

Yash Mittal

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SOFTWARE ENGINEER, AI AND FRONTEND

Software engineer with **3.5 years of production experience**, building **AI-powered products** on a frontend foundation. At Cyphronix I build the **React** and **Next.js** interfaces for live **AI agents** and the tool-calling tools behind them, across 4 production products. The first **1.5 years** were dedicated front-end work; the **2 since** have combined frontend with AI and Web3.

TECHNICAL SKILLS

AI and LLMs	: LLM application development, AI agent interfaces, tool calling and function calling, agent tool design and registries, agentic workflows, system prompt design, model benchmarking and selection, Vercel AI SDK, Amazon Bedrock
Retrieval	: Retrieval-Augmented Generation (RAG), embeddings, vector databases (Pinecone, HNSW), hybrid search (BM25, semantic, Reciprocal Rank Fusion), chunking, re-ranking, RAGAS evaluation. Studied through coursework and applied in personal projects
Frontend	: React, Next.js 15 (App Router, React Server Components), TypeScript, JavaScript, HTML, CSS, Tailwind CSS, shadcn/ui, Radix UI, Jotai, MDX, responsive layout, component and design systems
Backend	: Where a product needed one: Node.js, Bun, Fastify, REST API design, MongoDB, PostgreSQL, Supabase, event indexing pipelines
Web3	: Aztec Network (Aztec.js, ZK rollup, private state), Sui, Solana, Ethereum and EVM (viem, wagmi, ethers), Monad, zkPassport, wallet connection flows, cross-chain bridges, smart-contract integration
Languages	: TypeScript, JavaScript, Rust, SQL
Tooling	: Git, tsup, npm package publishing (dual ESM and CJS), Vitest, Vercel

EXPERIENCE

Frontend Engineer (AI and Web3) <i>Cyphronix Software</i>	May 2024 – Present <i>Bengaluru, India (Remote)</i>
- Built the interfaces for the platform's live AI agents, and shipped 9 tool-calling tools behind them across 2 networks (Walrus, Monad), registered through 1 shared factory. - Built the React and Next.js 15 frontends for 4 live products: an NFT marketplace, a cross-chain bridge, an AI red-teaming arena, and an internal admin dashboard, all on the App Router with React Server Components. - Shipped a 2-phase deposit-and-claim bridge flow that survives page refreshes, wallet disconnects, and users leaving mid-transfer, by checkpointing state the moment the L1 deposit confirms so no failed step can cost a user their funds. - Authored and maintain @ravenhouse/omni-sdk on npm, built for developers outside the team: 60+ releases, 9 independently importable subpath exports, and 2 module formats (ESM and CJS) built with tsup. - Built an Aztec event indexer in Bun, MongoDB, and Fastify because the network ships no hosted one and the frontend had no way to read state: 8 event types decoded on a cron, upserted idempotently so a retried window stays duplicate-free.	
Front-End Developer <i>Craxinno Technologies</i>	2022 – May 2024 <i>India</i>
Built and shipped responsive production web interfaces for client projects in React and vanilla JavaScript, covering design handoff, cross-browser behaviour, and every breakpoint. The role where the frontend fundamentals were learned.	

PROJECTS

Red Sentinel, AI Red-Teaming Arena	<i>Next.js 15, TEE, Sui, Solana, EVM</i>	<u>Case Study</u>
- A live market for AI safety claims: anyone deploys an AI agent with private instructions and locks a prize pool behind it, and attackers pay per attempt to make it break them. The agent runs inside a TEE, which signs every attack result, so a verdict can be verified before any money moves. - I built the Next.js 15 frontend and the admin dashboard, the contract integrations on all 3 chains behind them, the Bun and MongoDB event indexer serving their reads, and the custom ML training data used to harden agents against known jailbreak classes. Each chain settles its own payouts, so a user is paid on the chain they started on.		
Raven House, Privacy-Preserving NFT Marketplace on Aztec	<i>Next.js 15, Aztec.js, Bun, MongoDB</i>	<u>Case Study</u>
Solo build of an NFT marketplace on a ZK rollup, where ownership and balances live in encrypted notes, so no view can simply read state and every screen is reconstructed. No subgraph exists for Aztec, so I wrote the indexer as well as the app, and the frontend never reads the chain.		

EDUCATION AND LEARNING

Jiwaji University <i>B.Sc. Mathematics</i>	Gwalior, India 2021 – 2024
Completed DeepLearning.AI's Retrieval-Augmented Generation coursework (2026): BM25 and semantic search, vector databases and HNSW, chunking, re-ranking, and RAGAS evaluation, written up at yashmittal.xyz/blog.	