Emilio A. Magaña

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Education

Oregon State University (September 2017 - June 2021)
BS Department of Electrical and Computer Engineering
GPA: 3.53

Employment Experience

OSU, ECE Department (January 2019 - March 2019)
Teacher's Assistant/ Head TA

- Coordinated lab sessions for ECE 112: Introduction to Electrical and Computer Engineering. Made sure that students were on task in doing their lab work, along with creating weekly quizzes and holding office hours.

Qdoba (August 2018 - December 2018)
Crew Member

Papa Murphy's (January 2018 - April 2018)
Crew Member

- Regular Restaurant responsibilities: keeping the store clean, working the line at a quick pace, taking calls, using the register, and doing dishes in the back.

Technical skills

Languages: System Verilog, VHDL, Python, C/C++, MATLAB, Bash, Assembly Language (AVR 8-bit RISC architecture)

Simulation & PCB Design: LtSpice, EAGLE CAD, Cadence, ModelSim

Circuit building and testing: Power Electronics, CMOS, Oscilloscope

Documentation: Latex

Projects

HV Peripherals (Team, GFR 2020)

- In order to comply with 2021 rules for building the Global Formula Racing Car, new configuration of parts was necessary in order to compete at a national and international level. As part of High Voltage Peripherals for the ePowertrain sub-team within GFR, my contribution lied in updating the cars DC-Link, Brake System Plausibility Device (BSPD), and reviewing the FlexPCB.
- As part of the shutdown circuit in keeping the driver safe from harm, the BSPD activates when the driver is pushing on the brakes past a certain threshold, communicating that there is a fault in the brakes, shutting the car down.
- The DC-Link board served several purposes in order to ensure qualification for competitions. As part of regulations the DC-Link board contained a Powerstage, TSAL and Discharge modules, each with their own functionality.

SCARA Robot Arm (Team, Junior Design 2020)

- For Junior Design my teammates and I were tasked with building and programming a SCARA Robot Arm that would be controlled with an Arduino using a Jetson Nano for computer vision, along with a custom made PCB. The SCARA Robot Arm would have the functionality to draw a 10-inch straight line within 2.5 seconds (with a margin of error within ±0.25 inches) and be able to sort a single layer of US coins into their proper slots of the enclosure.
- My contribution lied in the coding of the SCARA's motion, in Python Script and Arduino Ide, using coordinates from a Cartesian plane based on the area where the robot arm would be operating on as the input.

Relevant Courses

- Engineering Capstone Design
- Digital Image Processing
- CMOS
- Power Electronics
- VLSI
- Electric and Magnetic Fields
- Electronics I/II
- Digital Logic and Design (FPGA)
- Signals and Systems I/II/III

Achievements/Certifications

- Dean's list College of Engineering
- Oregon Seal of Biliteracy

Extracurricular

- Oregon State University Global Formula Racing Club Member/Formula SAE (Capstone)
- The Society of Hispanic Professional Engineers (SHPE) Member
- Engineers Without Borders Member (EWB)