Artificial Intelligence Based Alternate Crop Recommendation

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Abstract **– Agriculture contributes significantly to the Indian economy. Agriculture is important to the Indian economy and employment. India is the world's third largest economy, valued $2.1 trillion. The most common problem among Indian farmers is that they do not select the appropriate crop for their soil. As a result of this, they face a significant decrease in productivity. The purpose of this study is to helps farmers to increase crop yield by recommending a suitable crop for their land based on the geographical and climatic parameters. Precision farming is a modern agricultural technique that uses research data on soil properties, soil types and yield data collection to suggest suitable crops to farmers based on site-specific parameters. This reduces wrong choice on crop and increases productivity. In this project, we are building a mobile application, which intends to assist the Indian farmers in making an informed decision about which crop to grow depending on the sowing time, geographic location, and soil characteristics.**

Keywords **– Precision agriculture, geographical location, crop yield.**

I. INTRODUCTION

Artificial intelligence is based on the principle that human intelligence can be defined in a way that machines can easily imitate and perform tasks, from the simplest to the more complex. With the advancement of technology in digital world, we humans are pushing the boundaries of our thinking processes and trying to fuse the normal and artificial brains. This ongoing research has originated a whole new field of artificial intelligence. This is the process by which humans can create intelligent machines. AI is included in the domain of computer science, which has the potential to be aware of its environment and should thrive to maximize success rates. Artificial Intelligence technologies are being used by the agriculture industry to help yield healthier crops, control pests, monitor soil and growing conditions, organize data for farmers, assist with workload, and improve a wide range of agriculture-related tasks throughout the food supply chain.

II. PROPOSED SYSTEM

1) In the proposed system. the app will recommend suitable crop according to selected area. It includes factors like latitude value, longitude value, traditional crop, non-traditional crop, temperature, moisture, fertilizer required for crop.

2) We proposed Simple Linear Regression Algorithm for crop prediction. Admin will enter data region wise, system will predict suitable crop for particular region using Simple Linear Regression Algorithm. System will predict the suitable crop, so that farmer not incur any losses.

1. Accuracy is improved
2. The crop for the specific soil is identified
3. Time consumption is reduced.
4. Focused on crop growth based on the factors of location forecasting to obtain a good yield.

III. IMPLEMENTATION AND WORKING

The objective is to build a robust application to give correct and accurate prediction of crop sustainability in a given area for the particular soil type. The system that provide recommendation of the best suitable crops in the area so that the farmer does not incur any losses.

Simple Linear Regression Algorithm
A simple linear regression algorithm establish relationship between a dependent variable and single independent variable. Because the relationship demonstrated by a Simple Linear Regression model is linear or a sloped straight line, it is called Simple Linear Regression.

Geolocation Algorithm
Geolocation allows users to obtain all types of information in real time and pinpoint the user's location at any given point in time from any

device connected to the Internet. Geolocation technology serves as the foundation for location-based services and applications.
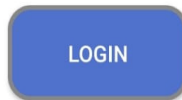
Working Steps:

Step1: Admin upload the dataset

Step2: User register

Step3: user login

Step4: Geolocation (automatically shows the latitude and longitude value)

Step5: It provides Prediction of traditional crops and non -traditional crops

IV. EXPERIMENTAL RESULT.

Enter Username

Enter Password

LOGIN

Don't Have an Account ? Sign Up

User Added SucessfullyResult11asasf

Fig 1. User Page
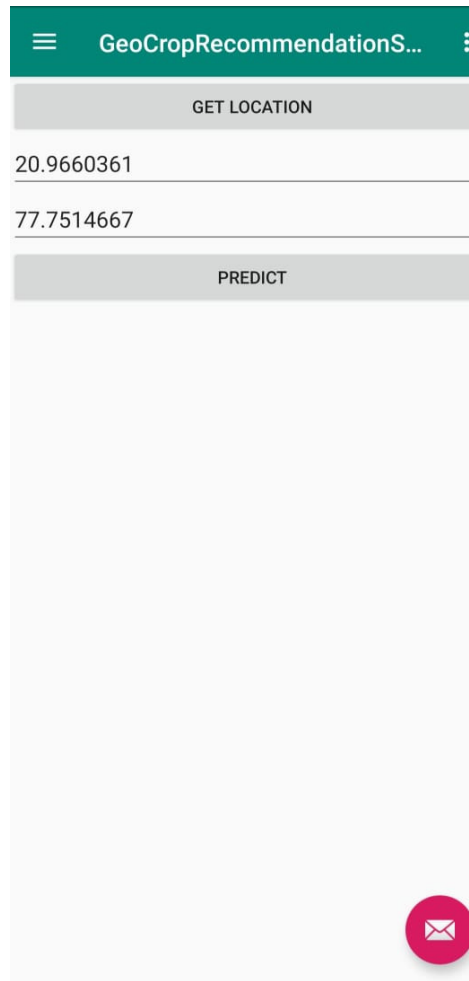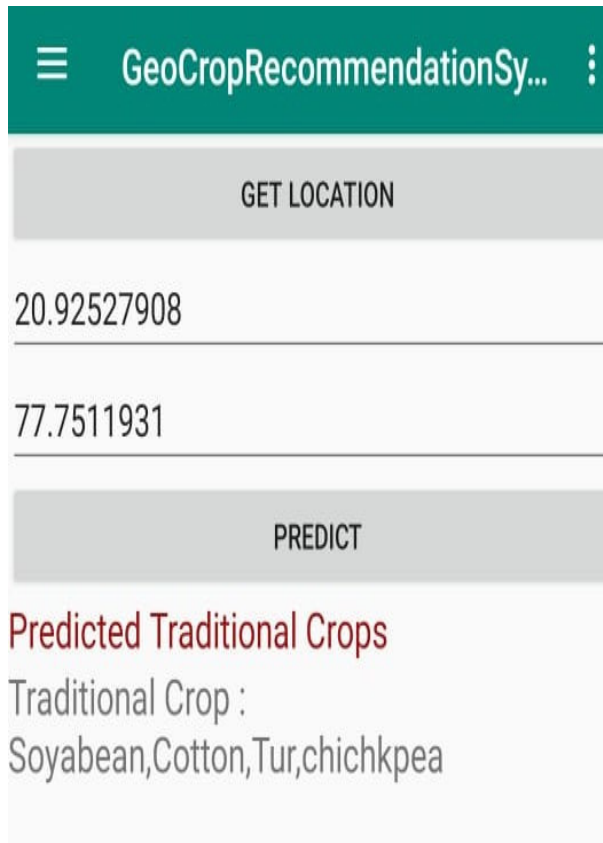

