

# UJJWAL RAI

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## EDUCATION

**Indian Institute of Information Technology, Nagpur**

**2022 – 2026**

*B.Tech - Computer Science and Engineering - CGPA - 8.71*

*Nagpur, Maharashtra*

## COURSEWORK / SKILLS

- DSA
- OOPS Concepts
- Data Analytics
- Data Privacy
- Operating Systems
- Computer Networks
- Machine Learning
- DBMS

## TECHNICAL SKILLS

**Languages:** Python, Java, C, C++, JavaScript, SQL

**Frameworks:** ReactJS, NodeJS, ExpressJS, Flask

**Tools & Technologies:** AWS, Docker, Git, GitHub, PostgreSQL, Hadoop, Spark, Linux, Streamlit, PyTorch, HuggingFace

## EXPERIENCE

**Amazon Machine Learning Summer School**

**Summer 2025**

*Trainee*

*Remote*

- **Selected** for Amazon Machine Learning Summer School; completed an intensive program covering ML fundamentals, production workflows, and best practices for building scalable models.
- Understood **real-world challenges** in scaling ML systems such as bias, interpretability, and optimization.

## PROJECTS

**AI Travel Planner** | [React.js](#), [Node.js](#), [Express.js](#), [MongoDB](#), [REST APIs](#)

**Jan 2025 - Feb 2025**

- Engineered a MERN stack travel platform integrating Google's Gemini AI for automated itinerary generation with real-time destination insights.
- Implemented an optimized caching system reducing API response time (from 5s to 500ms) using parallel processing for concurrent AI requests.
- Built a comprehensive validation system with third-party integrations (Google Maps, JWT Auth, NodeMailer), reducing data processing errors.

**Product Recommendation System** | [Python](#), [Transformers](#), [PyTorch](#)

**July 2025 - Aug 2025**

- Built end-to-end RAG-based recommendation engine processing 2000+ products using SentenceTransformers and FAISS indexing for semantic similarity search
- Integrated Google Gemini API for conversational search with natural language query parsing and intent extraction.

**AI-Powered-Image-QA** | [Python](#), [FastAPI](#), [PyTorch](#), [Transformers](#)

**August 2025 - Sept 2025**

- Built a multimodal Visual Question Answering (VQA) platform integrating BLIP-2, FastAPI, and MongoDB, enabling users to query images with natural language and receive real-time AI-powered answers.
- Engineered full-stack architecture with React.js + TailwindCSS frontend, Node.js/Express backend, and a ML service (PyTorch, HuggingFace) and scalable deployment via Docker Compose.

## ACHIEVEMENTS

- Secured **143rd rank** in the ICPC Asia West Regionals 2024, solving 5 programming problems.
- Participated in Meta Hacker Cup 2024 Round 1 and achieved **Global Ranking of 1899**, demonstrating advanced algorithm skills.
- Achieved **Expert title on Codeforces** with peak rating of 1640 (top 5% of global competitive programmers).
- Led team to optimize ML model for Amazon ML Challenge 2024, achieving F1 score of 0.406 (ranked 269th nationwide).