CAPSTONE PROJECT

IMPROVED SOURCE OF DRINKING WATER

Presented By:
1. Shreya Dubey
2. United College of Engineering And Research Allahabad-CSE

edunet foundation

OUTLINE

- Problem Statement
- Proposed System/Solution
- System Development Approach
- Algorithm & Deployment
- Result (Output Image)
- Conclusion
- Future Scope
- References

PROBLEM STATEMENT

- Improved Source Of Drinking Water
- Access to safe and improved sources of drinking water remains a critical issue in India, especially in rural and underdeveloped regions.
- A persistent disparity in water accessibility exists across different states and socio-economic groups, despite ongoing efforts under the Sustainable Development Goals (SDGs).
- The project aims to analyze data from the 78th Round of the National Statistical Survey (NSS) to assess the percentage of the population with access to improved drinking water sources and the relationship between access and socio-economic factors.
- By identifying patterns and disparities, the study will generate actionable insights to support evidence-based policymaking

PROPOSED SOLUTION

- Objective: To analyze data from the 78th Round of the National Statistical Survey (NSS) to understand the landscape of drinking water access in India.
- Components:
- Data Collection: Utilize the provided Al Kosh dataset from the NSS 78th round. The dataset contains information on drinking water sources and socio-economic indicators.
- Data Preprocessing: Clean the dataset by handling missing values, standardizing data, and preparing it for analysis.
- Exploratory Data Analysis (EDA): Conduct a thorough analysis to identify key trends and patterns. This will involve statistical summaries and visualizations.
- Insight Generation: Based on the EDA, identify states, regions, and socio-economic groups with significant disparities in access to improved drinking water.
- Reporting: Present findings and policy recommendations to help ensure equitable access to clean water.

SYSTEM APPROACH

System Approach:

The project follows a data analytics pipeline. The approach involves:

Problem Identification: Understanding the social problem of unequal water access.

Data Sourcing: Using the specified AI Kosh dataset.

Data Analysis: Using programming and statistical tools for analysis.

Insight Communication: Presenting findings through a report and visualizations.

Technology & Libraries:

