Isaac Garibay

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Education

University of California, Santa Cruz Santa Cruz, CA
B.S. Computer Engineering *2025*

Relevant Coursework

- Data Structures/Algorithms, Circuit Analysis, Signals Systems, Principles of Systems Design, Computer Networks, Logic Design, Embedded Systems Design, VLSI Design, Intro to Software Engineering

Experience

Google - SWE Open Source Internship September 2023 – November 2023
Timesketch Open Source Project

- Contributed to Timesketch, a collaborative forensic timeline analysis platform for cybersecurity teams, with 2.7k GitHub stars
- Investigated and resolved issue #255 involving inconsistencies in the timestamp feature's robustness.
- Unit tests were to ensure no further regression in the project occurs after patches in project and timestamps were properly being populated with compatible formats

CSE Lab Tutor September 28, 2024 – Present
University of California, Santa Cruz

- Consulted on mastering logic design fundamentals at the register-transfer-level in SystemVerilog.
- Guided others in designing embedded systems software for ESP32 microcontrollers with C/C++
- Encouraged independent problem-solving skills to build a strong foundation in hardware-software integration

Undergraduate Researcher September 23, 2024 – Present
University of California, Santa Cruz

- Collaborated on optimizing the conversion of SPICE netlists describing SKY130 PDK logic cells into scalable vector graphics (SVG) for high-quality schematics.
- Explored IoT solutions by integrating the ESP-WROOM-E microcontroller with Lattice FPGA chips, using Wi-Fi backscatter as a low-power solution for data transfer and device communication
- Performed testing and debugging of the ULX3S development board to meet project specifications

Mentorship with Cisco Meraki June 2022 – December 2022
Import-Export Logistics Division

- Gained insights into import-export logistics processes while working closely with a project manager
- Developed a strong understanding of data management using Snowflake tools in a professional environment
- Learned essential best practices for communication and organization in a corporate setting

Projects

Multi-Threaded HTTP Server: Constructed a httpserver in C to handle several concurrent GET and POST requests with reader/Writer locks and thread safe queue to implement a dispatcher/worker thread pooling design

32-bit Ibex Core Chip Design: Using the Openlane2 design flow, I implemented a chip design for the RISC-V 32-bit Ibex Core from the layout and placement of SRAM macros, global/local wire routing, pin placement, and ensuring that timing using static timing analysis tools with NgSpice

ESP32c3 Weather Station: Using Python in Pythonista, a mobile IDE for IOS, I created a server to make http queries to interact with ipify and geolaction API's and serve a http client implemented in C flashed onto the ESP32c3 to generate a report on current weather conditions relative to the region where the client's ip was assigned

Technical Skills

Languages: C, C++, Python, SystemVerilog

Tools: ESP-IDF toolchain, CMake, I2C, Docker, Nix-shell, Git, GitLab, Jira, Wireshark, KLayout, OpenROAD/OpenLane, ngspice