Casey T. Morris

caseymorris61@gmail.com https://caseymorris61.github.io

EDUCATION

UNIVERSITY OF WISCONSIN-MADISON Madison, WI
Master of Science in Electrical Engineering, GPA: 3.8/4.0 May 2016

UNIVERSITY OF NOTRE DAME Notre Dame, IN
Bachelor of Science in Electrical Engineering Magna Cum Laude, GPA: 3.800/4.000 May 2014

EXPERIENCE

ORRO San Mateo, CA
Senior Embedded Engineer July 2018-Present

- Develop firmware for PIC16, Cortex M4, and Cypress PSoC processors for features incl.: forward/reverse phase dimming, dimming ramps, voltage, current, power sensing and calculation, bulb type and trim level detection
- Created novel configuration to use mechanical switches with Orro switches in a multi-way setup (first known use of a smart switch and mechanical switch on the same lighting circuit)

RAYTHEON (DoD Clearance: Secret, Active) Various, USA
Member, Rotational Engineering Leadership Development Program (RELDP)

Current Rotation: Digital Force Technologies – San Diego, Firmware Engineer November 2017-June 2018

- Development of FW for communication between proprietary systems and Sony, Canon, and Hitachi cameras
- Schematic design and PCB layout for digital video processing, networking, and power management designs
- Program lead overseeing product from design through production, customer management and integration effort

Second Rotation: RMS – Tucson, Software Engineering Center March 2017-November 2017

- Create and implement software services for real-time embedded application utilizing SCRUM Agile Framework
- Primarily responsible for design of guidance, telemetry, and payload delivery functionality using RTI DDS

First Rotation: SAS - El Segundo, Hardware Engineering Center June 2016 - March 2017

- Develop and verify PWB layout guidelines through signal and power integrity analysis on various programs

WISCONSIN ELECTRIC MACHINES & POWER ELECTRONICS CONSORTIUM Madison, WI
Graduate Student/Research Assistant September 2014-May 2016

- Developed novel three phase inverter topology to reduce common mode EMI in motor drives using WBG devices
- Performed analytical calculations, simulations, schematic capture, PWB design, build and test for whole system

IBM *Product Engineering Intern* Essex Junction, VT

- Collaborated with team to devise advanced methods to analyze scan chain paths and locate production failures
- Created automated software tools to interface with DB2 databases to summarize test data in real time

CARDINAL HEALTH *Intern, Java Application Developer* Dublin, OH

- Enhanced problem solving skills through development of complex application to automate resending invoices

EXTRACURRICULAR PROJECTS

Various Raspberry Pi Projects *(Personal Projects)* *Spring 2018-Present*

- Developed RPi based PhotoBooth used at my wedding. Guests text to snap (via Twilio), replied with picture
- Implemented a backup camera to retrofit any car using RPi to stream live video to smart phone via WiFi AP mode

Web Application Development, College Football Analytics *(Personal Project)* *Spring 2016-Present*

- Created an analytical model to rank college football teams and to predict game scores based on past performance
- Designed a web application where users predict CFB game results, competing against the predictive model

Automated Lighting and RFID Locking System *(Two Member Personal Project)* *Fall 2015-Spring 2016*

- Created an Arduino based locking and lighting system using IR & RFID receivers, servo motors, relays, etc.
- Designed PCB daughter layout, developed control system, and implemented project in personal apartment

Semi-Autonomous Robot for Sewer Exploration *(Four Person Team, School Project)* *Fall 2013-Spring 2014*

- Designed a remote controlled robot with live video feed, incorporating IR sensors, accelerometers, DC motors
- Developed communication protocol, motor drive control, microcontroller (PIC32, RPi) firmware, and UI

SKILLS

Technical: Windows, Mac, and Linux OS, Microsoft Office, MATLAB/Simulink, C, C++, Python, Java, HTML, SQL, Groovy, Bash, Altium Board Designer, LTSpice, Mentor Graphics Xpedition, HyperLynx, Oscilloscopes, Spectrum Analyzers ARM, PIC, Cypress uC, SPI and I²C Protocols, Git, SVN, Agile Frameworks, Python Web Frameworks,

SELECTED PUBLICATIONS*

***Fifteen other publications in IEEE journals and proceedings**

[1] C.T. Morris, D. Han, and B. Sarlioglu, "Reduction of Common Mode Voltage and Conducted EMI Through Three Phase Inverter Topology," *IEEE Transactions on Power Electronics*, vol. 32, no. 3, pp. 1720-1724 , 2017.

[2] C.T. Morris, D. Han, and B. Sarlioglu, "Comparison and Evaluation of Common Mode EMI Filter Topologies for GaN-Based Motor Drive Systems," *in Proc. Applied Power Electronics Conference (APEC),* Long Beach, March 20 – 24, 2016. (Won Best Presenter Award)