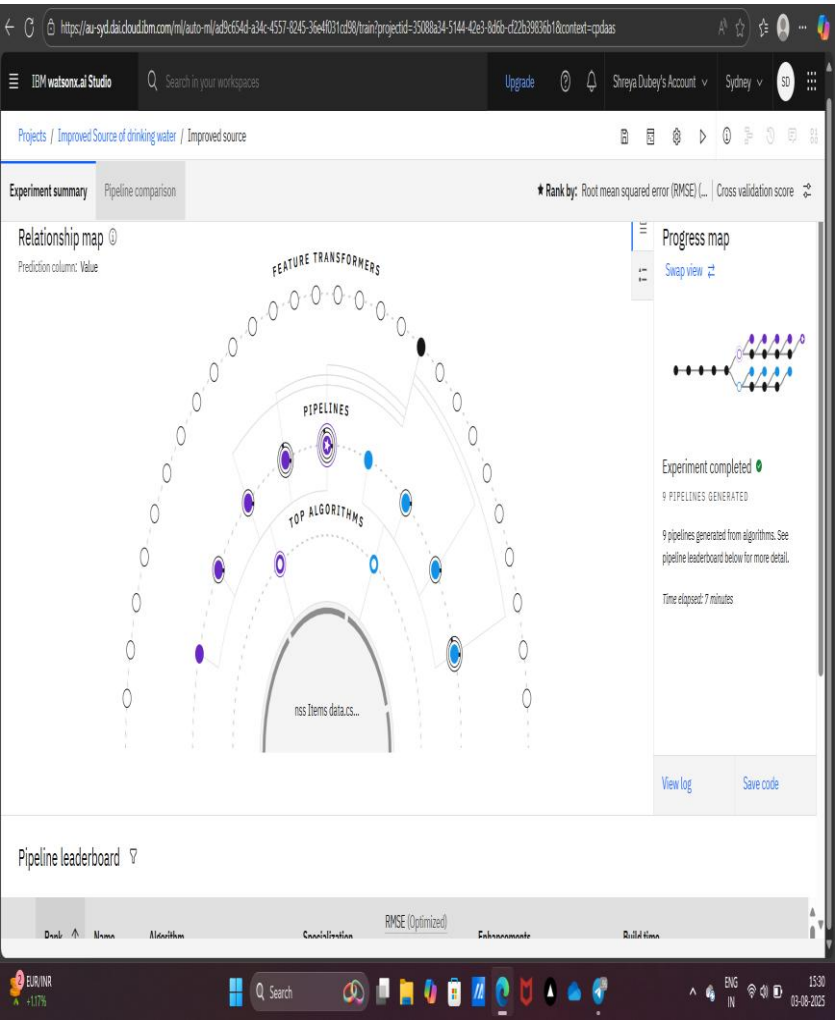
IBM Cloud Lite Services

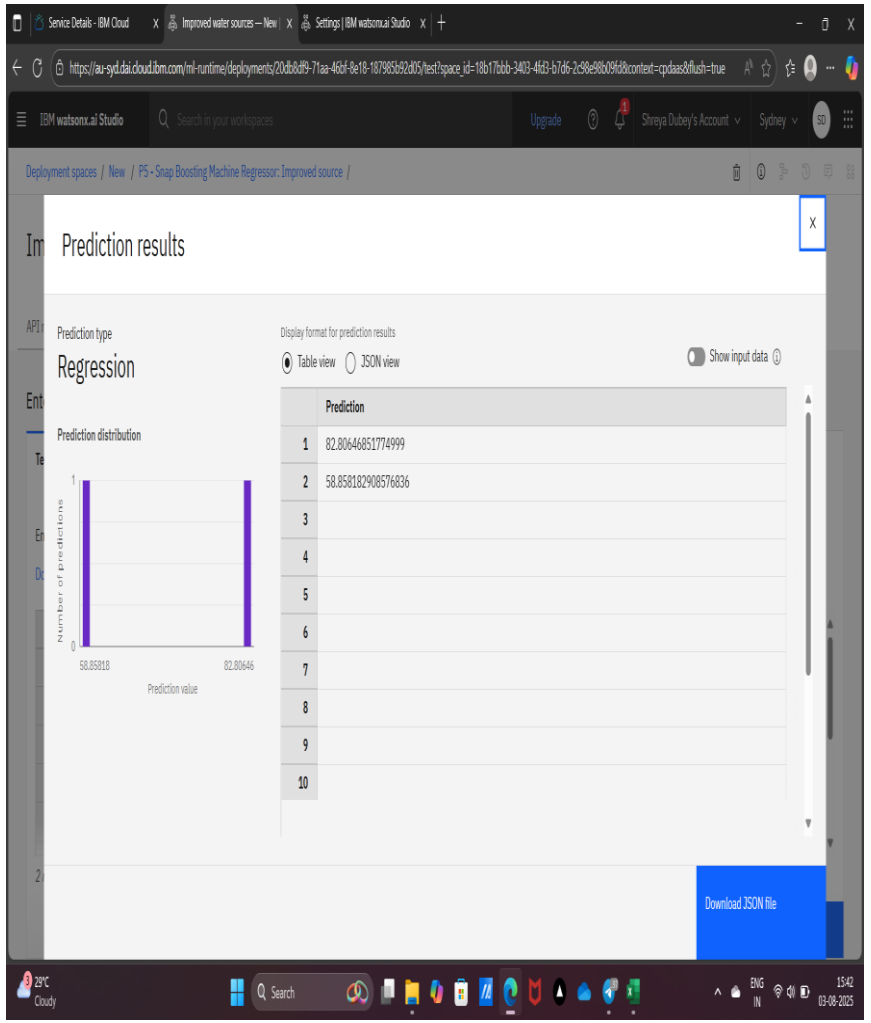
Environment: IBM Watson.ai Studio

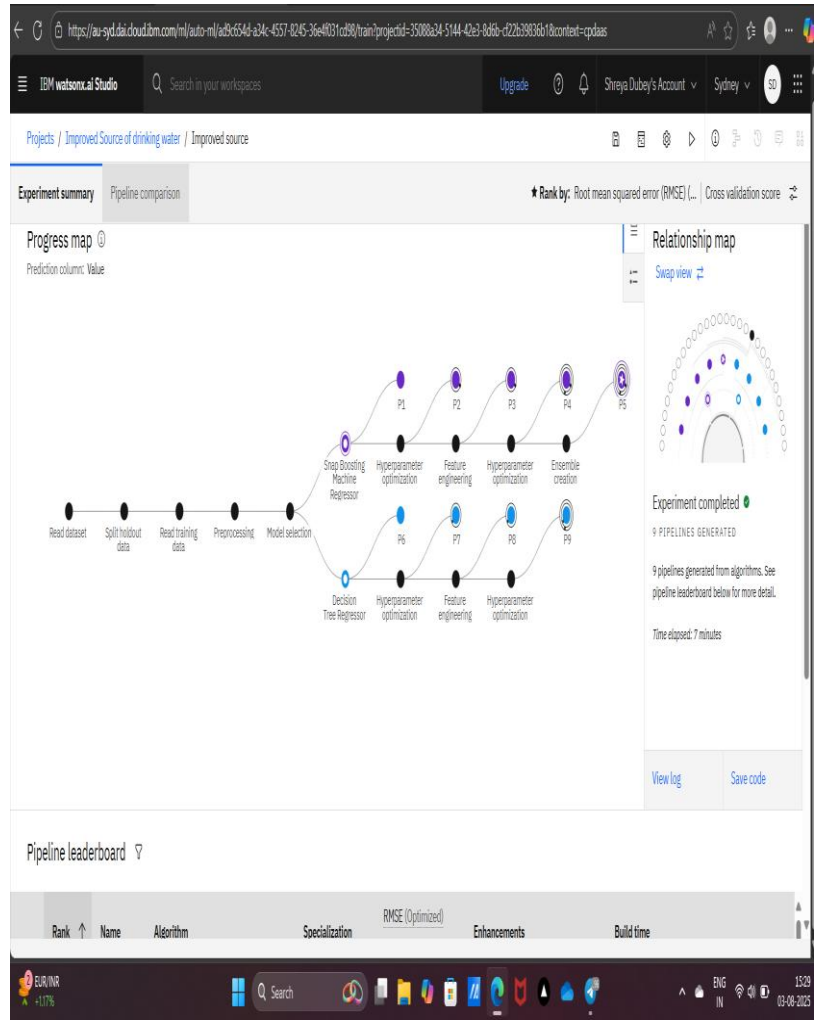
ALGORITHM & DEPLOYMENT

- **Algorithm Selection:**
- This project primarily focuses on data analysis and visualization rather than a complex machine learning algorithm. The core "algorithm" is a series of data processing and statistical analysis steps, including:
- Calculating descriptive statistics (e.g., percentages, mean).
- Performing group-by operations to compare different categories (e.g., state, social group).
- Creating various plots (bar charts, pie charts) to visualize the findings.
- **Deployment:**
- The final analysis and visualizations will be presented in this PowerPoint and potentially a detailed report.
- The entire project environment and code will be hosted on IBM Cloud Lite Services,fulfilling the requirements.

RESULT







edunet foundation

CONCLUSION

- The analysis of the NSS 78th Round data reveals significant disparities in access to improved drinking water sources across India.
- Key factors such as geography (states and rural vs. urban areas) and socio-economic status (social groups) are strongly correlated with the level of access.
- The project successfully identified the most vulnerable regions and populations, providing a clear data-driven foundation for targeted policy interventions.
- These findings are crucial for achieving the Sustainable Development Goal of ensuring equitable access to clean water.

