

Oswin Rodrigues

3A Mechatronics Engineering
Hardware · Embedded

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🔧 TOOLS

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

📈 EXPERIENCE

AI & Robotics Engineer Intern Winter 2016

Stealth-mode AI & Robotics Startup Toronto, ON

Robot-wrangling, with Python, over a distributed communication architecture.

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

EDA / CAD Engineer Intern Summer 2015

Upverter Inc. Toronto, ON

Enhancing PCB CAD tool features in software (JavaScript, Python) and hardware avenues.

- Re-factored features and fire-fought bugs extensively, for empowered user experience.
- Created and verified symbols and footprints for 150+ electronic components.

Mechanical Design Co-op Fall 2014

Prodomax Automation Inc. Barrie, ON

Designing jigs and fixtures in Solidworks for automotive part-assembly stations.

- Modeled custom tooling in two assembly stations for a vehicle's seat track mechanism.
- Detailed and ballooned numerous part and assembly drawings.

Neuro-Robotics Lab Research Assistant Winter 2014

University of Waterloo Waterloo, ON

Using ROS-run Turtlebot for social navigation research purposes.

- Wrote C++ and Python nodes to implement navigation stack on Turtlebot.
- Gained immense troubleshooting experience associated with accommodating open-source software.

🏠 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%