

Ketan Bajpai

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EDUCATION

Indian Institute of Information Technology, Nagpur

Nagpur

Bachelor of Technology in Electronics and Communication Engineering,

Nov. 2022 – June 2026

Specialization in Internet of Things CGPA: 8.14/10

EXPERIENCE

SDE Intern (Backend) | Jan 2026 – Present | Tripfactory.com, Noida

- Actively debugging and analyzing the existing backend codebase for the **Hotel Modality** to understand business logic and system workflows.
- Working with a legacy backend built using **Java Servlets**, gaining hands-on exposure to servlet-based architecture, request-response lifecycle, and controller-service design patterns.
- Identifying issues in existing APIs, tracing logs, and fixing minor bugs to improve stability and maintainability of production services.

SDE / GenAI Intern | May 2025 – Nov 2025 | iKITES TECHNOLOGIES PRIVATE LIMITED

- Led development of a full-stack clinical analytics platform for ophthalmologists including the **Stanford Dashboard**, enabling longitudinal data visualization, patient trend analysis, and medical record consolidation.
- Built system architecture using **React (Vite)**, **Flask**, **MongoDB**, **Docker**, and deployed internal environments on **AWS** with role-based authentication.
- Developed modular RAG pipelines utilizing hybrid retrieval (keyword + semantic), **Reciprocal Rank Fusion (RRF)**, multi-strategy chunking, query expansion, and graph-based reranking for domain-aware AI assistants.
- [Letter of Recommendation](#)

PROJECTS

Career Guidance Chatbot (RAG-based) | Next.js, Clerk, Qdrant, Gemini, Node.js [\[GitHub\]](#)

- Built a full-stack AI-powered chatbot using Retrieval-Augmented Generation (RAG), integrating Qdrant vector database for semantic search with hybrid retrieval (keyword + vector) and reranking techniques.
- Developed dynamic chat interface with Google Auth (Clerk), allowing persistent chat history, GPT-style new chat creation, and secure user session handling.

Inventory Management System | Flask, MongoDB, React.js, Docker | [\[GitHub\]](#)

- Built a full-stack inventory system with Flask backend, MongoDB, and React frontend.
- Implemented JWT-based authentication, unique SKU enforcement, and paginated APIs.
- Containerized backend with Docker for easy deployment and environment management.

Real-Time Chat Application | Node.js, Express.js, Socket.IO, JSON Web Token, MongoDB, React.js | [\[GitHub\]](#)

- Developed a real-time chat application featuring online/offline status updates using Socket.IO.
- Integrated JSON Web Token-based authentication with MongoDB for secure user management.
- Designed the React frontend and managed state with Zustand.

TECHNICAL SKILLS

Programming Languages: C++, Python, Java, SQL.

Frameworks & Technologies: React.js, Next.js, Node.js, Flask, Express.js, RestAPI

Developer Tools: Docker, GitHub, Postman, Visual Studio Code, Cisco Packet Tracer, Unix/Linux.

Databases & ORM: MongoDB, PostgreSQL, MySQL, Prisma, Sequelize.

Coursework: Data Structures and Algorithms, Database Management Systems (DBMS), Object-Oriented Programming (OOP), Machine Learning, Communication Networks, IOT Security, Distributed Systems.

ACHIEVEMENTS

LeetCode: Solved 400+ coding problems, significantly enhancing algorithmic and data structure skills.

CodeChef: Achieved a 3-star rating (Peak Rating: 1631).

IIT Roorkee E-Summit 2024: Finalist in the Business Case Study Competition, demonstrating strong analytical and presentation skills.