

UJJWAL RAI

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EDUCATION

Indian Institute of Information Technology, Nagpur
B.Tech - Computer Science and Engineering - CGPA - 8.71

2022 – 2026

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 | Demo | 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 | Demo | 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

Augusr 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 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).