# 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, Functional Programming, Introduction to Computer Secuirity, Principals of Imperative Computation
- **Scholarships:** Tarten Scholar, Renaissance Scholar, Chicago Scholar

## Skills

**Languages:** C/C++, Bash, Python, Java, Matplotlib, RISC-V ISA, x86-64 ISA, ARM32/Thumb ISA, ARM64

**Technologies:** Git/Github, Confluence, Linux, Proxmox VE, Windows Vista/8.1/10/11, MacOS X, UNIX, Software Defined Radios, Real-Time Embedded Systems, GDB, JTAG, Ghidra, Cryptographic tools, Docker

## Work Experience

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

- Developed and refactored dynamic Python scripts for new infastructures to support my team efforts
- Self-taught architectural and design knowledge for applying my skills throughout advancing current validation practices

**Motorola Solutions Inc.** — Schaumburg, IL
*Embedded Software Engineer* — *July 2024 – Current*

- Applied reverse engineering tatics, self-guided research, and critical thinking to provide customer-focused solutions
- Utilized Radio Frequency traffic, JTAG, and company standard tools to debug embedded systems
- Depended on AES, HMAC-SHA256, and ARC4 knowledge to solve niche problems
- Documented future improvements, solutions, and self-guided findings to support team efforts

## Research Experience

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

- 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

## Projects

**Real-Time Kernel**

- Developed a multi-threaded Real Time Operating System for a STM32 processor with enforced fixed priority scheduler
- Utilized GDB to step through out Thumb instructions for my C code and trace assembly code
- Used MMIO to build upon the UART and I2C Drivers for communication between arduino, LEDs, and other electronics

**Homelab Server**

- Developing a 32TB homelab server to serve varying applications to a multitude of people
- Planned out network solutions such as Wireguard, Pihole, Caddy, and Authelia to ensure secure connections and prevent AD tracking
- Printing server rack accessories for repurposed laptop, Hard Disk Drives, Network Switches, Router, and Access Point
- Heavily utilizing Open Source Solutions and documentation to self teach and apply new found skills