Stephen Hung

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Education

University of California, Berkeley Expected: May 2027

Bachelor of Science in Electrical Engineering and Computer Sciences

- **Coursework:** Data Structures, Algorithms, Computer Architecture, Discrete Math, Computer Security, Artifical Intelligence
- **Activities:** Cal Theta Tau (Co-ed Professional Engineering Fraternity), Cal Blueprint (Nonprofit Technology Solutions Club)

Skills

Programming Languages: Python, JavaScript (ES6+), TypeScript, Java, C++, C, Ruby, SQL, MATLAB, HTML5/CSS3, Rust
Libraries/Frameworks: React.js/Native, Node.js, Express.js, FastAPI, Next.js, Tailwind CSS, LangChain, Expo, Ruby on Rails
Developer Tools: Git, GitHub, Postman, Docker, VS Code, Figma, Jest, Vercel, Render, Railway, Websockets, Linear, Travis CI
Databases & Cloud: MongoDB, Firebase, Supabase, AWS (S3, EC2, Lambda), GCP (Cloud Storage, Vertex AI), Redis, SQLite
Relevant Certifications: Stanford University Machine Learning Specialization, Google IT Automation with Python Specialization

Experience

Software Developer Berkeley, CA

Blueprint, Replate Food Rescue Platform Sept 2025 – Present

- Developing a mobile app using **React Native** and **Expo** to digitize food donation tracking for **20+** partner non-profit orgs.
- Architected full authentication system with signup, login, account management, and comprehensive error handling using **React Native** forms and **React Context API**, extending Replate's existing **Ruby on Rails** backend with secure API endpoints.

Software Engineering Consultant Tustin, CA (Remote)

ClearPath Medical, Medical Device Manufacturing Project Sept 2025 – Dec 2025

- Developed **AI-powered PFMEA automation tool** using **FastAPI** and **LLMs** with **self-validating agentic pipeline** that converts work instruction PDFs into risk assessments, reducing analysis time for FDA-compliant medical device QC by **85%**.
- Engineered security-first architecture with **WebSocket real-time tracking**, multi-stage validation system (ANALYZE → RATE → VALIDATE → CORRECT), and fully local processing with **SQLite** storage, ensuring HIPAA-compliant handling.

Software Engineering Intern Berkeley, CA

OptiGenix May 2025 – Aug 2025

- Achieved **92.3% extraction accuracy** on labeled test data by training a **generative AI** model using Google Vertex AI, structuring detailed blood marker data from **60 unstructured** blood test PDFs stored and processed in **GCP cloud storage**.
- Enabled secure and scalable ingestion of clinical data by designing and deploying **HIPAA-compliant data workflows** on **Google Cloud Platform (GCP)**, supporting 7,500+ monthly PDF uploads with **Cloud Storage, IAM role-based access control, server-side encryption**, and comprehensive **audit logging and monitoring** for regulatory compliance/tracing.
- Led backend migration from **Supabase** to **Firebase**, redesigning auth and database schema logic, reducing infra costs by **35%**

Projects

darwin (Multi-Agent Coding) - Cal Hacks 12.0 Winner | *React, Letta, LiveKit, Sui, 3.js* *GitHub Repo*

- Built **6-agent orchestration system** with interactive dashboard and animated avatars where 4 AI coding agents generate UIs from natural language while a commentator agent analyzes rendered outputs via screen capture and provides live narration
- Implemented **Blockchain-powered RL** feeding tipped code back to agents through **Letta** cross-agent memory for inference.
- Engineered real-time collaboration platform with **LiveKit STT** for voice commands, **ElevenLabs TTS** for agent commentary, live interactive chat where agents synchronously debate design approaches and modify code , and gasless **Sui** blockchain tipping.
- Developed full-stack React app with audio-reactive **Three.js/WebGL** visualizations synced to voice frequencies, animated agent avatars, code editor with live preview panel, and synchronized real-time multi-spectator collaborative viewing experience.

ClarifAI (AI Research Agent) - NVIDIA AI Hackathon | *FastAPI, LangChain, Docker* *GitHub Repo*

- Led development of a web application that uses **agentic AI** to deconstruct research papers into key concepts, providing users with code implementations, 3blue1brown-style animated explanatory videos, and interactive Q&A's about uploaded content.
- Engineered a **self-correcting LangChain** pipeline that autonomously writes, executes, debugs, and stitches Manim animation code with parallel rendering for reliable video and commentary production and real-time progress logging using **WebSockets**.

crakd.co (AI Talent Finder) - BELLE AI Hackathon Winner | *React, GraphQL, Gemini* *GitHub Repo*

- Developed a **web application** that identifies talented software developers using a hybrid AI model combining **quantitative GitHub metrics** with **qualitative LLM code analysis** to rank and find developers based on natural language search queries.
- Implemented a **FastAPI backend** with Docker containerization and integrated **GitHub GraphQL API** for comprehensive repository analysis, along with **Google Gemini LLM** and PCA for intelligent developer assessment and ranking algorithms.

SpotifyTUI (Terminal Music Platform) | *Python, TypeScript, Tensorflow.js, Node.js* *GitHub Repo*

- Architected terminal-based music client with **TensorFlow.js neural network** trained on 20D audio feature vectors for mood-based music classification, integrating **OAuth2**-authenticated **Spotify** and **Genius APIs** for playback and lyrics retrieval.
- Built production-ready **Express.js/TypeScript API** serving **TensorFlow.js neural network** trained on 32K+ Spotify tracks with 20D audio features, delivering recommendations in **12ms** with intelligent caching and comprehensive error handling.