Junkai Zhao

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EDUCATION

University of California, Berkeley | Berkeley, CA — Expected May 2027
B.S. Industrial Engineering & Operations Research; Minor in Electrical Engineering & Computer Science
Coursework: Data Structures, Algorithms, Software Engineering, Operating Systems, Database Systems

TECHNICAL SKILLS

Languages: Java, Python, TypeScript, JavaScript, SQL, C
Web & Backend: React, Next.js, HTML/CSS, Node.js, FastAPI, Django, WebSockets
Data & AI: PostgreSQL, Redis, ChromaDB, RAG, YOLOv8, MediaPipe
Cloud & Tools: AWS, GCP, Docker, Supabase, Vercel, Git/GitHub, GitHub Actions

WORK EXPERIENCE

BEKEN Corp (Riselink) | Web Product Demo — Remote / Sacramento, CA
Software Development Intern — Jul 2026 – Present

- Built an end-to-end multilingual AI learning prototype for children ages 3–5 using React, TypeScript, and FastAPI; tested with **~20 families** and refined child-focused prompt safeguards.
- Reduced end-of-speech response **latency 53% (~7.5s to ~3.5s)** by tuning STT audio chunking, speech buffers, and LLM selection; verified through timed before-and-after tests.
- Dockerized a FastAPI/WebSocket backend on AWS (Lightsail to EC2); load-tested **50+ concurrent WebSocket sessions** with k6 and added reconnection, session recovery, and health checks.
- Developed a Kotlin/Jetpack Compose Android app from protocol specs without direct board access; coordinated remote testing of BLE controls and Wi-Fi/FTP transfers, adding Wi-Fi fallback and LRU audio caching.

NeuralSeek | Agent Demo — Remote, US
AI Engineering Intern — Mar 2026 – May 2026

- Prototyped an interview-preparation agent in NeuralSeek mAIstro with curated RAG retrieval, sandboxed Python execution, and automated test-based feedback for a partner-facing demo.

SomeIdea AI (Startup) | Demo — Berkeley, CA
Full-Stack Engineering Intern — Jan 2025 – Apr 2025

- Developed a Llama 3.1 microservice converting financial queries to schema-validated JSON, reducing database **retrieval errors ~40%** in internal before-and-after evaluations of **~200 test prompts**.
- Built a LangChain pipeline to retrieve financial data and generate normalized financial statements, achieving **95%+ schema-valid output** in internal testing.

PROJECTS

Brainstormer | TypeScript, Next.js, React Flow, Claude Haiku 5.5, Jev | Devpost Cal Hacks 13.0

- Built a real-time React/TypeScript workspace that turns incremental speech into an editable idea tree through schema-validated tree operations.
- Coordinated concurrent speech, research, and dialogue through centralized state reconciliation to preserve manual edits and reject stale responses.

MouseFit Studio | TypeScript, Next.js, FastAPI, PostgreSQL, Redis | mousefit.pro

- Built and deployed a full-stack gaming-mouse recommender with a **434-product catalog**, ranking by hand dimensions, grip, shape, and weight; tested by **~50 people**.
- As a separate prototype, fine-tuned YOLOv8s-seg on a **303-image dataset**, reaching **88.5% mask mAP@50–95** on the validation split; exported to TensorFlow.js for in-browser inference.
- Built a MediaPipe-based grip classifier and ChromaDB RAG pipeline to rerank products using user feedback, LLM reasoning, and structured features.