Kasra Farsoudi

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Education

University of Southern California — Los Angeles, CA
B.S. in Computer Engineering & Computer Science — *Dec. 2026*
***Relevant Coursework**: Professional C++, Machine Learning, MOS VLSI Circuit Design, Parallel Design, Data Structures, Embedded Systems, Digital Circuits, Distributed IoT Systems, Algorithms & Theory of Computing, Software Development, Operating Systems, Computer Architecture, Networking*

Experience

Software Engineer — Jul. 2023 – Present
Brake Performance — *Los Angeles, CA*

- Implemented end-to-end Apple Pay on an e-commerce platform (Next.js payment sessions, PHP Symfony backend), driving a ∼20% increase in online revenue in the quarter after launch.
- Devised a PHP+MySQL fraud-detection engine, cutting fraudulent orders ∼37% in the months after deployment.
- Automated a cron for AWS Linux that ingests shipment data from UPS & USPS and updates order status.
- Engineered a full-stack sales report system with an SQL data ingestion pipeline and React Admin, providing day/month/year revenue breakdowns by order, part, and product.
- Established a reusable transactional email system for wholesale approvals, shipment errors, and fraud alerts.

Junior Software Engineer — October 2022 – July 2023
I-Safe — *Carlsbad, CA*

- Led the frontend team through agile sprint planning, mentoring new interns and delegating work across the group.
- Developed the front-end logic for handling 25+ REST API endpoints in TypeScript on React Native.
- Built the Redux state management system, including user data storage and synchronization to React lifecycle.
- Streamlined Redux-Saga middleware for RESTful API calls & pipelining asynchronous data to client-side storage.
- Spearheaded the entire login and authorization workflow, from design to implementation.
- Integrated secure token-based authentication with refresh logic in JavaScript.

Projects

Custom Database Engine | *C++23, Unix, CMake* — October 2026

- Designed and implemented a persistent, SQLite-style storage engine in C++23.
- Built a page manager, buffer pool, and on-disk B+-tree supporting point lookups, inserts, deletes, and ranges.
- Built slotted 4 KB pages with free-space accounting for variable-length records, plus a write-ahead log and crash-recovery path validated after mid-write process kills.

SCTennis | *Go, sqlc, SQL, Redis, Gin* — January 2026

- Built a Golang backend for the USC tennis club app, with auth and real-time crons for tennis events.
- Structured the API one file per entity, each with its own middleware.
- Generated type-safe database access with sqlc from hand-written SQL.
- HTTP endpoints configured with gin, and fast auth with JWTs stored on redis.

Self-Hosted AI Agent | *Ollama, Fedora Linux, Python, Docker, PostgreSQL, RAG, n8n* — August 2026

- Architected a fully private AI assistant stack on a headless RTX 3090 Fedora server, accessed over Tailscale.
- Deployed local LLM inference with Ollama (Qwen 3.8 27B) wired to OpenCode and a Dockerized LibreChat UI.
- Memory service in Python/FastAPI + SQLite and an n8n + Postgres automation layer connected to gmail.

Technical Skills

Languages: C/C++, Go, JavaScript, TypeScript, SQL (MySQL & Postgres), PHP, Verilog, CUDA, Python, Java
Frameworks: React / React Native, Node.js, Symfony, API Platform, ESP32 / ESP-IDF, MongoDB
Developer Tools: Git, Docker, Tailscale, n8n, Neovim, Ollama, AWS, OpenCode, CMake
Linux Distros: Arch (Personal Distro), Amazon Linux, CentOS, Fedora, Ubuntu, Raspbian

Miscellaneous

Head of Engineering @ USC Tennis Club - Responsible for any software shipped for the genclub tennis team.
2022 SDSU Big Data Hackathon - 3rd place overall, 1st place in geo-computational thinking.