Oswin Rodrigues

Mechatronics Engineering, 3rd Year
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Goals

- To excel and grow in the design and development of **hardware** and **embedded software** systems.
- To meaningfully contribute to teams with high-quality engineering poured towards real-world problems.

Tools

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

Experience

Mechatronics Engineer Fall 2016 (Present)
KitchenMate Inc. Toronto, ON
(In progress). Building components of electrical, software and mechanical sub-systems.

- Detecting stall on DC motors with current sensors or speed encoders.
- Sensing heat modes on cooker PCB with opto-isolator and ADC.

AI & Robotics Engineer Winter 2016
Stealth-mode AI & Robotics Startup Toronto, ON
Robot-wrangling with Python over 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 navigation research.

Projects

UW Robotics Team & Waterloo Autonomous Vehicles Lab Various

- Verified and modified EAGLE schematics and layouts for Arduino motor shield.
- Soldered SMT and THT components onto three bare PCBs and probed subsequently.

Tilt-Sensitive LED Matrix Panel Winter 2016

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

Education

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

Courses

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