Eduardo Diaz

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Education

University of California, Berkeley — Berkeley, CA
Bachelor of Science in Electrical Engineering and Computer Sciences — *Expected: Dec. 2021*

Experience

Modern Digital Logic Design Internship — Nov. 2018 – Jan. 2019
Hartnell College Physics Department — *Salinas, CA*

- Developed and designed a 7-segment LED counting display using Verilog and an Altera Cyclone II FPGA.
- Performed analysis of hardware using Quartus II and ModelSim.
- Began to integrate the project with Cosmic Ray Detector to count coincidences.

Organic and Perovskite Photovoltaics Internship — June 2018 – Aug. 2018
Hartnell College Physics Department — *Salinas, CA*

- Created and tested Organic and Perovskite solar cells and compared their respective efficiency.
- Investigated and analyzed the elements present in the Perovskite cell using a spectrometer.

Society of Hispanic Professional Engineers Student Chapter, President — Aug. 2018 – May 2019
Hartnell College — *Salinas, CA*

- Oversaw all SHPE Hartnell Chapter activities.
- Presided over all chapter meetings and gatherings.
- Prepared reports for the SHPE National Report Program.

Projects

RISCV151 | *Verilog, VCS, Icarus Verilog, Git*

- Designed and implemented a 3-stage pipelined RISC-V CPU with UART for tethering and integrated I/O.
- Programmed the CPU to run on the Xilinx Pynq Platform with a Zynq 7000-series FPGA.
- Optimized the CPU to run at 70MHz while also reducing the FPGA resource utilization for LUTs and SLICE Registers (to about 4% and 0.85% respectively).

Secure File Store | *Go, Git*

- Designed and developed an End-to-End Encrypted File Sharing System.
- Allowed users to store/load files, share files with other users, and revoke access to a shared file from other users.
- Ensured that the encryption scheme provided users with confidentiality and integrity of the contents of all files.

BYOW | *Java, Git*

- Designed and implemented an engine for generating 2D tile-based explorable worlds.
- The worlds were pseudorandomly generated using a seed entered by the user.
- Implemented interactivity and a user interface which allowed the user to explore the generated world.
- Added the option to save movements made as well as load and replay a previously saved game.

Relevant Coursework (* = in progress)

EE 120: Signals and Systems *
EECS 151: Introduction to Digital Design and Integrated Circuits
EECS 151LB: Field-Programmable Gate Array Laboratory
EECS 16A: Designing Information Devices and Systems I
EECS 16B: Designing Information Devices and Systems II *
CS 161: Computer Security
CS 61B: Data Structures
CS 61C: Great Ideas in Computer Architecture *

Technical Skills

Languages: Verilog, C/C++, RISC-V, Java, Python, Go, SQL
Developer Tools: Git, VCS, Icarus Verilog, PyCharm, IntelliJ
Libraries: NumPy, Matplotlib
Hardware Debugging: Oscilloscopes, Multimeters