# Bhaskar Vikas Bajaj

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**Portfolio:** bhaskar-portfolio-smoky.vercel.app
**LeetCode:** leetcode.com/u/bhaskar_bajaj04

## Education

**Vivekananda Institute of Professional Studies - Technical Campus (GGSIPU)** — New Delhi, India
*Bachelor of Technology in Artificial Intelligence and Machine Learning (CGPA: 9.05)* — June 2027

**DAV Public School, Sreshtha Vihar** — New Delhi, India
*Class XII (CBSE) – 94.6% | Class X (CBSE) – 94.6%* — 2021 | 2019

## Experience

**Steel Authority of India Limited (SAIL)** — New Delhi, India
*Technical Intern* — June 2026 – July 2026

- Built an event-driven real-time activity log using Node.js EventEmitter and Server-Sent Events (SSE) to stream audit events live to the admin dashboard, alongside a background worker that polls every 3 seconds to auto-expire offers and promote waitlisted candidates.
- Built a CSV-based bulk candidate upload flow and a DigiLocker verification sandbox using a hash-based Set for O(1) document-ID lookups.
- Built an admin-controlled time-compression simulator that shrinks the 7-day offer-expiry window to 30 seconds, enabling live testing of the offer → expiry → waitlist auto-promotion lifecycle without waiting days.

**CodeSquadz (AppSquadz)** — Noida, UP
*AWS & DevOps Summer Trainee* — June 2025 – July 2025

- Containerized a static web application using Docker with an Nginx (Alpine) base image, writing a custom Dockerfile to serve the site on port 80.
- Deployed the containerized application on AWS (EC2) as a capstone project, applying core cloud concepts learned during the training.
- Completed a 1-month internship covering AWS core services (EC2, S3, RDS, IAM, VPC), Linux command-line fundamentals, and introductory Terraform concepts.

## Projects

**Narratia – AI-Powered Content Creation Studio** | *React, PostgreSQL, Node.js, Express, REST APIs* [Link]

- Built a full-stack AI content platform with a React (Vite) frontend and a Node.js/Express backend, unifying AI-driven image generation, article writing, and resume review into a single interface.
- Designed a modular REST API layer on Express to route requests across distinct AI-assisted workflows – image generation and editing, long-form article drafting, and resume analysis – from a shared backend service.
- Structured the codebase into decoupled client (React/Vite) and server (Express) modules with separate routes, controllers, and middleware layers, enabling independent frontend/backend development and clean separation of concerns.

**PayMesh** | *Java, Spring Boot, Cryptography, REST APIs* [Link]

- Architected a Spring Boot backend to process offline peer-to-peer UPI-style payments, ingesting encrypted transaction packets routed through a simulated Bluetooth mesh via internet-connected bridge nodes.
- Secured in-transit JSON payloads against untrusted relay nodes with a hybrid encryption pipeline (RSA-OAEP key wrapping + AES-256-GCM), so intermediaries only see ciphertext and any tampering is detected via the GCM authentication tag.
- Engineered an atomic idempotency layer (putIfAbsent claim on a SHA-256 ciphertext hash, per-payment UUID nonce, DB unique-constraint fallback) so a packet delivered by multiple bridges settles exactly once, verified with a 3-thread concurrent test, and replays are rejected within the freshness window

**Vistara AI – Realtime Multimodal AI Application** | *Next.js, Google Gemini Multimodal Live API, WebSockets, Tailwind CSS* [Link]

- Developed a low-latency, bidirectional multimodal web app on Next.js, streaming 16 kHz mic audio, 1 fps video frames, and text to the Gemini Live API over a persistent WebSocket, authenticated with server-minted single-use ephemeral tokens.
- Implemented live captions for both user and model by enabling the Live API's native input/output transcription and merging streamed fragments into per-turn chat bubbles, with no separate transcription request.
- Designed a responsive, modular frontend with AudioWorklet mic capture, gapless clock-scheduled audio playback, and requestAnimationFrame-driven level meters that avoid per-frame React re-renders, covered by a Vitest unit/integration suite

## Technical Skills

**Languages:** Java, JavaScript, TypeScript, Python
**Frameworks:** Spring Boot, Spring Security, Hibernate ORM, Apache Kafka, Maven, Gradle, React.js, Next.js, Node.js, Express.js, Redux
**Databases:** PostgreSQL, MySQL, Supabase, MongoDB, Prisma, Redis
**Cloud & DevOps:** AWS, Docker, Linux (Bash), Git
**Generative AI & Tooling:** Ollama, Spring AI, Prompt Engineering, Zod, Clerk, Postman

## Certifications & Programs

- **Oracle Certified Professional:** Oracle Cloud Infrastructure 2025 Generative AI Professional [Certificate]
- **Oracle Certified Foundations Associate:** Oracle Cloud Infrastructure 2025 AI Foundations Associate [Certificate]
- **McKinsey Forward Program:** Structured problem-solving, communication, adaptability [Certificate]
- **Datacom (Forage) Software Development Simulation:** Software review & bug fixing [Certificate]

## Areas of Interest

Data Structures & Algorithms (200+ Problems Solved on Leetcode), Software Engineering, Object-Oriented Programming, Database Management System, Operating Systems, Computer Networks, Artificial Intelligence, Agentic AI