Jay Prajapati

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EDUCATION

Government Engineering College (GTU)	Patan
Bachelor of Engineering in Computer Science	*Jun 2024 – Present*
R.C. Technical Institute (GTU)	Ahmedabad
Diploma in Information Technology (CGPA: 7.65)	*Jun 2021 – May 2024*

PROJECTS

ImageShell – Image Hosting Platform

- Developed a secure, scalable image hosting platform using **Next.js** and **TypeScript**; backend persisted in **MongoDB**.
- Implemented **NextAuth** authentication and integrated **Razorpay** for subscription payments (payment flows, webhooks, verification).
- Designed and exposed RESTful **CRUD APIs** with role-based access control (RBAC) and input validation to support admin and user workflows.
- Optimized frontend and delivery pipeline, reducing image load times by ˜**70%** using **ImageKit** for CDN-based real-time transformations and lazy loading.

Online Interview

- Engineered a real-time video conferencing platform using **WebRTC (Web Real-Time Communication)** for peer-to-peer media, with chat, screen sharing, and session recording.
- Integrated **Clerk** authentication and implemented JWT-based session handling and role-based permissions for interviewers and candidates.
- Leveraged **Stream API** for scalable messaging and presence; implemented signaling and reconnection strategies to maintain low-latency streams.

AI ChatApp – Real-Time Gemini AI Chatbot

- Built a real-time AI chatbot using the **MERN stack** and **Socket.IO** for bi-directional messaging and event-driven updates.
- Integrated **Google Gemini AI** as the conversational backend; implemented request/response orchestration and prompt handling.
- Implemented **Redis** caching and optimized API patterns to reduce median response latency from **900ms to 150ms**.
- Containerized services with **Docker** and used environment-based configuration for reproducible development and production deployments.

LLM-Powered Task Automation

- Developed a natural language agent in **Python** to automate web search, summarization, file handling, and email automation using modular tool plugins.
- Integrated **LLaMA via Groq Cloud API** for inference; built both **CLI** and **Streamlit UI** for interactive workflows.
- Implemented tool wrappers for web scraping, file I/O, and SMTP email with robust logging and error handling for reliability.
- Enabled autonomous multi-step task execution with on-the-fly web content summarization and structured outputs, improving task throughput and user efficiency.

TECHNICAL SKILLS

Languages: JavaScript (ES6+), TypeScript, Python
Frontend: React.js, Next.js, Tailwind CSS, WebSockets (Socket.IO)
Backend: Node.js, Express.js, REST APIs, Authentication (NextAuth, JWT), CI/CD
Databases/Tools: MongoDB, PostgreSQL, Redis, Docker, Git, AWS, Vercel, ImageKit
Libraries/Other: pandas, NumPy, Matplotlib