

MACHINE LEARNING PROJECT PROPOSAL

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Title

Development of a soil-type-based crop recommendation model

Problem Description

The agricultural industry suffers from low yields due to poor selection of crops for a particular soil type. Our team aims to solve this problem by developing a crop recommendation model to help farmers choose the most suitable crop for their soil type. These studies belong to the agricultural sector.

Currently, farmers select crops based on their own experience, which is not always the most effective method. Some of the approaches currently used to address this issue include soil surveys and expert advice. However, these procedures can be time consuming and expensive.

Our approach is innovative because we plan to use machine learning techniques to recommend the most suitable crop for a given soil type. Our model will be able to analyze various parameters such as soil type, climate and topography to provide accurate recommendations.

Datasets

The dataset that we plan to use is called the "Crop Recommendation Dataset" and is available on Kaggle. It contains information on different crops and their characteristics, as well as soil and weather conditions for various locations. The dataset includes 22 columns, including the crop name, soil type, nitrogen, phosphorous, and potassium content in the soil, rainfall, temperature, and humidity levels. There are a total of 2,200 rows in the dataset, representing different combinations of soil and weather conditions for which crop recommendations are given.

[Link to Dataset](#)

[Crop Recommendation Dataset](#)

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Machine Learning Techniques

We plan to use various machine learning techniques such as decision trees, random forests, support vector machines (SVM), and logistic regression (LR) to develop our crop recommendation model. These techniques will help us analyze the data and make accurate predictions for crop recommendations.

Conclusion

Our crop recommendation model will provide an innovative solution to the problem of low yield in the agriculture industry. By recommending the most suitable crop for a particular land type, our model will help farmers save time and money while increasing their crop yields. We believe that our research will be of great value to the agriculture industry and will help improve the livelihoods of farmers worldwide.