

Weather predication system using machine learning

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ABSTRACT

Weather predication system is more important now a day climates varying Weather predication system using machine learning is depend on the data analysis of weather. The climatic situation parameters are based on the wind speed, humidity, temperature, Wind, rainfall and size of data set.

KEYWORDS- Classification, Weather Predication, Weather Conditions, Rainfall Prediction

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I. INTRODUCTION

The use of science & technology to forecast atmospheric conditions at certain locations and periods is known as weather prediction. Numerous people attempt to predict the weather several years Farmers can use rainfall forecasts. A model is built using machine learning, a data science approach, from a training dataset. Machine learning makes weather forecasting more convenient, accurate, real-time, and less time-consuming. Some of the most current research has. Making use of historical weather data is required for machine learning techniques to predict weather conditions. Only the data used to train the models will determine how accurate the forecasts are. As a result, it is crucial that any machine learning model be trained on extremely accurate data. The information gathered from numerous sources is not necessarily reliable. So, preprocessing of the data is required. The preprocessing of the data include eliminating useless columns that are unrelated to the model's predictions, eliminating zero values, grouping related columns, and performing many other pre-processing operations. Some of the earlier research on machine learning-based weather forecasting has produced remarkably precise findings. They demonstrated that for predictions of up to seven days, professional weather forecasting services outperformed both models. A predictive algorithm for identifying the changing trends of weather conditions based on data mining was put out. In the suggested data model, weather observations are extracted using k-means clustering and predictions are made using a hidden markov model. Grover et al. explored weather forecasting using a hybrid technique that blends deep neural networks that simulate the combined statistics

of a collection of weather-related data with discriminatively trained predictive models.

II. PROBLEM STATEMENT

We can organise the day more effectively and respond appropriately if we are aware of the weather conditions well in advance. Given how unpredictable and fluctuating the weather is, predicting it can be difficult. The project's goal is to reliably predict meteorological conditions including temperature, humidity, and precipitation.

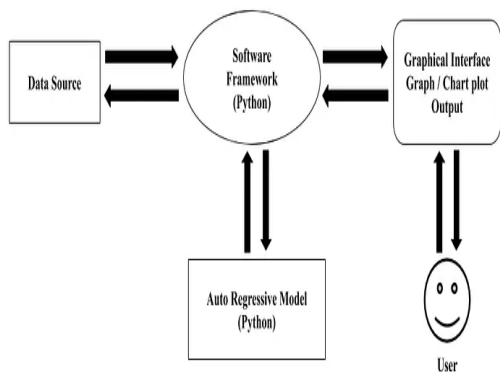
III. FUNCTIONALLY INEFFECTIVE REQUIREMENTS

In software engineering and requirements engineering, a non-functional requirement is one that establishes criteria to measure how well a system performs, as opposed to describing specific behaviours. The following are among the project's non-functional requirements: basic understanding of the established weather forecasting process.

- Performance Maintaining the Integrity of the Specifications
- Availability
- Flexibility
- Scalability
- Usability

IV. PROPOSED SYSTEM

Machine learning making for the use of weather predictions. It is a potent method for making weather predictions that are more accurate. To anticipate the weather, a weather dataset is collected, examined, and processed by algorithms.



V. FIGURE

Parameters used for Predication

- Air Temperature (Deg C)
- Humidity (%RH)
- Soil Moisture (%RH)
- Wind Speed kmph
- Wind Direction (Deg)
- Solar Radition (w/m2)
- Soil Temperature (Deg)

VI. RESULT

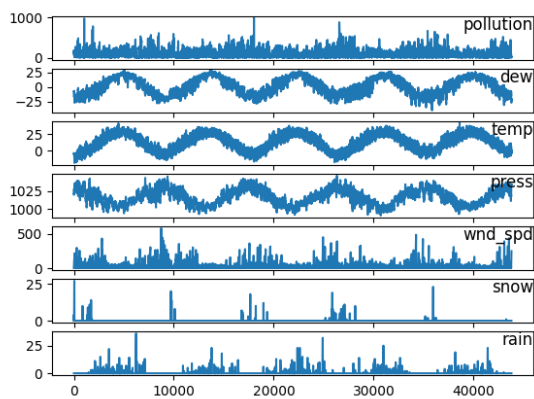


Figure1

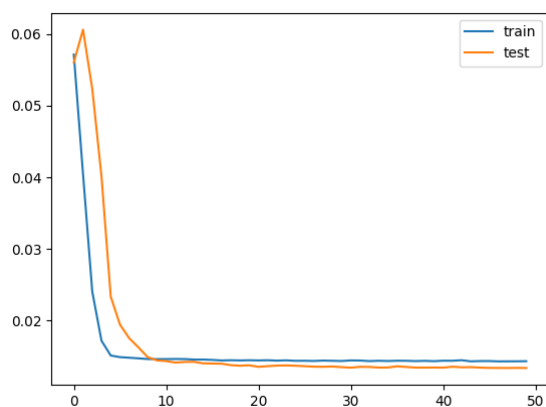


Figure 2

Weather predication System used in machine learning tensor flow model can be used in this system previous data of weather system. Figure1 of results of predication in fig 1 we can see that the predication analysis of simulated result and actual results. In fig2 the real time data is compared with the trained data and its been observed that test data result is improved with implementation of proposed method.

VII. CONCLUSION & FUTURE SCOPE

The suggested technique intends to provide an effective framework for forecasting and tracking the datasets of weather attribute predictions. In the past, simply the current time was used to record weather parameters. Future knowledge should be provided to farmers based on favourable climates. Example like grips, banana, mango

In our research, we are attempting to contrast several machine learning algorithms for event prediction. In order to forecast occurrences, machine learning models use data from the temperature, dew, humidity, pressure, visibility, and wind speed.

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