVITIES

Research Team Lead, Engineers Without Borders: UW Chapter — September 2015 - present

- Spearheaded development of a case study focused on global engineering; used in an engineering course