Oluwatoni Ogunmade

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WORK EXPERIENCE

Waymo · Embedded Software Engineering Intern   *May 2018 - Present*
- Currently developing firmware for sensors onboard our autonomous vehicles.

Avidbots · Software Developer Coop, Localization and Mapping Team   *January 2018 - April 2018*
- Developed a cloud-based platform using Python, ROS and Jenkins to validate robot localization, enabling the team to rapidly evaluate multiple SLAM algorithms simultaneously in simulation and on recorded data.
- Significantly improved the robot localization by recommending and integrating cost efficient inertial measurement sensors to the existing sensor stack using an Extended Kalman Filter.

Nest · Embedded Software Engineering Intern   *May 2017 - August 2017*
- Worked with multiple teams including UI/UX, Project Management and Integration Engineering to create and deliver the Nest Guard in-store demo, currently running on stores across the US.
- Built a Python dashboard to visualize memory usage on over 400 devices which helped in detecting memory leaks.
- Wrote Object Oriented C++ code to report vital device information on memory, processor utilization and power consumption of the embedded Linux computer, providing the team with data to assist with debugging.

CrossWing · Robotics Specialist   *September 2016 - Dec 2016*
- Created a real time obstacle avoidance algorithm for a holonomic robot based off the VFH algorithm in Python to assist users in safely teleoperating the robot.
- Implemented multi-sensor synchronization utilizing inter-device serial communication interfaces that relied on LIN and UART protocols written in C and C++.

EXTRA-CURRICULAR ACTIVITIES

University of Waterloo Robotics Team · Software Lead   *May 2018 - July 2018*
- Led a team of 9 engineering students to develop software for a scaled down self-driving car, finishing fourth place at the International Autonomous Robot Racing Competition.
- Developed a simulation of the vehicle and track which significantly reduced development time for new features.

Engineers Without Borders, Waterloo Student Chapter · Co-President   *September 2016 - March 2018*
- Co-Led a university chapter of over 30 students, worked on increasing the capacity of the executive members on my team leading to new impact areas springing up including the development of a club run podcast series, STEM outreach events and successful fund-raising campaigns.
- Presented ideas for a new initiatives to the CEO of the national organization which help spur organization-wide adoption of a new focus area.

Real-time Embedded Systems Lab · Research Assistant   *February 2016 - March 2016*
- Designed a custom steering and velocity controller for a robotic car that outperformed the existing controller, using Simulink to model the vehicle and the controller and implemented it using C++.

PROJECTS

Imọ · Indoor Exploration Robot   *January 2016 - Present*
- Built a robot capable of mapping indoor environments and avoiding obstacles.
- Wrote firmware running on 5 micro-controllers communicating over I2C and UART with each other and an array of sensors including a lidar, seven sonar sensors, an encoder and an IMU in C and C++.

The Yellow Submarine · Autonomous Underwater Vehicle   *February 2016 - March 2016*
- Worked on a team to design and build a robot capable of completing an underwater obstacle course.
- Led the development of firmware to sample and filter data from an IMU, two sonar sensors and a custom short range distance sensor, providing the backbone for the robots autonomy in C++.
- Designed and built and a laser based short range distance sensor to compensate for the ultrasonic sensors dead-zone when measuring distances less than a meter.

EDUCATION

University of Waterloo · B.ASc in Mechatronics Engineering, Honours   *September 2014 – Present*