FUTURE SCOPE

- Incorporate more recent data from subsequent surveys to analyze trends and monitor the impact of existing policies over time.
- Integrate additional datasets (e.g., on water quality or health outcomes) to build a more comprehensive model.
- Build a predictive model to forecast future water infrastructure needs based on population growth and other variables.
- Develop an interactive dashboard using IBM Cloud services to allow policymakers to explore the data dynamically.

REFERENCES

- Al Kosh Dataset:
- National Statistical Survey (NSS) 78th Round Documentation.
- IBM Cloud Documentation.

IBM CERTIFICATIONS

In recognition of the commitment to achieve professional excellence

Shreya Dubey

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence

Issued on: Jul 21, 2025
Issued by: IBM SkillsBuild

Verify: https://www.credly.com/badges/0e842df2-f912-4346-80c5-8093d052c2a8

IBM

IBM CERTIFICATIONS

In recognition of the commitment to achieve professional excellence

Shreya Dubey

Has successfully satisfied the requirements for:

Journey to Cloud: Envisioning Your Solution

Issued on: Jul 21, 2025
Issued by: IBM SkillsBuild

Verify: https://www.credly.com/badges/11aed1d4-50a3-495f-97c7-884e8a5c0871

IBM

IBM CERTIFICATIONS

IBM **SkillsBuild** Completion Certificate

This certificate is presented to

Shreya Dubey

for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 24 Jul 2025 (GMT)

Learning hours: 20 mins

edunet foundation

THANK YOU

edunet foundation