

YOGESH SINGH RAJAWAT

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🌐 [LinkedIn](#)

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🌐 [Portfolio](#)

Education

National Institute of Technology, Hamirpur

2022–2026

Bachelor of Technology in Computer Science and Engineering

CGPA - 8.24

Relevant Coursework: Operating Systems, Database Management Systems, Computer Networks, Object-Oriented Programming, Distributed Systems

Work Experience

Software Engineer (Contract)

Mar – May 2025

Freelance – Decentralized Payment Relayer System

- Tech Stack: **Solidity, Next.js, Ethers.js, Web3.js, MetaMask, BNB Smart Chain**
- Architected a Web3 payment relayer enabling gasless USDT transfers by implementing meta-transactions (**EIP-712 / ERC-2771** standards), automating gas funding for **100+ active users**.
- Engineered a Next.js interface integrated with Ethers.js and MetaMask, optimizing transaction execution to achieve a **99.2% success rate** across **500+ mainnet interactions**.

Projects

CodeSphere – Collaborative Classroom & Code Sandbox

🌐 [Website](#)

React.js, Node.js, Express.js, MongoDB, Docker, WebSockets

- Built a collaborative coding platform where instructors create rooms with coding challenges, quizzes, and instructional pages; students join via shareable links to code in a **browser-based IDE**.
- Ran user-submitted code in **Docker containers** via **dockerode** with **network isolation** and resource limits, using worker threads with a **concurrency queue** capping 5 parallel executions across 7 languages.
- Verified submissions by comparing stdout against test cases and applying **RE2 regex checks** on source and output patterns; graded quizzes and flags, tracking per-user completion in MongoDB.
- Synchronized live code editing over WebSockets with a **sliding-window rate limit** of 10 runs per minute; built **REST APIs** with JWT auth and MongoDB injection sanitization.

Prism AI – Content Repurposing & Distribution Engine

🌐 [Website](#)

Next.js, TypeScript, FastAPI, PostgreSQL, Server-Sent Events

- Implemented a **content repurposing service** that takes YouTube links, audio files, or raw transcripts and produces blog articles, LinkedIn posts, X threads, and short-clip suggestions with cover thumbnails.
- Structured an **async FastAPI pipeline** (ingest → transcribe → highlight extraction → generation → critic review) using **asyncio.gather** to parallelize text generation, clip captions, and thumbnail rendering.
- Routed text generation through a fallback chain across **NVIDIA NIM, Gemini, OpenRouter, Groq**, and **Ollama** (429 backoff, 402 skip); chained transcription across **faster-whisper, AssemblyAI, Groq Whisper**, and **OpenAI Whisper**; generated thumbnails via **HuggingFace FLUX.1** with Pollinations fallback.
- Streamed pipeline progress over **Server-Sent Events** with a 3-second polling fallback, committing done state before broadcasting; validated output programmatically (blog 1000+ words, tweets under 280 chars) with a single correction re-roll.

Technical Skills

- **Languages:** C++, Python, Java, JavaScript, TypeScript, SQL, Solidity
- **Web Development:** Next.js, React.js, Tailwind CSS, FastAPI, Node.js, Express.js, REST APIs, WebSockets
- **Databases:** MongoDB (Mongoose), PostgreSQL (Supabase), MySQL, Redis, SQLite
- **Web3:** Solidity, Ethers.js, Web3.js, MetaMask, EIP-712, ERC-2771, BNB Smart Chain
- **Tools & Platforms:** Docker, Git, GitHub, Linux, Vercel

Achievements

- **Codeforces:** Achieved a **Pupil** rating with **250+ problems solved**. [Profile](#)
- **Competitive Programming:** Solved **600+ algorithmic problems** across Codeforces, LeetCode, GeeksforGeeks, and other coding platforms. [Profile](#)
- **JEE Main 2022:** Secured the **99th percentile** with a **CRL Rank of 9857**.
- **Chess.com:** Achieved a peak rating of **2000+**, ranking among the **top 0.3% of players globally**. [Profile](#)