

Lakshya Singhal

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Education

Ajay Kumar Garg Engineering College, Ghaziabad, UP

Oct 2023 – May 2027

B.Tech in Computer Science & Engineering (AI & ML)

GPA: 7.8/10

- Relevant Courseworks: Data Structure & Algorithm (DSA), OOPS in JAVA, DBMS, OS, CN

Technical Skills

Languages: JavaScript (ES6+), Java, Python, SQL, HTML5, CSS3

Frontend: React 19, Tailwind CSS, Zustand, DaisyUI, React Query, Recharts, Chart.js

Backend: Node.js, Express.js, REST APIs, Jest, Socket.IO, WebRTC, LiveKit

Databases: MongoDB, MySQL, Redis

Tools: Git/GitHub, GitHub Actions, Docker, Vite, Postman, Cloudinary, VS Code, Vercel, Render

AI Tools: GitHub Copilot, Gemini API

Competitive Programming: 500+ LeetCode problems, LeetCode (Max Rating: 1725), CodeChef 2 ★ (Max Rating: 1440)

Technical Projects

Real-Time Chat Application

Live Demo | GitHub

React 19, Zustand, Socket.IO, WebRTC, LiveKit, Node.js, MongoDB, JWT

- Built a full-stack real-time chat platform supporting **1:1 and group messaging** with **Socket.IO**, handling **1K+ messages/day** at **200ms latency** with optimistic UI updates and real-time sync.
- Engineered a **dual calling system** — **WebRTC** for peer-to-peer **1:1 audio/video** calls with **Twilio ICE/TURN** achieving **95% NAT traversal success**, and **LiveKit** for scalable multi-participant **group calls** with **screen sharing**, active speaker detection, and host controls. host handover, and per-group **call history** tracking duration and participants.
- Designed **20+ REST API endpoints** with **JWT + HTTP-only cookie auth**, invite link system with expiry, and **Cloudinary** media uploads for avatars and attachments.

Multi-Tenant SaaS Billing Infrastructure

Live Demo | GitHub

Node.js, Express.js, MongoDB, Redis, BullMQ, Docker, GitHub Actions, Razorpay, Jest

- Built a **multi-tenant billing backend** with **20+ REST APIs**, enforcing tenant isolation using **JWT + RBAC** and **Redis-backed rate limiting**, achieving **<100 ms** average response time.
- Integrated **Razorpay** payments with **HMAC verification**, idempotency middleware eliminating duplicate charges, webhook deduplication, and **dead-letter queues** for reliable event processing.
- Designed an asynchronous processing pipeline using **BullMQ + Redis** for email delivery, PDF generation, and webhook retries, with a **circuit breaker** fallback to in-memory queues during Redis outages.
- Achieved **60%+ test coverage** across 25+ automated tests, validating failure recovery with Docker-based Redis fault injection and automated deployment through **GitHub Actions CI/CD**.

FinSight – AI-Powered Financial Dashboard

Live Demo | GitHub

React 19, Node.js, Tailwind CSS, Recharts, Gemini API, jsPDF

- Developed and deployed a full-stack AI-powered financial dashboard using **React, Node.js, MongoDB, and Gemini API**, enabling real-time transaction analytics, KPI tracking, and cash-flow visualization.
- Integrated the **Gemini API** to build an AI financial assistant supporting natural-language queries, anomaly detection, and automated spending insights.
- Built an automated reporting pipeline using **jsPDF**, generating investor-ready multi-page financial reports with optimized client-side state management.

Experience

Frontend Developer Intern – Blockchain Research Lab, AKGEC

Sep 2024 – Mar 2025

- Developed a College Attendance Portal in React using 15+ reusable components.
- Integrated 10+ REST APIs and implemented role-based authentication for 500+ users.
- Reduced manual attendance processing effort by approximately 80%.

Certifications

- Oracle Cloud Infrastructure 2025 Generative AI Professional
- Oracle Cloud Infrastructure 2025 AI Foundations Associate
- DRDO & NIT Delhi – Agentic AI and MLOps for Defence