

Utkarsh Raj

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Education

Rajiv Gandhi Institute of Petroleum Technology

2022 – 2027

Integrated Dual Degree in Computer Science and Artificial Intelligence

Jais, Amethi

B.Tech (CSE) + M.Tech (AI) CGPA: 8.22* / 10

College of Commerce, Arts & Science

2021

Intermediate (BSEB) Percentage: 79.8%

Patna, Bihar

Experience

AI Developer

June 2025 – Present

Prodigal AI (Certificate)

Remote

- Designed a commodity trading platform with real-time market data and user portfolio management
- Built a chatbot using Gemini API to handle trade FAQs and guide users, reducing support wait times by 35%
- Set up a serverless backend with AWS Lambda and REST APIs, supporting 100+ trades/day with auto-scaling

Fullstack Developer

April 2024 – May 2024

OldSkoollabs (Certificate)

Remote

- Improved E-Commerce frontend performance, cutting load time by 30% and increasing engagement by 25%.
- Automated Git branching and deployment scripts on Linux, cutting dev cycle time by 15%
- Integrated an LLM-powered chatbot to automate product queries, cutting support tickets by 40%.

Projects

SupplyGuard AI - Smart Risk Management [GitHub](#) [Live](#)

June 2025

- Tech:** Python, FastAPI, React, Vite, Tailwind, Hugging Face, spaCy, Docker
- Tracked disruptions across **10,000+ suppliers** and **50+ articles/day** to detect ESG, climate, and geo risks.
- Used **spaCy NER** to extract entities with **95%+ precision**, and BART-based LLM to summarize **100+ news items**.
- Generated **risk scores (0.0–1.0)** and **30+ real-time alerts** with severity, timestamps, and action plans.
- Built a responsive dashboard with **10+ UI views** in React + Tailwind, enabling filtering by risk type and region.
- Deployed **5+ REST endpoints** via FastAPI and containerized with Docker for scalable integration.

Government Scheme QnA using RAG/CRAG [GitHub](#) [Live](#)

May 2025

- Tech :** Python, Selenium, FAISS, Hugging Face, MiniLM, Flan-T5, gemini-1.5-flash, Streamlit, LangChain
- Scraped and structured data for **3000+ Indian government schemes** from the MyScheme portal using Selenium.
- Embedded scheme documents into dense vectors with all-MiniLM-L6-v2 for semantic search using FAISS.
- Assembled a RAG system using FAISS and Flan-T5-small for real-time, context-aware QA
- Released a user-friendly Streamlit frontend with secure Hugging Face API access.

AI Voice Cloning Model [GitHub](#)

April 2025

- Tech :** Python, Qwen2.5, Triton Inference Server, SparkTTS
- Engineered a TTS pipeline with Qwen2.5 to generate **natural-sounding voice synthesis** without external models.
- Deployed on Triton Inference Server, reducing latency by **40%** and tripling throughput scalability.
- Utilized SparkTTS for **high-fidelity multilingual speech synthesis** with support for diverse regional accents.
- Built both CLI and web UI interfaces for **accessible and intuitive voice cloning usage**.

Technical Skills

Languages: C, C++, Python, MATLAB, MySQL, HTML5, CSS3, JavaScript

Frameworks: Langchain, TensorFlow, PyTorch, OpenCV, Scikit-learn, FLASK, ReactJS, NextJS, ExpressJS, NodeJS

Developer Tools: Linux, Git, Windows, Docker

Libraries: NumPy, Pandas, Tailwind, OpenCV

Web Skills: HTML, CSS, JavaScript, MongoDB

Data Science: CNN, NLP, LLM, AI Agents

Key Courses Taken

Data Structures, Algorithms, DBMS, Machine Learning, Artificial Intelligence, Web Services, Operating Systems

Achievements

CodeKurrent Hackathon Winner – Won IEEE RGIPT & Prodigal AI hackathon for zero-shot voice cloning. [link](#)

SAS Global Hackathon Finalist – Ranked among the top 100 teams globally. [certificate](#)

HackaGeek 2024 Winner – Won the hackathon for developing an AI-powered solution. [certificate](#)

Solved 200+ LeetCode problems [profile](#)

UG Teaching Assistant – Assisted in teaching *Fundamentals of Electronics and Modern Physics*.

Merit-cum-Means Scholar – Awarded for being in top 10% of IDD Batch 2022–2027 at RGIPT.

IIT-JEE Advanced Qualified – Secured a position in top 10% among 2.5 lakh candidates in 2022.

Positions of Responsibility

Training and Placement Coordinator, RGIPT – Facilitated coordination between placement cell and 50+ students, organizing internships and drives.