Miguel Cuan

mihcuan@gmail.com | (313) 213-2955 | Dearborn, MI
linkedin.com/in/mcuan | github.com/mcuan

Education

Tecnologico de Monterrey — Monterrey, Mexico
BS in Mechatronics Engineering — *Aug 2011 – Jun 2017*

Experience

Ford Motor Company — Dearborn, MI
Connected Vehicle Embedded Software Engineer — *Sep 2018 – Present*

- Lead developer at the Enterprise Connectivity Advanced Engineering team, supporting all stages of product development lifecycle including design, implementation, testing, validation and software integration.
- Developed C/C++ multi-threaded applications for different embedded platforms and operating systems (QNX, Embedded Linux, Android)
- Collaborated on multiple prototypes and proof-of-concepts to test new technologies for the next generation of connected vehicles.
- Coordinated software deliveries with internal and third-party suppliers for highly distributed AV systems.

Visteon Corporation — Queretaro, Mexico
Graphical User Interface Software Engineer — *Mar 2018 – Sep 2018*

- Embedded software development for digital display Instrument Panel Clusters. (Ford F-150 MY21)
- C/C++ embedded software development, cross-compiled for an ARM target running QNX RTOS.
- GUI development using graphics engine to manage assets, graphics layout and rendering.
- Performed software design (UML), static and dynamic testing in compliance with coding standards (MISRA)
- Source Control / Change and Configuration Management (Git, Plastic SCM, IBM RTC, Jira)

Aptiv — Queretaro, Mexico
Embedded Software Engineer — *Jul 2017 – Mar 2018*

- Embedded software development for In-Vehicle Infotainment systems. (UConnect MY19)
- Developed C++/QML embedded software applications for multiple size/resolution touchscreen displays. (e.g. Radio AM/FM/SXM, Media, Phone [AndroidAuto, CarPlay] Navigation, Settings, HTML5 Browser)
- Developed interfaces to interact with different ECUs on the vehicle through CAN protocol.
- Performed root cause analysis to debug and fix software defects (5 Why's, FTA, DFMEA)
- Collaborated with Systems, Integration and Validation engineers to ensure ASPICE compliance. (Peer Review, Unit Test, SW Integration)

Schneider Electric — Monterrey, Mexico
Mechatronics Intern — *Aug 2014 – Dec 2016*

- R&D for Miniature Circuit Breakers and other low voltage electrical protection devices (Square D, Multi-9)
- Worked with CAD software and modeling techniques for prototyping and structural simulations of miniature circuit breakers parts.
- Designed software for microcontroller systems and graphic user interfaces.
- Performed mechanical and electrical testing at the Power Laboratory. (UL, IEC, NEMA)
- Research collaboration having worldwide interaction with different design centers and universities.

Skills

Programming Languages: C/C++, Python, Java
Software: Linux, QNX, Android, Git, Qt, OpenCV, ROS
Hardware: x86, ARM Cortex-A, Raspberry Pi, Arduino, NVIDIA Jetson
Other: CAN, Ethernet, WiFi, BLE, UWB, MQTT, Protobuf

Projects

Autonomous Navigation of Land Vehicles

- Implemented algorithms in C++ to process LiDAR point cloud data and identify traversable space, obstacles and routes, performing real time data processing and wireless data transmission.
- Utilized ROS to integrate the robotic platform solution and generate a visual 3D map of the environment.

Residential Energy Management System

- Contributed to the development of energy monitoring systems for residential electrical installations, leading to company award and patent.
- Designed and prototyped electromechanical systems and implemented embedded software for an IoT end-to-end energy metering solution.

Achievements

Silver Prize at FD Innovation Contest, Impacting strongly traditional products — Schneider Electric *Dec 2016*
Patent US 9618548, Integrated Systems for Miniature Circuit Breaker Load Centers — Schneider Electric *Apr 2017*