



Prediction of Suitable Crop Using Machine Learning

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ABSTRACT

Accurate yield forecasting is very important in farming and agriculture. To design decision making tool for farmers and to decrease their required investment Remote monitoring is used. Machine learning is an important decision support tool for crop forecasting, including determining which crops to plant and what to do during the growing season. Several machine learning algorithms have been implemented to support crop forecasting research. In this study, we looked at several parameters that affect the results. The parameters are nutrition, humidity, temperature, pH, precipitation. Using the information extracted from these parameters, we developed a machine learning model to analyze and predict the best yield using machine learning.

Keywords – agriculture, machine learning, crop forecast, management algorithms, crop production, data extraction.

Introduction

Agriculture is the backbone of India's economy. Agricultural production in India is largely dependent on weather conditions. Rice cultivation is mainly dependent on rainfall. Timely advice needs to be provided to predict and analyse future crop productivity to help farmers maximize yields. Yield forecasting is an important agricultural task. Previously, farmers predicted yields based on the previous year's harvest. Therefore, there are various methods or algorithms for this type of crop data analysis and with the help of these algorithms, we can predict yields. Support vector machine, naive based method, decision tree random forest are used. With all these algorithms and the relationships between them, there are more and more applications and roles for big data analytics technologies in agriculture. After the creation of new innovative technologies and technologies, the agricultural sector is slowly declining. Thanks to many of these inventions, people are focusing on the development of artificial products, hybrid products that lead to unhealthy lives. Today, modern people do not realize that the crop is planted at the right time.

Methodology

The proposed framework applies machine learning to predict the best yield. The experiments were carried out on datasets collected from the proposed model. Cultures are selected based on the prevailing atmosphere, taking into account the soil and its components as climatic and soil parameters. We used four algorithms and chose the one that predicted more accurately. The algorithms we use are Decision Tree and Naive Bayes, SVM and also Random Forest algorithms. Where Random Forest Algorithms Make More Accurate Predictions Finally, we use random forest algorithms because the latter algorithm predicts a better

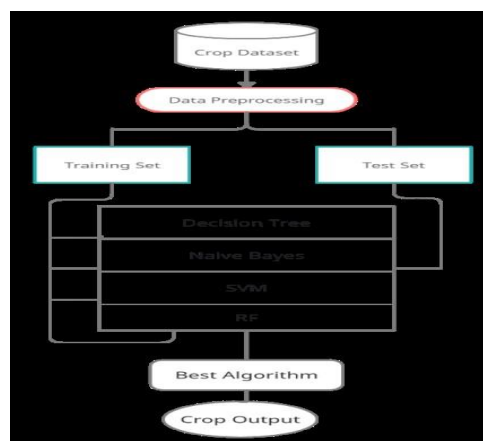


Fig: Block Diagram

Literature Survey

Sheenoy et al. represented paper this article provides answer to reducing shipping costs. IoT-based methodologies are being used to reduce the number of agents and the average number of hops between customers and farmers, further helping farmers. This article eventually became the inspiration for my research work. This paper presents a predictive-based engine that implements built-in mechanisms and recommends harvesting with profit.

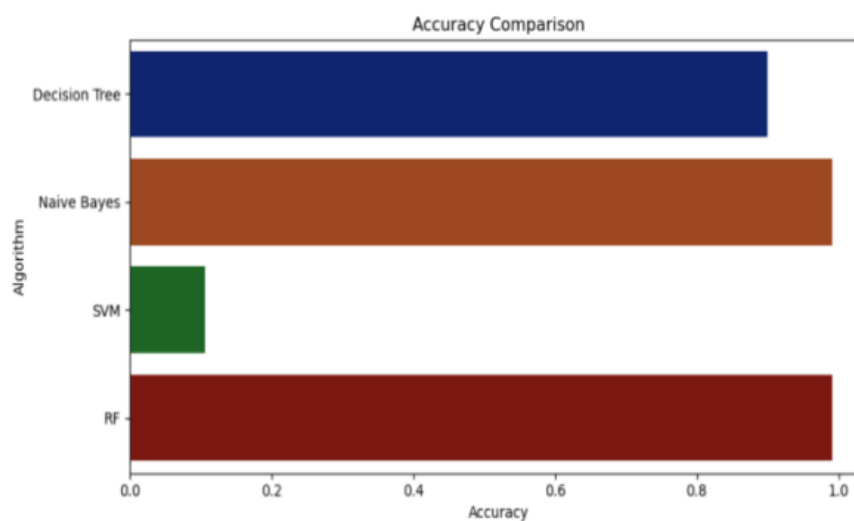
Nagini et al. shows a review of the study data presented in this paper, along with a description of the creation of a set of predictive models. Various regression methods are used on sample datasets to individually identify and explore attributes

Similarly, classification of soils according to genetic algorithms, naive bayes and association rule derivation. Finally, we will discuss the clustering of soil databases. He helped me understand and analyze various data extraction algorithms. He proved to be very helpful in creating this research assignment. It helps to extract datasets obtained from sensors used remotely Maintaining the Integrity

Results and Discussion

Selecting the algorithm:

The four Algorithms used are SVM, Navie Bayes, In Jupiter Notebook Comparing Accuracy's of Algorithms Using Bar plot we will get the following output



Conclusion

The proposed model is built using the ML algorithm to reduce the problem of farmers losing money on their land due to inadequate information on the particular crop and soil.

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