

Ethan Cao

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EDUCATION & CERTIFICATIONS

University of California - Santa Cruz, B.S. Computer Science

Expected Graduation June 2027

GPA: 3.95/4.0 GPA, Dean's Honors List

Relevant Courses: Data Structures and Algorithms, Algorithmic Foundations of Cryptography, Analysis of Algorithms, Computer Architecture, Computer Systems and C Programming, Computer Systems and Assembly Language, Discrete Mathematics, Python Programming, C++ Programming

CompTIA Network+ (N10-009), Security+ (SY0-701)

PROFESIONAL EXPERIENCE

Farm-ng (Bonsai Robotics), Software Engineer Intern

Watsonville, California | **June 2025 – August 2025**

- Designed and deployed a secure user management system, integrated into over 150 production robots.
- Implemented multi-factor authentication using OAuth2, passwords, and hardware-bound cryptographic keys.
- Developed encrypted gRPC/Protobuf protocols to secure robot–Fleet Manager communications.
- Built a full-stack interface (React + FastAPI) enabling authenticated field operations on robotic devices.
- Collaborated with robotics engineers to debug and troubleshoot production units, resolving software–hardware integration issues and reducing field downtime.

IT Consultant Services (Ichor Systems), System and Security Specialist.

San Jose, CA | **February 2021 – Present**

- Configured Linux firewalls, TCP Wrappers, and remote access controls, reducing unauthorized access attempts through proactive security rule enforcement.
- Managed infrastructure for 15+ Linux servers across development, staging, and production environments, maintaining 99% uptime and high availability.
- Performed OS-level system hardening and applied security patches within 48 hours of release, cutting vulnerability exposure across all servers.
- Supported 24/7 data center operations by implementing real-time monitoring and alerting, ensuring prompt response to incidents and minimizing service disruptions

UCSC Information Technology Services, IT Consultant

Santa Cruz, CA | **February 2024 – Present**

- Guided classrooms in managing equipment like printers and MacBooks ensuring smooth operation
- Performed maintenance on labs by fixing printer and computer issues to maintain cleanliness standards
- Collaborated with the rest of Learning Technologies team of about 25 student consultants and 3 student managers

PROJECTS

LockIT, Swift, Cryptography, Apple Security Frameworks

- Built a macOS app in Swift/SwiftUI that securely encrypts and locks folders using AES-256-GCM encryption and Touch ID authentication.
- Integrated Apple Security frameworks (Keychain Services, LocalAuthentication, App Sandbox) to protect encryption keys and enforce biometric-gated access.
- Engineered a secure archive/decryption pipeline using ZIPFoundation, SHA256-derived key recovery, and automatic cleanup to minimize exposure risks.
- Implemented auto-lock triggers, secure deletion, and deterministic decryption to ensure privacy, even on system sleep or app termination.

Sentinel-AntiCheat, Java, Wazuh (SIEM), Bukkit(API)

- Built a real-time anti-xray detection engine for Minecraft servers (Java 21, Paper 1.21), using multiple detection methods based on mining depth, block ratios, and player behavior patterns.
- Integrated Sentinel logs into a complete Wazuh SIEM pipeline, including structured JSONL output, custom decoders and rules, and visual dashboards for tracking alerts and detection metrics.
- Engineered scalable, low-noise SIEM telemetry by customizing index mappings, segregating agent groups, and disabling unnecessary Wazuh modules for focused data collection.

TECHNICAL SKILLS

Skills: Python, C, C++, Swift/SwiftUI, TypeScript, React, FastAPI, gRPC/Protobuf, Linux, Cryptography, Wazuh SIEM, Security Monitoring & Alerting, Threat Detection, AWS

Language: English, Vietnamese