Oswin Rodrigues

3A Mechatronics Engineering
Hardware · Embedded
orodrigues@uwaterloo.ca · +1 226 606 6220 · oswinrodrigues

Tools

- Schematics & Layouts · Soldering & Rework · Multimeter & Oscilloscope · Arduino
- C · C++ · Python · ROS · MATLAB · JavaScript · Ladder Logic

Experience

AI & Robotics Engineer Winter 2016
Stealth-mode AI & Robotics Startup Toronto, ON
Robot-wrangling, with Python, over a distributed communication architecture.

- Sourced, tested and integrated components into system via custom-coded drivers.
- Soldered robots' power boards and executed safety bringup.

EDA & CAD Engineer Summer 2015
Upverter Inc. Toronto, ON
Enhancing PCB CAD features in hardware and software avenues.

- Created and verified symbols and footprints for 150+ electronic components.
- Used JavaScript to re-factor features and fire-fight bugs extensively.

Junior Mechanical Designer Fall 2014
Prodomax Automation Inc. Barrie, ON
CAD-ing custom jigs and fixtures in Solidworks for automotive part-assembly stations.

Neuro-Robotics Lab Research Assistant Winter 2014
University of Waterloo Waterloo, ON
Implementing C++ and Python nodes on ROS-run Turtlebot for social navigation research.

Projects

UW Robotics Team & Waterloo Autonomous Vehicles Lab Ongoing

- Reviewed and modified EAGLE schematics and layouts for Arduino motor shield on racing robot car.
- Soldered SMT and THT components onto three bare PCBs, and probed circuitry subsequently.
- Researched, brainstormed and refined design plans for wireless (RF) e-stop mechanism on car.

Tilt-Sensitive LED Matrix Panel Winter 2016

- Wrote LED matrix driver that uses two 74HC595N shift registers (SIPO) for I/O expansion.
- Wrote IMU - ADXL335 and MPU6050 - driver, including filter to integrate gyro and accelerometer.

Education

Mechatronics Engineering, Honors, BASc.
Class of 2018
University of Waterloo, Waterloo, ON

Courses

Microprocessor Systems & Interfacing	95%
Sensors & Instrumentation	80%
Circuits	93%