Emilio A. Magaña

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Education

Oregon State University (Expected Graduation June 2021)
Bachelor of Electrical and Computer Engineering, with a planned minor in Computer Science
GPA: 3.51

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.

Projects

HV Peripherals (Team, GFR 2020)

- As part of my capstone, I joined the Global Formula Racing team at Oregon state. The Global formula racing team is a joint effort between OSU and DHBW Ravensburg, and competes every year by building a race car as part of FS and FSAE. As part of the High voltage peripherals for the ePowertrain sub-team within GFR my contribution lied in updating the cars DC-Link, Brake System Plausibility Device (BSPD).
- As part of the shutdown circuit in keeping the driver safe from harm, the BSPD activates when over 5kW is delivered to the motors, and if 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.

Technical skills

Languages: System Verilog, Python, C/C++, MATLAB, Bash, LaTeX

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

Circuit building and testing: Power Electronics, CMOS, RTL gate Level design, Standard EE lab equipment

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
- Transmission lines

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)