

Yuvraj Singh

Second Year, Integrated Dual Degree (B.Tech + M.Tech) in CSE & AI

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EDUCATION

Rajiv Gandhi Institute of Petroleum Technology

2024 – 2029

Integrated Dual Degree (B.Tech + M.Tech) in Computer Science and Artificial Intelligence

EXPERIENCE

Undergraduate Researcher | Rajiv Gandhi Institute of Petroleum Technology Jan 2026 – Present

Supervisor: Dr.Vivek Singh Baghel

- **Wheat Disease Detection:** Developed CNN-based image classification models.
- **Pipeline:** Performed data preprocessing, model training, and evaluation on real-world datasets.

Technologies: Python, Machine learning, Deep Learning

PERSONAL PROJECTS

AI-Powered Aadhaar Risk Intelligence System

Jan 2026

AI-driven system for early detection of anomalous biometric and demographic update patterns

- Analyzed **100K+ Aadhaar update records** using **Isolation Forest**, detecting abnormal biometric-to-demographic update ratios without labeled fraud data.
- Modeled **temporal update trends across 500+ pincodes** using **LSTM**, separating short-term spikes from sustained anomalous behavior.
- Aggregated risk signals at **state, district, and pincode levels**, identifying geographic clusters with up to **2.3× higher anomaly density**.
- Designed a **composite risk scoring framework** and built a **Streamlit-based dashboard**, reducing manual monitoring effort by **40%**.

Technologies: Python, Pandas, NumPy, Scikit-learn, TensorFlow, LSTM, Isolation Forest, Streamlit

Alumni Association Platform

Nov 2025

Full-Stack Web Application for Alumni Networking and Engagement

- Developed a full-stack alumni platform with modules for networking, jobs, events, and donations, implementing 10+ REST APIs for scalable data management.
- Built responsive UI using React.js and Tailwind CSS, and optimized backend performance with Node.js and Express.js (300–400 ms response time).

Technologies: React.js, Node.js, Express.js, PostgreSQL, Prisma, Tailwind CSS

Vajra Kavach – Decentralized Weather Insurance

Jul 2025

Blockchain-Based Application for Weather-Based Crop Insurance

- Developed a decentralized insurance system using the **Ethereum blockchain**.
- Wrote and deployed **smart contracts in Solidity** to automate policy execution and payouts.
- Integrated **MetaMask** for secure wallet connection and policy enrollment.
- Tested smart contracts on the **Sepolia Testnet**, with transaction confirmation typically within **10–15 seconds**.

Technologies: Ethereum, Solidity, MetaMask, Sepolia Testnet

TECHNICAL SKILLS AND INTERESTS

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

Python Libraries: NumPy, Pandas, Matplotlib, Scikit-learn, Pytorch

Databases: MySQL

Developer Tools: Git, GitHub, Jupyter Notebook

ML Concepts: Supervised & Unsupervised Learning, Regression, Classification, Linear Algebra, Probability & Statistics

Soft Skills: Problem Solving, Teamwork, Communication

Areas of Interest: Machine Learning, Data Science, Deep Learning Blockchain

RELEVANT COURSEWORK

- Data Structures and Algorithms
 - Database Management Systems
 - Machine Learning
- Artificial Intelligence
 - Probability and Statistics
 - Linear Algebra

POSITIONS OF RESPONSIBILITY

- **Career Development Cell Coordinator**, RGIPT 2024 – Present
Coordinated placement and internship-related activities and assisted in communication between students and recruiters.
 - **IEEE Editorial Head**, RGIPT 2024 – Present
Managed editorial content and contributed to technical publications and student-led initiatives.

ACHIEVEMENTS

- **Hackathon Winner**, CodeGenX DITU 2025
 - **Semifinalist**, Energy-O-Thon (Indo-Russia Climate & Energy Hackathon), GoBRICS, BRICS Forum Ongoing