

Kelvin Jou

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Education

University of California, Santa Barbara – B.S. in Computer Engineering Expected: Spring 2028

- GPA: 3.81
- Organizations: ACM @ UCSB, IEEE, Taiwanese American Student Association, Hong Kong Student Association

Experience

Software Engineer Intern, PayPal – San Jose, CA June 2026 – Present

- Owned development of PayPal's first voice-assisted money transfer capability end-to-end on iOS using Siri/App Intents, from architecture and implementation through testing and integration, enabling authenticated headless money movement for the Savings and Debits experience.
- Built reusable iOS test infrastructure and snapshot-recording workflows, increasing end-to-end regression coverage by 15% across L2/L3 Balances surfaces and improving confidence in production releases.

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

- Co-authored an agent-ready XR platform that lets AI agents and users dynamically control environments and enable spatial understanding; built high-level Python APIs, client-server WebSocket communication, and Model Context Protocol (MCP) integration, then validated intelligent services through adaptive AI-XR case studies.
- Published “XARP: A Human-First and Agent-Ready Extended Reality Toolkit in Python” at ACM SIGCHI EICS 2026, receiving an Honorable Mention.
- Developed a Three.js/WebXR perception prototype that captured hand-joint positions and rendered them as real-time 3D point clouds for grasp-motion analysis, collaborating with a Ph.D. researcher to translate research requirements into an interactive simulation.

Scientific Software Applications Developer, NSF BioPACIFIC MIP – Goleta, CA June 2025 – June 2026

- Increased polymerization-quality experiment submissions by 75% by delivering a cross-platform Flutter application with Django REST APIs and PostgreSQL; expanded device coverage by 200% with authenticated web, iOS, and Android workflows.
- Shipped an end-to-end chemical structure editor in Svelte with Dockerized backend validation and PostgreSQL persistence for structured user-generated files.
- Profiled and optimized a cross-table PostgreSQL API using GIN indexing and fuzzy ranking, reducing query latency by 35% while supporting high-throughput retrieval across 100K+ Lawrence Livermore National Laboratory records.

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

- Evaluated steganographic capacity and model-accuracy degradation across LSTM and CNN (DenseNet121) architectures by extracting features from 100K malware binaries and manipulating low-order bits of hidden-layer weights.
- Published “On the Steganographic Capacity of Selected Learning Models” in Springer Nature’s Machine Learning, Deep Learning and AI for Cybersecurity (2025).

Projects

Domain-Specific Policy Resolutions for Bitemporal Ontology Generation May 2026 – Present

- Proposed a checkpoint-based framework for auditable contradiction resolution in bitemporal knowledge graphs generation, allowing pluggable, user-defined policies to be evaluated against a common evidence baseline.
- Tools Used: Python, LMStudio, SparQL, CUDA, scikit-learn

ExpressFlip July 2024 - September 2024

- Published an iOS app with 2k+ downloads helping 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, UIKit, ARKit, SceneKit

Technologies

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

AI/ML & Data: PyTorch, cuDNN, Hugging Face, Gaussian Splatting, LLM inference, multi-agent systems, vector search (HNSW), semantic retrieval, model evaluation, knowledge graphs, RDFLib, SPARQL, PostgreSQL

Software & Infrastructure: REST APIs, WebSockets, MCP, Docker, AWS (EC2, S3, DynamoDB), Django, Flutter, SwiftUI, Google Cloud Platform, Svelte, Three.js, Unity, Git, Harness.io (CI/CD), LLDB Debugger, code review

Relevant Coursework: Data Structures and Algorithms, Object-Oriented Programming, Computer Architecture, Computer Networking, Digital Logic Design (FPGA), Chip Design Verification