Emilio A. Magaña

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EDUCATION

Oregon State University | Bachelor of Science in Electrical and Computer Engineering — Graduated Jun. 2021

- GPA: 3.52/4.0
- Minor in Computer Science
- *Related Coursework:* Power Electronics, Digital Logic Design, VLSI, CMOS, Computer Architecture, Signal and Systems

SKILLS & LANGUAGES

Languages: C/C++, Python, System Verilog, Bash, LaTex
Circuit building and testing: Power Electronics, VLSI, CMOS, RTL gate level design, Standard EE lab equipment
Simulation & PCB Design: Eagle CAD, LtSpice, Cadence
Conversational Languages: Spanish (fluent, Oregon Seal Of Biliteracy), German (Conversational)

PROJECTS

HV Peripherals — Oct. 2020 - Mar. 2021

Global Formula Racing | Corvallis, OR

- 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 to compete in FS and FSAE competitions. I contributed to the following aspects of the project:
  - The High voltage peripherals for the ePowertrain sub-team within GFR, which included updating the cars DC-Link board and Brake System Plausibility Device (BSPD).Designs for both components were dependent on FS and FSAE regulations.
    - The DCL board was able to discharge the maximum system current **2627% faster** than the allotted maximum given time under FS regulations and **50% faster** under FSAE regulations (max. time for both rule sets is 15s).
    - The BSPD was able to **"restart the car" 11.6s** after no implausibility being present under FS rules (min. time being 10s) and remained indefinitely turned off under FSAE rules.

SCARA Robot Arm — Jan. 2020 - Mar. 2020

Junior Design | Corvallis, OR

- 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 was seen 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.

EXPERIENCE

Teacher's Assistant/Head TA — Jan. 2019 - Mar. 2019

OSU, ECE Department | Corvallis, OR

- 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.

Crew Member — Aug. 2018 - Dec. 2018

Qdoba | Corvallis, OR

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

Crew Member — Jan. 2018 - Apr. 2018

Papa Murphy's | Corvallis, OR

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