Justin Cruz

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Objective

Computer Engineering major with hands-on experience in Linux system administration, reverse engineering, and network privacy tools. Adept at building secure, self-hosted systems and conducting deep analysis of malicious binaries using IDA Pro beyond basic string searches. Reversed engineered malware including Michelangelo.1, DOS-7, and SQLSlammer, and unpacked and analyzed obfuscated samples like Lucius and Harulf. Seeking a Spring 2026 internship in cybersecurity with a focus on Security Operations Center (SOC) analysis to proactively monitor, investigate, and defend against real-world threats.

Education

Georgia Institute of Technology | Atlanta, GA   *August 2021 – Present*
Bachelor of Science in Computer Engineering, GPA 2.86   Expected Graduation, May 2026

Skills

Programming: Python, C, C++, SQL, Java, MIPS, RISC-V, x86
Hardware: Verilog, VHDL
Platforms: Linux (Ubuntu), Windows
Security & Tools: IDA Pro, OllyDbg, GitHub, MySQL, SSH, Pi-hole
Platforms: MySQL, Android Studio
Communication: Technical reports
Languages: English (fluent), Spanish (fluent)

Projects

Top-Down Shooter on Embedded Platform | Academic   *Summer 2024*
Project Developer

Designed and implemented a real-time shooting game on the Mbed platform using C++ and hardware interface libraries for LCDs and input controls. Built all core logic using custom data structures and low-level memory manipulation.

- Used a NavSwitch and pushbuttons to control player movement and actions in a hardware-based environment.
- Developed and debugged game logic using custom doubly linked list in C++ for dynamic enemy and missile management.
- Created real-time collision detection for sprites and projectiles on an LCD display.
- Integrated physical I/O components including pushbuttons and LCD display, emphasizing embedded systems development.
- Utilized USB serial output for real-time debugging and performance tuning on constrained hardware.

Home Ubuntu Server Setup | Personal   *Spring 2025*
Project Lead

Built a personal home server to provide users with private, centralized access to media and backups. Focused on self-hosting and network-wide ad blocking to reduce reliance on third-party services and enhance user privacy.

- Installed Ubuntu Server via USB using Rufus and manually removed pre-installed Windows.
- Added and configured an internal HDD for expanded storage and media access.
- Set up Plex Media Server, Minecraft server, and Pi-hole for DNS-level ad blocking.
- Enabled secure remote management through SSH for maintenance and deployment tasks.
- Reduced ad traffic across all home devices.

Relevant Coursework

Architecture, Systems, Concurrency, and Energy in Computation: Explored processor architecture, memory hierarchy, and I/O subsystems with a focus on performance and energy trade-offs; analyzed multi-level parallelism and concurrency; introduced threading and basic networking principles; evaluated system-level behavior using architecture-level simulators, providing foundational insight into low-level system vulnerabilities and performance bottlenecks relevant to secure computing.
Into to Malware Reverse Engineering: Static and dynamic analysis of malware using IDA Pro and OllyDbg; examination of viruses, worms, trojans, and APTs; unpacking, code obfuscation, anti-debugging, and anti-VM techniques, reverse engineering of PE files, RAM analysis, Intel x86 assembly; detection, and remediation strategies including signature generation and behavioral analysis.