

Emilio A. Magaña

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EDUCATION

Oregon State University | Bachelor of Science in Electrical and Computer Engineering Graduated June 2021
❖ GPA: 3.52/4.0
❖ [Minor in Computer Science](#)
❖ *Related Coursework:* Power Electronics, Digital Logic Design, VLSI, CMOS, Computer Architecture, Signal and Systems

EXPERIENCE

Product Engineer Oct. 2021 - Present
[Lattice Semiconductor](#) | Hillsboro, OR

- At Lattice Semiconductor my role consists of validating and characterizing products..
 - For our general purpose FPGAs my focus has lied in Characterizing our On-Chip Oscillator, ATM, GPLL and I/O's.
 - As part of characterization, due to the volume of units and patterns, I use Python to automate our lab equipment and develop patterns using Verilog through our in-house design software: Radiant.
- Created detailed statistical visuals between spec and performance of product using R.
- Developed Masks for PRBs testing
- Assisted in Boundary Scan pattern development
- Interpreted PCB layouts for testing

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.

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

- Programmed a SCARA Robot Arm, with three other classmates, capable of drawing a 10-inch straight line within 2.5 seconds (with a margin of error within ± 0.25 inches) and being able to sort a single layer of US coins into their proper slots of the enclosure using a an Arduino and a Jetson Nano, and a custom made PCB.
- My contribution lay 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.

SKILLS & LANGUAGES

Languages: Python, Verilog, R, C/C++, Bash, LaTeX, Tcl
Lab Equipment Proficiency: DTG, Oscilloscope, Voltage Supply, Thermal Oven/Stream, DMM
EDA tools: Eagle CAD, LtSpice, Cadence
Conversational Languages: Spanish (fluent, Oregon Seal Of Bilteracy), German (Conversational)