Nicole Lee

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Education

University of California, Berkeley **Expected Graduation: May 2027**
B.S. in Electrical Engineering and Computer Science, B.S. in Bioengineering

- **Hong Kong Scholarship for Excellence Scheme** - Scholar; awarded USD$155,000 scholarship to study at UC Berkeley
- **Coursework:** Data Structures & Algorithms, Computer Networks, Web Development, Computer Architecture, Machine Learning, Databases, Efficient Algorithms and Intractable Problems, Operating Systems
- **Campus Involvements:** Web Development @ Berkeley (Industry Developer), Cal Hacks (Director), Society for Women Engineers

Experience

Forward Deployed Engineer | Wedge (YC S25) **Aug 2025 – Dec 2025**
YC-backed Palantir for Healthcare AI Agents

- **Scoped and delivered a clinician analytics** platform for LA General Medical Center ($5B revenue, 600-bed Level I trauma center) using React, TypeScript, and GraphQL, visualizing EHR and scheduling bottlenecks to increase bed turnover across 30K+ annual discharges.
- **Architected 20+ frontend components** (data tables, filtering systems, real-time metric panels) with GraphQL queries and client-side caching for low-latency rendering of patient metrics and scheduling data at scale.
- **Designed REST APIs** ingesting FHIR/HL7-based EHR data into a unified query layer; built **scheduling optimization logic** (conflict detection, utilization scoring) and ADT-driven pipelines with caching to reduce query latency under concurrency.

Software Engineer Intern | Anchor Logics **Jun 2025 – Aug 2025**
Berkeley Skydeck-backed CV platform for neurological rehabilitation

- **Built end-to-end frontend (0→1)** for Propriologics, a real-time telemetry platform (Next.js, TypeScript, and AWS S3); shipped data visualizations, timeline scrubbers, and playback controls for streaming 3D kinematic motion data from IoT sensor vests for 50+ ALS/Parkinson's patients.
- **Fine-tuned video motion analysis** pipeline (OpenPose, YOLOv12, DeepSORT, OpenCV) for gait analysis, improving keypoint detection consistency by 25% and reducing tracking loss in occluded frames by ~35%, automating extraction of stride length, cadence, and step height.
- **Developed high-throughput caching** and storage layer (AWS S3, Redis, PostgreSQL) for **2,000+ CV models** with sub-100ms retrieval latency.

Software Engineer Intern | Digpath.ai **Apr 2025 – Jun 2025**
Berkeley Skydeck-backed AI pathology platform accelerating cancer diagnostics

- **Deployed a SageMaker-based cell segmentation pipeline** integrating Meta SAM with GPU-accelerated inference, automating pathology annotation across 500+ whole-slide images (70GB dataset); reduced manual annotation turnaround from days to under 2 hours per case.
- **Developed a serverless analytics platform** (AWS Amplify, Lambda, DynamoDB) with 10+ React data visualization components tracking pathology image ingestion, storage, and case volume across imaging pipeline; improved frontend load performance by 20%.

Director | Cal Hacks [Link] **Aug 2024 – Present**

- **Built and deployed 3 production websites** (live hacker portal, judging system, public site) for the largest collegiate hackathon, serving **4,000+ hackers** and **60+ sponsors**, using Next.js, React, TypeScript, Supabase, PostgreSQL, and Vercel.
- **Architected an end-to-end sponsorship pipeline** reaching **2,000+ companies (14,000+ contacts)**, raising **USD$1,250,000+** in sponsorship revenue.

Teaching Assistant, Full-stack Development | University of California, Berkeley [Link] **Nov 2025 – Present**

- **Led lectures**, curriculum delivery, and office hours for **100+ students/semester** across Frontend (React, Next.js, UI/UX), Backend (Node/Express, Flask/Django, APIs, auth), Databases (MongoDB, SQL, ORMs, Firebase), and DevOps.

Undergraduate ML Researcher | University of California, San Francisco **Aug 2024 – Feb 2025**

- **Developed a scalable RAG pipeline** indexing **2,000+** neurodegenerative-disease research papers using FAISS, PyPDF, LangChain, Microsoft Copilot and Python, supporting NLP semantic search, document chunking, and metadata-aware retrieval; adopted by **100+** UCSF researchers.

Projects

Synapse AI (HackMIT 2025) [Link] | *Python · TypeScript · React · Neo4j · Anthropic API · spaCy · D3.js · LangChain*

- Built an NLP pipeline parsing PDFs into knowledge graphs, extracting **200+ concept nodes** and typed relationships per document into **Neo4j**.
- Engineered a **React + D3.js** frontend rendering **8 synchronized visualization modes** (force-directed graph, kanban, timeline, mind map, etc.) with real-time bidirectional edits propagating across all views in **under 100ms**.
- Integrated **SM-2 spaced repetition** with LLM-generated flashcards and cloze deletions via Anthropic API, generating **50+ cards/doc**.

Flusk (Flush + Disk LSM Tree) [Link] | *Java 17 · Maven · Guava · Snappy · JUnit 5 · Railway*

- Built a production-deployed **LSM-Tree storage engine** from scratch, full write path **(WAL → MemTable → SSTable → 4-tier compaction with tombstone GC)**, sub-millisecond lookups, Bloom filters, and binary-search sparse indexing; same architecture as DynamoDB and RocksDB.
- Shipped 7-endpoint **REST API** via Java's built-in HttpServer (no frameworks) as a **6.3MB** fat JAR on Railway with a live dashboard for real-time key ops, SSTable tier inspection, and compaction management; **20/20** unit tests passing.

Skills

Languages: Java, Python, Go, C/C++, HTML/CSS, TypeScript, JavaScript, SQL, Rust, Swift, Kotlin, RISC-V
Backend: Node.js, Express.js, FastAPI, REST APIs, PostgreSQL, Redis, MongoDB, AWS (EC2, S3, Lambda), Azure, Docker, .NET, Cloud Computing
Frontend & Systems: React, Next.js, OpenCV, TensorFlow, PyTorch, MediaPipe, Linux, Git, Bash, CI/CD, Distributed Systems