

Israel Fernandez

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SUMMARY

Systems and embedded software engineer (8+ years) moving into offensive security and red teaming. Seeking full-time red team/offensive security roles.

SKILLS

Core/Working: Python, C, C++, Linux kernel & device drivers, embedded firmware, RTOS, BSP customization, Shell/Bash, C2/implant design

Building: Ghidra, IDA, Wireshark, reverse engineering, ARM Assembly, TypeScript, JavaScript, Svelte 5, Docker, SQL, Java, C#, Lua

Spoken: English, Spanish (professional proficiency)

EXPERIENCE

Independent Security Research

Monterey, CA, Jan 2024 - Present

Self-directed

- Built BeaconUI, a from-scratch educational C2 framework (see Projects): dual Python/C implants, mTLS transport, AES-256-GCM encryption.
- Ramping on Android security analysis and reverse engineering.
- Published a long-form technical writeup on C2 architecture and protocol design at israel-fernandez.com/blog.

Apple

Cupertino, CA, May 2025 - Present

Hardware Systems Software Engineer (Contract via Sasken Technologies)

- Build and maintain Python automation and diagnostic tooling adopted across multiple hardware platforms.
- Triage low-level firmware and bring-up regressions with firmware and hardware teams under tight timelines.
- Contribute to system-level software and firmware integration on Apple silicon (specifics NDA-bound).

Gantz-Mountain Intelligence Automation Systems

Monterey, CA, Feb 2016 - Jul 2024

Systems & Software Engineer

- Designed and implemented efficient algorithms that increased computer-vision processing performance by 40% on the ARM SOC.
- Collaborated with the Electrical Engineering team to diagnose thermal issues, improving hardware efficiency by 15%.
- Led Linux kernel driver development and BSP customization for proprietary embedded ARM hardware.
- Implemented low-level network drivers and proprietary communication protocols for embedded Linux systems.
- Mentored interns porting proprietary vision algorithms from MATLAB to C.

PROJECTS

BeaconUI: Educational C2 Framework (Python, C, Svelte 5, mTLS, SQLite)

source on request

- Beacon-model command-and-control with dual Python and C implants (29 and 28 task types), mTLS transport with HMAC-SHA256-derived endpoints, AES-256-GCM application-layer encryption, and a cross-platform C implant (Linux, Windows).
- Persistent PTY shell, SOCKS5 pivoting, in-memory shellcode stager, and an HTML-smuggling dropper. Educational/Authorized use only.

CDN (Python)

github.com/iFernandez96/CDN

- An educational content delivery network: UDP-based load balancer distributing requests across edge servers with local caching and origin pull.

DNS Resolver (Python)

github.com/iFernandez96/dnsResolver

- An educational DNS resolver simulating iterative resolution with an LRU cache.

EDUCATION

B.S. Computer Science California State University, Monterey Bay

Graduated with Honors, May 2025

A.S. Computer Science Monterey Peninsula College

Graduated, Dec 2023

HIGHLIGHTS

- **Cyber Security Club President:** Led club activities.
- **ICPC Silicon Valley Regionals 2024:** Team placed 27th of 80.
- **FIRST Robotics:** 34th of 400 at World Championship, 2nd at Silicon Valley Regionals; FRC mentor.
- **NASA Aerospace Scholar:** Worked in a team to build a Lego rover to traverse a simulated Mars environment.