Israel Fernandez

Systems & Security Engineer

(831) 392-7549 · israelfernandez96@gmail.com · israel-fernandez.com · github.com/iFernandez96 · linkedin.com/in/ifernandez96

SUMMARY

Systems and embedded software engineer (8+ years) moving into offensive security and red teaming. Deep low-level background (Linux kernel drivers, firmware, ARM, real-time computer vision on custom hardware), now building offensive tooling and ramping on reverse engineering. Built a from-scratch C2 framework with dual Python and C implants, mTLS transport, and AES-256-GCM encryption. 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, low-level networking, C2/implant design
Building: Ghidra, IDA, Wireshark, reverse engineering, ARM Assembly, TypeScript, JavaScript, SvelteKit, Docker, SQL, Java, C#, Lua
Spoken: English, Spanish (professional proficiency)

EXPERIENCE

Independent Security Research, Self-directed *Remote · 2024 – Present*

- 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, Hardware Systems Software Engineer (Contract via Sasken Technologies) *Cupertino, CA · May 2025 – Present*

- 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). *Tech: C/C++, Python, Linux, Shell, Lua, YAML*

Gantz-Mountain Intelligence Automation Systems, Systems & Software Engineer *Monterey, CA · Feb 2016 – Jul 2024*

- Designed and implemented efficient algorithms that increased computer-vision processing performance by 40% on the ARM target.
- Collaborated with the Electrical Engineering team to diagnose thermal issues using specialized instrumentation; improved hardware efficiency by 15% and reduced cooling costs by 20%.
- Led Linux kernel driver development and BSP customization for proprietary embedded ARM hardware; owned RTOS, bare-metal, and OS builds.
- Implemented low-level network drivers and proprietary communication protocols for embedded Linux systems; mentored interns porting CV algorithms from MATLAB to C.

PROJECTS

BeaconUI: Educational C2 Framework · *Python, C, Svelte 5, mTLS, SQLite*

- 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; source on request.

CDN from First Principles *(Python).* A toy content delivery network: UDP-based load balancer distributing requests across edge servers with local caching and origin pull. *github.com/iFernandez96/CDN*

DNS Resolver *(Python).* An educational DNS resolver simulating iterative resolution (root to TLD to authoritative) with an LRU cache. *github.com/iFernandez96/dnsResolver*

EDUCATION

B.S. Computer Science · California State University, Monterey Bay · Graduated with Honors, May 2025
Coursework: Algorithm Design & Analysis, Computer Networks, Database Systems, Internet Programming

A.S. Computer Science · Monterey Peninsula College · Dec 2023
Coursework: Computer Architecture, Intro to UNIX/Linux, Network Security Fundamentals & Security+ Preparation

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.**