

AI-based Crop Recommendation and Yield Prediction

Abstract:

Agriculture is the backbone of India. As per the statistics for the year 2020-21, the total foodgrains production is estimated at approximately 305 million tonnes(MT), which is higher than 7.94 million tonnes(MT) during 2019-20. Digital Farming allows precise utilization of inputs like seed, water, pesticides and fertilizers at the right time to the crop for maximizing productivity, quality and yields. The project process follows data cleaning, data preprocessing and data analysis. In the data analysis machine learning algorithms like linear regression, logistic regression, Support Vector Machine(SVM) and Random Forest(RF) to predict the crop yield and to classify the crop based on the weather and soil data. Finally, the model which has high accuracy on the test data with less Mean Absolute Error(MAE) and Root Mean Square Error(RMSE) values is chosen for deployment. By using this system, farmers can decide the type of crop to be cultivated and productivity for the seasons with soil and weather data. This can be helpful for farmers as a personal assistant to them and also for newbie farmers wishing to start agriculture without any prior experience.