Fig 2. Get Location Page

GeoCropRecommendationSy...

GET LOCATION

20.92527908

77.7511931

PREDICT

Predicted Traditional Crops

Traditional Crop :
Soyabean,Cotton,Tur,chichkpea

Fig 3. Prediction Page

CropName : Soyabean

Lat : 20.925373

Lang : 77.7514667

CropName :
Soyabean,Cotton,Tur,chichkpea

Lat : 20.937424

Lang : 77.779549

CropName :
Soyabean,Cotton,Tur,chichkpea
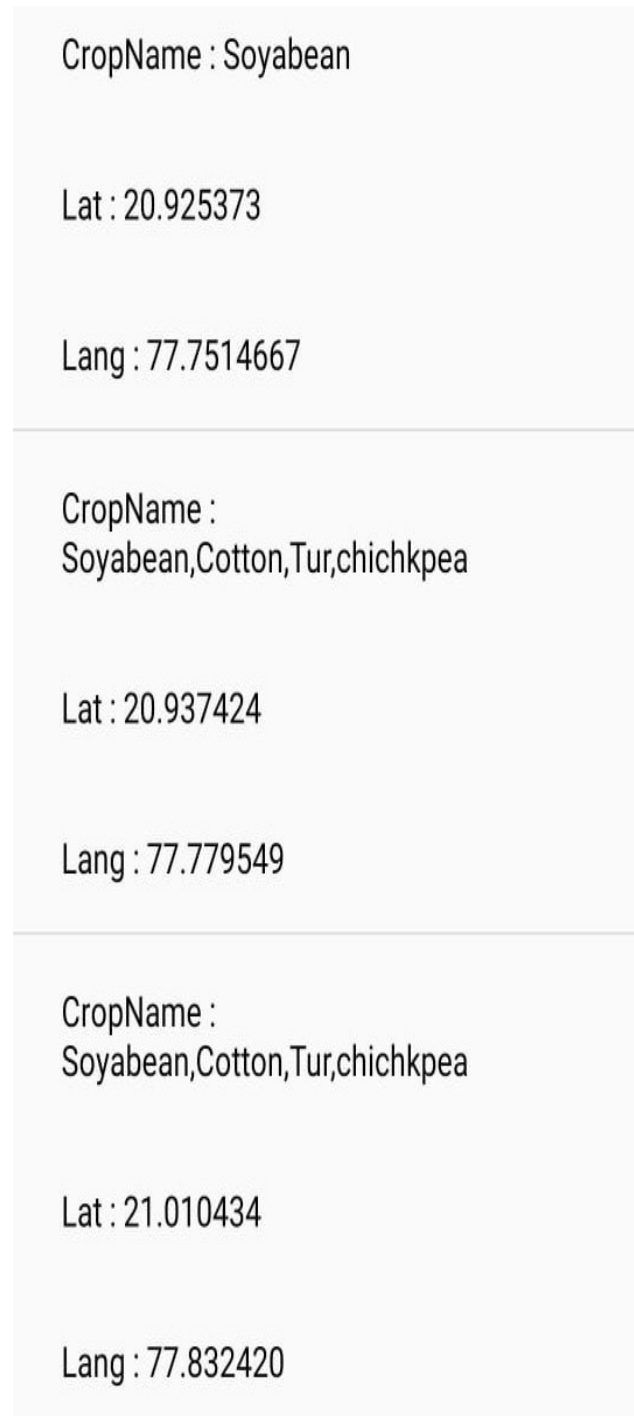
Lat : 21.010434

Lang : 77.832420

Fig 4. Result page

Conclusion

The innovations have led to modern techniques like virtual agriculture, precision agriculture and plenty of others. India is country in which agriculture plays a prime role. Our work would help farmers in sowing the right seed based on soil requirements to increase productivity and acquire profit out of such a technique. Thus, the farmers can plant the right crop increasing his yield and also increasing the overall productivity of the nation. Our future work is aimed at an improved data set with large number of attributes and also implements yield prediction.

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