AYUSH SATYAVARPU

ayushsatyavarpu@gmail.com | github.com/AyushSat | /in/ayush-satyavarpu | ayushsat.github.io | 4089302564

EDUCATION

University of California, Irvine | B.S, Computer Science, Specialization: Networks, Security, AI/ML **GPA:** 3.84 **Graduation:** 06/2025
Relevant Coursework: Data Structures & Algorithms, Computer Vision, Machine Learning, Computer and Network Security, Computer Networks, Operating Systems, Software Engineering Principles, Linear Algebra, Discrete Structures, Software Testing, Software Design
Extracurriculars: Vice President of Technology - **Alpha Kappa Psi** | 2nd place, Cyber Collegiate Defense Competition - **Cyber @ UCI**

SKILLS & INTERESTS

Languages/Frameworks: Objective-C, C/C++, Python, Swift, SwiftUI, UIKit, Java, JavaScript, GoLang, MIPS, React, TypeScript, SQL
Software: XCode, AWS, Docker, Linux, Git, Google Cloud Platform (API, JS SDK), Firebase, Android Studio, MongoDB, Jenkins CI/CD
Interests: Cybersecurity, Game/Web Development, AI, Machine Learning, Cloud Computing, AR/VR, Finance

PROFESSIONAL EXPERIENCE

APPLE **Sunnyvale, CA**
Health Backend Software Engineering Intern *June 2023 - Sept 2023*

- Improved upon Apple internal tools that allow employees to manage and test the Health app's interaction with hospital APIs
- Implemented **Java** API endpoints that allow specific data filtering, integrated with caches to reduce **Cassandra DB** calls by ~300%
- Used **React** and **TypeScript** to develop a new UI that adheres to Apple's Human Interface Guidelines and added data summaries to help users quickly understand patterns between passing and failing APIs, and identify large scale incidents
- Placed in the top **10** out of **150** teams in an Apple intern innovation contest (iContest) and presented new ideas to **7** Apple VPs

UC IRVINE STUDENT CENTER AND EVENTS SERVICES **Irvine, CA**
Full Stack Web Developer, Security Engineer *September 2022 - Present*

- Developed and migrated **.NET & C#** products from outdated, insecure authentication schemes (UCI WebAuth) to higher security **Shibboleth** IDP authentication schemes by redeploying products on different servers, and generated **SAML JWT** local auth tokens
- Utilized **AWS** to combat hack attempts by deploying a reverse proxy and firewall rules reducing malicious probes by **80%**
- Improved student experience by using **JavaScript** to process **JSON** data from Occuspace sensors in order to report real-time occupancy data on our website

VMWARE **Palo Alto, CA**
Security and Compliance Engineering - Software Engineering Intern *June - September 2022*

- Saved **~30** hours/week of engineering capacity by implementing products in **GoLang** that allowed engineers/stakeholders to automate audit evidence gathering from compliance data sources like GitLab and AWS for compliance with **PCI & SOC2 regimes**
- Automated evidence bundle generation with compliance metadata such as attestation info, version history, release tags, and anti-tampering security features such as **SHA256** checksums
- Wrote algorithms to scan internal VMware services and Git branches in order to collect production code for presentation to auditors

INVIGRID **Sunnyvale, CA**
Full Stack Software Engineering Intern *June - September 2021*

- Patched **~70**% of fatal security vulnerabilities by developing a backend API in **Node.js** that performs security scans on **Google Cloud Platform** projects and internal resources (VMs, VPCs, Storage Buckets, SQL Instances) to find and remediate **86** of the most common security vulnerabilities, such as configuring firewalls to protect unauthorized SSH or disabling insecure service accounts
- Designed and programmed a multipage portal using **HTML, CSS,** and **JavaScript** where users can detect and patch any vulnerabilities found in their projects, configure and select projects to review, and author new security policies

PROJECTS

PETERPORTAL

- Developed features of a website that describes UC Irvine courses, professor reviews, grade distributions, and course planners
- Used **React.js** and **Redux** to implement upvoting and downvoting on user reviews of courses and professors, allowing fellow students to share opinions without writing a full review
- Wrote backend **TypeScript** that validates users as UCI students using Google Authentication and communicates with a **MongoDB** NoSQL database to store 10,000+ documents of vote data, course reviews, and reported/flagged reviews
- Redesigned database schema to scale with spiking user reviews and votes, minimizing database calls by 70% on average

FINANCETRACKER

- Developed an iOS app with **Swift** and **SwiftUI**, enabling users to log categorized transactions and visualize spending patterns
- Hosted a backend **Firebase NoSQL** database to allow users to store financial transactions and user data all in the cloud by using a password scheme enabling data portability across devices, data reliability via cloud storage, and concurrent profiles on one device
- Encrypted all password information with **SHA256** and **CryptoKit** and stored no plaintext passwords in DB to combat packet sniffing
- Collaborated with Apple designers through 8 iterations for an intuitive UI that aligns with Apple's Human Interface Guidelines.

MESH GENERATOR

- Utilized **OpenCV** and **Python** to calibrate camera parameters like focal length, center coordinates, and 3D translation and rotation
- Captured pictures of a 3D figure using structured illumination in order to associate **NumPy** arrays of points from two different angles
- Leveraged the SciPy **Delaunay** algorithm to transform point clouds into triangle based meshes
- Wrote algorithms to eliminate background, unusable data through foreground and color masks and algorithms to smooth meshes, including triangle pruning, boundary pruning, and point averaging, removing and improving triangle and 3D point data accuracy
- Combined meshes in **MeshLab** to create a full, 3D mesh of the entire figure by using the Poisson based surface reconstruction and point based mesh gluing algorithms