Himansh Bansal

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EDUCATION

Bachelor's in Technology, Computer Science and Engineering   **Expected May 2026**
Vellore Institute of Technology (VIT), Bhopal University, Madhya Pradesh   CGPA: 8.12/10

SKILLS & LANGUAGES

Programming: C++, Javascript, Typescript
Backend Framework & Tools: Node.js, Express.js, Fastify, Redis, BullMQ, Socket.io, Postman, Git, Sequelize
Database: MySQL, PostgreSQL, MongoDB

PROJECTS

SonoCode Coding Platform | Event-Driven Microservices Backend   **Aug 2025**
- Fault-Tolerant Microservice Orchestration: Designed a decoupled 4-service Saga orchestrator to isolate failures, ensuring high availability by accepting submissions even when workers are offline.
- Secure Sandboxed Execution via Dynamic Containerization: Engineered an evaluation engine creating ephemeral, resource-constrained Docker containers per job, isolating untrusted code and mitigating attacks.
- Deployed a dedicated WebSocket service for instant result delivery, using a distributed Redis cache for user-to-socket mappings for stateful connection handling across scaled instances.
- High-Performance Ingress & Hybrid Communication: Built a high-throughput API ingress with Fastify, using synchronous REST for immediate data needs and asynchronous queuing (BullMQ) to offload resource-intensive evaluation tasks.

Airline Booking System | Transactional Booking Microservices   **June 2025**
- Microservice Architecture & API Gateway: Designed 3 core microservices (Flights Admin, Booking, Notification) behind an API gateway supporting JWT auth, load balancing and API versioning for scalability.
- Database Design & Migrations Structured complex MySQL schemas with 10+ tables and models, strong foreign key relationships and cascading, optimized indexing, migrations via Sequelize CLI, and ACID-compliant transactional flows; ensured data integrity, high availability, and scalability for production-level load.
- Service Connectivity & Business Logic Implemented reliable service-to-service communication and transactional logic for searching flights, managing bookings, and payment gateway.

WorkStrat | Team-Project-Management Backend   **Mar 2025**
- Designed scalable REST backend: Built 15+ modular endpoints with Node.js, Express.js, and MongoDB, enabling seamless CRUD operations for workspaces, projects, and tasks.
- Enabled efficient team collaboration: Developed task assignment, progress tracking, and role-based access features to support streamlined multi-user workflows.

NidhiPath | AI-powered Fintech Backend   **Nov 2024**
- REST API Development Designed and deployed secure, scalable APIs for loan processing, financial data workflows, and AI service orchestration using Node.js and Express.js.
- RAG & NLP Backend Logic: Developed backend pipelines combining document retrieval, embedding generation, Gemini-based inference, and custom NLTK-based text preprocessing via a dedicated NLP API.
- Database & Performance Optimization Structured normalized PostgreSQL schemas and optimized API latency through query tuning and smart caching strategies.

EXTRA-CURRICULAR ACTIVITIES

IEEE VITB Student Branch | Vice Chairperson   **Sep 2023 – Mar 2025**
- Led 50+ active members, ran 10+ major tech events, engaged 500+ students university-wide.
- Drove impactful mentorship, strategic partnerships, and hands-on learning programs.

EY Techathon 5.0 | Semi-finalist (Top 1%)   **Feb 2025**
- Developed an AI-powered financial application with intelligent automation features for user experience.

Smart India Hackathon | Top 10 of 200+ teams (VIT Bhopal)   **Oct 2024**
- Created a computer vision-based anomaly detection system improving women's safety in public spaces.