

Marcos Jay Concon

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Github: <https://github.com/mcoscon>

Technical writeups: <https://www.hackster.io/marcosconcon>

Education

B.Eng in Electronics & Communications, Curtin University, Malaysia

GPA: 3.76 / 4.00

Graduation: Expected 2020

Relevant Coursework: Data communications, Digital signal processing, Instrumentation & Control, Microcomputers, Mobile Radio Communications and Concurrent systems

Diploma in Electrical & Electronics Engineering

GPA: 3.70 / 4.00

Nakhoda Ragam Vocational School

Graduation: June 2015

Skills

Languages: C and Python

HW Technologies: Arm processors, PIC processors, Filter design

SW Technologies: Git, Linux, FreeRTOS, AWS IoT Core, Firebase, Wireshark

Protocols: TCP/IP, HTTP, MQTT, BLE, I2C, SPI

Data Analysis: MATLAB, Keras, Scikit Learn, Numpy & Pandas

Work Experience

Software Developer, Ombak Devhouse, Malaysia

2019

Interactive Wall Project - <https://github.com/mcoscon/interactive-wall>

- Lead the development of an interactive system using an open-source C++ framework on a Raspberry Pi with a TCP web socket connection on an ESP-32 for real-time display of animations over wall-art.
- Collaborated with animation designers ensuring that the project runs seamless on the constrained hardware.

Food marketplace web application - <https://majoh.com.my/>

- Lead the back-end development in nodejs with Firebase serverless functions, integrating API's such as Stripe's payment gateway, Gmail and Telegram's bot notifications for automated customer & vendor communications.
- Collaborated with lead designer to develop UI/UX with React and Material UI frameworks.

Intern Engineer, Aeste Works (M) Sdn Bhd, Malaysia

2018

Twelve weeks blog entry - <https://blog.aeste.my/author/marcos-conconaeste-net/>

- Programmed PIC32 in C with Microchip's USB stack to develop a USB CDC ECM device providing ethernet over USB which replaces the company's need for an ethernet controller.
- Wrote device driver code that integrates lwIP's TCP/IP stack with USB CDC ECM device in achieving Layer 3 OSI Model connectivity.

Tutor, Brunei Darussalam

2015

- Taught according to students' needs and adapted course content to increase overall grades in subjects such as Math and Science to an average of 'B'.

Industrial Trainee, Brunei Shell Petroleum, Brunei Darussalam

2014

- Performed cable gland installations complying with company standards.
- Conducted maintenance & overhaul of 3 - phase motors according to standard procedures.

Projects

Final Year Capstone Project

Ongoing

Adaptive sensor fusion in terrain classification for autonomous mobile vehicles

- Programmed an ESP32 micro-controller for logging IMU data from a wheeled robot to the ThingSpeak IoT platform for aggregation.
- Performed processing, segmentation, training and classification with Python libraries on logged data for classification accuracies of 91.67% and 88.5% for SVM and CNN respectively.
- Ongoing – performing research and implementation of efficient multi-sensor fusion of image, acoustics and vibration features for robust results.
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Integrated Design Project

2020

Smoker Detection System - <https://github.com/mcoscon/integrated-design-project>

- Developed in a team of 4, a system that uses the Intel neural compute stick on a Raspberry Pi to identify and alert authorities on smoking offences.
- Led the development and integration of AWS IoT Core with the Pi for sending image bytes over MQTT while utilising AWS Lambda and Twilio API's for real-time notifications to authorities.
- Designed with React, a real-time dashboard that incorporates Firebase services for authorities to visualize data.

Achievements

- *Top 3, IOTA Build a Marketplace of Devices 2019* – developed an autonomous system in Python and Facebook's GraphAPI on the IOTA blockchain for event logistics management. <https://bit.ly/3111YXZ>
- *Top 1, HackWknd IDECS 2019* – developed a hardware prototype in C that simulates a system prioritising emergency vehicles to proceed in traffic conditions. <https://bit.ly/37KQhpU>
- *Top 2, Plus Hackathon 2018* – developed a software prototype in Python using an open-source dataset with TensorFlow's object detection for pothole detection and predictive road maintenance. <https://bit.ly/2NhngZs>
- *Top 2, Shell Road Safety Varsity Challenge* – developed an embedded system in C with capacitive sensing to achieve hands off/on detection for driver safety. <https://bit.ly/3fKOvaZ>
- *Top 1, The Grand Challenge Hackathon* – developed a mobile application with TensorFlow Lite that interactively identifies native plants & animals for park tourism. <https://bit.ly/2YT6JjH>
- Curtin University's Dean's List award in the following subjects: Communications Engineering, Data Communications & Networking and Microcomputers.
- Commendation Letters in four semesters (2018-2019) for obtaining GPA greater than 75%.
- Curtin Malaysia Merit Scholarship

Professional Associations

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| • Facebook Developer Circle Lead for Sarawak | Current |
| • IT & Media Sub Committee for International Student's Association | 2017-2018 |
| • Vice Secretary for Curtin Running Club | 2017-2018 |
| • Member of Institute of Electrical and Electronics Engineers | 2016-2017 |
| • Member of Institute of Engineers Malaysia | 2016-2017 |