Israel Escobar-Camacho

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Education

Carnegie Mellon University — Pittsburgh, PA
B.S in Electrical & Computer Engineering — *Sep 2020 – May 2024*

- **Relevant Coursework:** Introduction to Computer Systems, Computer Systems and Hardware-software interfaces, Introduction to Embedded Systems, Hardware Structure and Design of Digital Systems, Logic Design and Verification, Computer Architecture
- **Scholarships:** Tarten Scholar, Renaissance Scholar, Chicago Scholar

Skills

Languages: C/C++, Bash, Python, SML, Java, MATLAB, TCL Scripting, SystemVerilog, RISC-V ISA, x86-64 ISA

Technologies: Intel Pin, Git/Github, Quartus, GDB, Linux, Windows Vista/8.1/10, MacOS X, UNIX, Matplotlib, Autocad Eagle

Work Experience

Intel — Hillsboro, OR
Pre-silicon IP Validation Intern — *May 2023 – August 2023*

- Developed and refactored dynamic Python scripts for new infrastructures to support my team efforts
- Self-taught architectural and design knowledge to apply skills for advancing current Simulation Validation practices

Carnegie Mellon University — Pittsburgh, PA
Teacher Assistant for Principals of Imperative Computation — *May 2022 – June 2022*

- Supported collaborative learning during lab and instruct recitations varying from 4 to 15 students
- Taught topics ranging from data structures, correctness in C, to big-O time efficiency
- Held office hours to support students 1-on-1, including review sessions for larger groups

Research Experience

Carengie Mellon Univ. Department of Mechanical Engineering — Pittsburgh, PA
Undergraduate Researcher — *September 2023 – Current*

- Troubleshooted C-based firmware for flashing a STM32 processor on a Custom PCB design
- Developed communication protocols with UART for our chemical sensor EmStat Pico Module

Carnegie Mellon Univ. Department of Electrical & Computer Engineering — Pittsburgh, PA
Undergraduate Researcher — *Janurary 2023 – May 2023*

- Dealt with TCL scripting with the Cadence tool-set for synthesizing and performance analysis
- Worked on ISCAS files and SOP simplification/optimizations through python scripting
- Developed Bash and Python scripts along with matplotlib for data analysis and automation

Projects

Branch Predictors

- Implemented branch predictors, meant for computer infrastructures, in C++ code to test efficiency
- Used Pin to run these branch predictors on simulated computer processes given by SPEC2017
- Utilized results, specially picked with Pin, to analyze the efficency and report our discoveries (making claims with our data collected)

Speculative 2-way superscaler 5-Staged RISC-V processor

- Used SystemVerilog to implement a hardware processor design with our team's self-made schenamics in Lucidchart's diagram software
- Developed RISC-V assembly code and Python Scripts for simulating and monitoring architectural behavior
- Covered all Data Hazards, aswell as optimizaed modules such as our Caching to Branch Predicting