

Kelvin Jou

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Education

University of California Santa Barbara – *B.S. in Computer Engineering* Expected: December 2027
• GPA: 3.9

Experience

Scientific Software Applications Developer, *NSF BioPACIFIC MIP – Goleta, CA* June 2025 – Present

- Boosted polymerization quality experiment data submissions by 75% by developing a cross-platform Flutter app with an object-oriented Django REST & relational PostgreSQL backend, implementing efficient algorithms for real-time experiment evaluation.
- Expanded device coverage by 200% by redesigning a modular Django Allauth backend to dynamically support multiple client IDs, applying software design patterns for scalable authentication across web, iOS, and Android platforms.

Extended Reality (XR) Researcher, *UCSB Human-AI Experience Lab – Goleta, CA* November 2024 – Present

- Co-authored an AI agent-ready extended reality platform, enabling AI agents and users to dynamically control XR environments, by building high-level Python APIs, client-server WebSocket communication, and MCP integration, resulting in a framework validated through case studies for adaptive AI-XR interactions.
- Developed full-stack 3D WebXR hand-tracking simulation tool with Three.js and JavaScript, leveraging HTML5 rendering pipelines to visualize hand-grasp joint positions as point clouds for motion analysis.

Campus Strategist, *Perplexity – Goleta, CA* January 2025 – June 2025

- Collaborated with 5+ student orgs to integrate Perplexity tools, increasing active UCSB users by 140% through workshops and initiatives over Winter and Spring quarter.

Cryptography Researcher, *San Jose State University – San Jose, CA* June 2023 - September 2023

- Extracted trainable features from 100K malware binaries using Python to generate opcode sequences, byte histograms, and heatmaps, enabling steganographic capacity analysis across classical and deep learning models.
- Manipulated low-order bits of hidden layer weights in LSTM and CNN (DenseNet121) models to analyze performance degradation, quantifying steganographic threshold for accuracy loss.

Projects

ScribbleScript Jan 2025

- Designed an award-winning app (SBHacks Best UI/UX) that converts and compiles handwritten code for students preparing for handwritten CS exams
- Tools Used: AWS EC2, Docker, React, SwiftUI

ExpressFlip July 2024 - September 2024

- Published an iOS app with 2k+ downloads that help musicians paginate sheet music PDFs triggered by specified facial cues, reducing page-turn cognitive and physical interruptions during performance by up to 2 seconds.
- Tools Used: SwiftUI, ARKit, SceneKit

Serv December 2021 - June 2023

- Developed and published an iOS app promoting student volunteering using SwiftUI and UIKit, integrating secure check-ins, gamified leaderboards, and interactive maps with backends hosted on GCP. Earned 1st place at a Major League Hacking competition and achieved 400+ downloads on the iOS App Store.

Technologies

Languages: C++, Python, Swift, Dart, C#, JavaScript, Java, SQL, Rust

Technologies: SwiftUI, UIKit, Unity, Django REST Framework, PostgreSQL, Three.js, Docker, AWS (DynamoDB, S3, Lambda, EC2), Google Cloud Platform, Git, Node.js, Model Context Protocols (MCP), Smolagent AI Agent, TensorFlow, Scikit-learn