

Harsh Gupta

San Francisco

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[Portfolio](#)

Skills

AI Application Engineering

Groq, Anthropic, Openrouter, Mistral, Amazon, xAI, Google, Deepseek, OpenAI, RAG, Agentic Workflows, Chat Apps, Neo-Chat Apps

Frontend Engineering

Next.js, React, HTML5, Canvas, p5.js, CSS, Tailwind CSS, Three.js, TypeScript, Framer Motion, CodeMirror, WebGL

Backend & API Development

RESTful APIs, Server-Sent Events (SSE), OAuth 2.0, Role-Based Access Control, Stripe

Devops

Docker Compose, Nginx, Automated Pipelines, IaC, Kubernetes, Event-Driven Architecture, Rate Limiting, Monitoring & Logging

Graphics & Multimedia

GLSL Shaders, WebGL Rendering, FFmpeg, Real-Time Visualization, Video Export Pipelines

Platform Engineering

Microservices, Docker, Kubernetes, Golang (Gin), React, PostgreSQL, Redis, RabbitMQ, MinIO, ClickHouse, Prometheus

Profiles

 [harsh2204](#)

 [guptah4](#)

Summary

Full-stack engineer with deep experience building developer platforms and AI-powered applications. Led frontend architecture for Tesla Private Cloud serving 100+ internal developers and customers, driving platform adoption that saved \$100M+ in cloud costs. Passionate about crafting intuitive developer experiences and leveraging AI to create transformative user products.

Experience

Tesla April 2023 - Present
Full Stack Software Engineer Palo Alto, CA

Tesla

- Led frontend development for Tesla Private Cloud platform using Next.js and React; transitioned cloud footprint in-house, deploying \$5B hardware and saving hundreds of millions in cloud spend.
- Developed multiple Next.js applications improving developer experience and reducing onboarding time by 70%, accelerating adoption to 300+ developers within 6 months; designed Golang backend APIs in microservices architecture.
- Built AI applications including RAG systems, chatbots, and data-scraping pipelines; created admin dashboard in one week using Next.js/React and initiated beta testing within two weeks.
- Collaborated with UX team on user research and iterative testing to optimize application experience and reduce user misery scores; implemented CMS for technical documentation.
- Mentored interns, converting them to full-time roles to drive talent development and leadership.

Education

McMaster University July 2017 - March 2023
Software Engineering B.Eng
<https://www.mcmaster.ca/>

Projects

ShaderLab AI December 2024 - Present
A platform for creating generative artwork with AI
<https://shaderlab.ai/>

- A platform that uses large language models to generate, edit, and teach GLSL shaders, featuring real-time previews, audio-reactive effects, and automated video exports.
- Key implementations include AI-driven shader creation with complexity analysis, step-by-step learning tutorials, or simply building and sharing artifacts with shaders.
- Currently in closed alpha and processed over 3.5B tokens and 100+ lessons and 100k+ shaders.

Typescript, Golang, Three.JS, HPC-Rendering Pipelines, Postgres, RabbitMQ, IDB, MinIO, AI, React, NextJs, Gorm, SSE