

Project Objectives

Exploratory Analysis Of RainFall Data In India For Agriculture

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Project Objectives:

Accurate prediction of daily rainfall plays a crucial role in enhancing agricultural productivity and ensuring food and water security, which are essential for maintaining public health. To achieve this, numerous studies have been conducted utilizing data mining and machine learning techniques applied to environmental datasets from various countries. Irregular rainfall distribution significantly impacts agriculture, upon which the national economy heavily relies. Therefore, the judicious management and utilization of rainfall water are imperative to mitigate the adverse effects of droughts and floods.

The primary objective of this study is to identify the key atmospheric variables influencing rainfall and to predict the intensity of daily rainfall using machine learning methods. The Pearson correlation technique was employed to select relevant environmental variables, which were subsequently used as input features for the machine learning models. The dataset comprised variables such as Location, Minimum Temperature, Maximum Temperature, Rainfall, Evaporation, Sunshine, Temperature at 3 p.m., and Rain Today. To evaluate model performance, several algorithms were implemented, including Logistic Regression, Decision Tree Classifier, Random Forest Classifier, K-Nearest Neighbors (KNN), Support Vector Machine (SVM), and XGBoost.

Technical Aspeccts that we would get if we complete this projects:

1. Know about pre-processing/clean the data using different data pre-processing techniques

2. Applying different algorithms according to the dataset and based on visualization
3. .Real-Time Analysis of Project.
4. Knowledge of Machine Learning Algorithms
5. Knowledge of Python Language with Machine Learning
6. Understand about classification and regression problem
7. Building ease of user Interface (uI)
8. Knowledge of building ML Models and Build web application using the Flask framework.