

Abhyuday Mishra

New Delhi, Delhi, India | +91 8826977631 | abhyu.mishra04@gmail.com
linkedin.com/in/abhyuday-mishra12 | github.com/12Mishra | abhyudaymishra.in

EDUCATION

Thapar Institute of Engineering & Technology

Bachelor of Technology in Electronics and Computer Engineering; Current CGPA: 8.78

Patiala, Punjab

August 2023 – June 2027

Relevant Coursework: Data Structures & Algorithms, Database Management Systems, Operating Systems, Computer Networks, Object-Oriented Programming

EXPERIENCE

Project Intern

June 2026 – July 2026

ISRO-DOS, Regional Remote Sensing Centre North

- Developing an interactive 3D river-level and flood-inundation visualization for the Alaknanda River near Rudraprayag using Godot Engine 4.7, GDScript, CesiumJS, and CartoDEM elevation data.
- Built Python and QGIS-based geospatial processing pipelines using GeoPandas, Rasterio, Shapely, NumPy, and PyProj to preprocess terrain, carve the river channel, generate cross-sections, and integrate roads, buildings, bridges, and river layers.
- Designing a continuous, stage-driven river-to-flood system using historical CWC water-level records and Google Earth Engine flood observations, with precomputed terrain-constrained inundation logic optimized for smooth browser deployment.

Full Stack Developer Intern

September 2025 – March 2026

Macaron Ventures

- Shipped organizer-facing event creation, multi-phase ticketing, and brand-management workflows in Next.js, TypeScript, and PostgreSQL, expanding production coverage of core event operations.
- Integrated REST APIs for event, ticketing, and profile services, enabling reliable end-to-end data exchange across frontend components and backend workflows.
- Stabilized production workflows by resolving 10+ bugs during on-boarding, improving UI consistency and user-facing reliability across the platform.

PROJECTS

Cortex | Next.js, PostgreSQL, pgvector, Redis, BullMQ, OpenAI API | [GitHub](#)

April 2026

- Built a RAG-based document intelligence system that processed and indexed **10+ PDF documents** for semantic retrieval and context-grounded question answering.
- Orchestrated asynchronous document ingestion using BullMQ and Redis for text extraction, chunking, embedding generation, and pgvector-based persistence in PostgreSQL.
- Implemented persistent document-based conversations across **10+ sessions** and **40+ stored messages**, preserving message history and retrieval context between queries.

Node-Scale Engine | Node.js, Cluster Module, Next.js, Recharts, SSE | [GitHub](#)

March 2026

- Engineered a load-aware Node.js auto-scaling simulator that dynamically adjusted worker processes from a minimum of **2 workers** to a CPU-core-bound maximum based on real-time request traffic.
- Implemented a master-worker control loop using Node.js Cluster and IPC, evaluating system load every **2 seconds** and enforcing a **5-second cooldown** to prevent rapid scale-up and scale-down cycles.
- Built a Next.js and Recharts observability dashboard that streamed metrics every **1 second**, displayed a rolling **60-second** load chart, and supported tests with **1–200 concurrent requests** over **5–60 seconds**.

TECHNICAL SKILLS

Languages: C++, JavaScript, TypeScript, Python, SQL, HTML, CSS

Frontend: React.js, Next.js, Tailwind CSS, Recharts, Socket.io, Responsive UI Development

Backend: Node.js, Express.js, REST APIs, Prisma, BullMQ, Server-Sent Events, API Design

Databases: PostgreSQL, MongoDB, Redis, PostgreSQL Vector Search, Database Schema Design, Query Optimization

AI/ML: OpenAI API, RAG Pipelines, Vector Embeddings, Semantic Search, LLM-based Q&A, Document Processing

DevOps & Tools: Git, Docker, AWS, GitHub Actions, Firebase, Postman, Strapi, CI/CD, VS Code

ACHIEVEMENTS

- Solved 177+ DSA problems on LeetCode with a contest rating of 1480 and participated in 10 rated CodeChef contests.
- Cleared The Big Code 2026 Qualifier Round and advanced to Round 1 among the top 15,000 participants.
- Selected among 150+ participants for the Smart India Hackathon 2024 Internal Round for a medicine quality-monitoring solution.