ABHIGYAN RANJAN

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SUMMARY

Dedicated Data Science student pursuing a B.Tech in Artificial Intelligence & Data Science (9.26 SGPA) at GGSIPU with hands-on experience in data analysis, machine learning, and web development. **Part of the top 12 teams in ISRO's BAH'24 competition across India** and winner in our problem statement category. **IBM-certified Data Science Professional**. Strong skills in building predictive models, deep learning models and delivering insights through real-world projects. Proven team player, eager to apply my skills and contribute to innovative data science projects.

EDUCATION

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY, New Delhi, India   Expected Graduation 2026

- B.tech in Artificial Intelligence & Data Science; 9.26 SGPA (till 3rd SEMESTER)

 ST. XAVIER'S SR. SEC. SCHOOL, New Delhi, India

- Intermediate (2022), CBSE Board: 89%
- High School (2020), CBSE Board: 88%

TECHNICAL SKILLS

Primary Skills

- **Web Development:** HTML, CSS, Bootstrap, JavaScript, MySQL
- **Programming:** Python
- **Data Science:** Data Analysis, Feature Engineering, Data Visualization, Machine Learning, Deep Learning
- **Data Structures & Algorithms**
- **Tools:** Git, GitHub

Secondary Skills

- **Familiar:** React.js, Node.js, C, C++, QGIS

PROJECTS

Rooftop Solar Energy Potential Map (*Link*)

 Skills used: Python, Deep Learning, Machine Learning, Python Libraries

- Extracted and handled data using QGIS and developed a ResNet50-U-Net and YOLOv8-seg models to extract building footprints from satellite images with **95.21% accuracy**.
- Designed the full prediction pipeline, improving **IoU from 0.85 to 0.92** using post-processing.
- Calculated rooftop areas for solar energy estimation, enabling strategic solar panel placement.

KisanSeva: Revolutionizing Farming with AI & IoT (*Link*)

 Skills used: React Native, Firebase, Python, Machine Learning, Python Libraries

- Implemented IoT sensor integration for real-time soil moisture and temperature monitoring, optimizing irrigation scheduling through machine learning predictions.
- Built and deployed a Random Forest multivariate model for NPK (nitrogen, phosphorus, potassium) fertilizer prediction, achieving an R² score of 0.93.

- Executed a comprehensive automation strategy for sensor data collection and alert management, leading to a 100% reduction in manual oversight and allowing for immediate adjustments to irrigation schedules, enhancing plant health.

Predicting Falcon 9 First-Stage Landing Success (*Link*)

Skills used: Python, Folium, Plotly Dash, Machine Learning, Python Libraries

- Developed and compared four models: Logistic Regression (83.33% accuracy), K-Nearest Neighbors (77.78% accuracy), Support Vector Machine (83.33% accuracy), and Decision Tree (77.78% accuracy).
- Processed SpaceX launch data via API and web scraping; visualized results with interactive Folium maps and Plotly Dash dashboards.
- Achieved the best performance with Logistic Regression, delivering accurate predictions for landing success.

ACHIEVEMENTS AND CERTIFICATIONS

ISRO Bhartiya Antariksh Hackathon – 2024 | View LinkedIn Post with photos of the certificate and award
- Secured Top 12 nationwide among 3,500+ teams and 34,000 students.
- Won the "Generation of Rooftop Solar Energy Potential Map" category using machine learning and deep learning for Building footprint extraction.

IBM Data Science Professional Certificate | *CERTIFICATE*
- Demonstrated expertise in data analysis, data visualization, feature engineering, dashboard creation using Plotly Dash and various machine learning algorithms with Python.
- Proficient in advanced data manipulation and predictive modelling using libraries like Pandas, NumPy, and Scikit-learn.
- Learned Visualization libraries like seaborn, matplotlib and folium

Smart India Hackathon Internal Round – 2024
- Achieved first place in the problem statement category during the internal college round of SIH-2024
- Nominated to represent the college in the national-level rounds of the competition.

Honors in Databases and SQL for Data Science with Python (IBM) | *CERTIFICATE*
- Analyzed data within a database using SQL and Python, including creating relational databases and working with multiple tables using DDL commands.
- Constructed complex queries using advanced SQL techniques such as views, transactions, stored procedures, and joins.