

Predictive Analytics In Weather Forecasting Using Machine Learning Algorithms

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Abstract

Agriculture is the backbone of every economy. In a country like India, which has ever increasing demand of food due to rising population, advances in agriculture sector are required to meet the needs. To add to it, the present economic conditions and government policies of India are such that it necessitates the adoption of Precision farming or smart farming. It will enable the farmers to maximize their crop yields and minimize the input costs as well as the losses due to reasons like uncertain rainfall, droughts etc. from this model. For Predicting weather forecasting we will use machine learning Algorithms like Linear Regression, Decision tree.

Keywords: Predictive Analytics, Weather Forecasting, Machine Learning Algorithms.

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1. Introduction

Machine Learning Technique is most robust technique for predicting weather forecasting. In past days we had to give instructions to System and then it gave result. but now we have machine learning algorithm so we can directly give inputs and feature and it generates result automatically. Just we need train the data then it generates model and features. [1]Most of the work related to machine learning for agriculture either solves the purpose of cultivating a crop and suggest weather data based on the statistical information.[2]Most of the work does not handle the planting of crops based on the climate.[3] plant diseases and insect pests causes significant reduction in quality as well as quantity of agricultural product so plant disease and insects pests forecasting is of great significance and quite necessary.

2. Machine Learning Algorithms

Machine learning algorithms are described as learning a target function (f) that best maps input variables (X) to an output variable (Y): $Y = f(X)$.

2.1. Linear Regression

Linear regression is the most basic and frequently used predictive model for analysis. Regression estimates are generally used to describe the data and the elucidate relationship between one or more independent variables and dependent variables. Linear regression finds the best-fit through the points, graphically. The best-fit line through the points is known as the regression line.

OLS Model

Ordinary least square model is the most common estimate method that is used in linear model. It is used for getting best estimates. It minimizes the sum of square in the dependent variable. This helps us to find the relationship between dependent variable and independent variable. As it

