

Aman Kumar Singh

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EDUCATION

Vellore Institute of Technology,

(October, 2022 - May, 2026)

B.Tech in Computer Science and Engineering, CGPA: 8.36/10

TECHNICAL SKILLS

Programming Languages: Java, JavaScript, SQL

Frameworks & Libraries: React.js, Node.js, Express.js, Next.js

Database: PostgreSQL, MongoDB

PROJECTS

Project Management System

- **Built** a comprehensive project management platform for teams to organize work into hierarchical workspaces, projects, and tasks. Features a complete task system, collaborative comments, and data visualization via **analytics dashboards**.
- **Implemented** a resilient, event-driven backend using **Inngest** for asynchronous jobs, ensuring reliable data sync from **Clerk webhooks**. Deployed a multi-layered, **role-based authorization system** to enforce granular permissions across workspaces, projects, and tasks.
- **Tech Stack:** React, Express.js, PostgreSQL (Neon), Prisma, Clerk, Inngest, Nodemailer

CodeNest : AI-Powered In-Browser Web IDE

- Developed a full-featured, **browser-based IDE** with real-time code execution using **WebContainers**, featuring a sandboxed terminal, custom file explorer with CRUD operations, and enhanced **Monaco Editor** with dual-theme interface.
- Integrated local AI capabilities for intelligent code completion and context-aware assistance, with secure OAuth authentication (Google/GitHub) and support for **6** popular frameworks through pre-configured templates.
- **Tech Stack:** Next.js 15, WebContainers, NextAuth.js, MongoDB, Monaco Editor

Organ Donation System

- Developed a dynamic **donor-recipient matching system** that processes a recipient's medical data to find compatible organ donors. The backend queries a database to filter potential donors based on critical compatibility factors for various organs.
- Built a resilient backend service using Express.js to handle data submissions through API endpoint. The system dynamically constructs and executes SQL queries against a **MySQL** database to ensure accurate and efficient matching results.
- **Tech Stack:** Node.js, Express.js, MySQL, HTML, CSS

EXTRA-CURRICULAR ACTIVITIES

Sports Society – VIT Bhopal

- Competed in intra-college football tournaments, demonstrating teamwork and discipline.