Crop Yield Recommendation System App

Intuition

India (20%) ranks first globally with highest net cropped area followed by US (19%) and China (16%). The economic contribution of agriculture to India's GDP is steadily declining with the country's broad-based economic growth. Still, agriculture is demographically the broadest economic sector and plays a significant role in the overall socio-economic fabric of India.

The reason for this decline in the agriculture sector is due to the fact that farmers are not empowered and due to lack of application of IT in the farming sector. Farmers have less knowledge about the crops they grow.

We are trying to contribute our knowledge by applying machine learning techniques to predict the crop yield and name by considering various factors such as temperature, rainfall, season and area

Application & Aim

The project finds a huge application in improving real life farming scenarios. A lot of crops are destroyed every year due to lack of knowledge of weather patterns such as temperature, rainfall, etc. which play a huge role in deciding the crop yield. This project not only helps in predicting these parameters for throughout the year, but also assists in predicting the yield of various crops in various seasons based on past trends and soil parameters. Hence it allows the farmers to decide the best crop to grow to suffer minimum losses.

Result

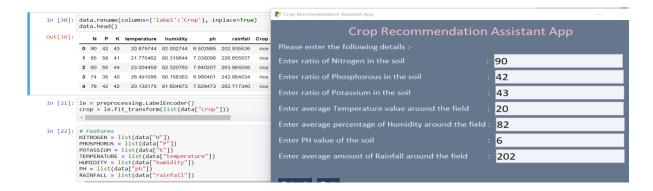
1. Prediction based on Soil, rainfall, humidity and temperature

- We used Naïve-Bayes, Random Forest and Gradient Boosting Classifier for predicting crop and yield
- We achieved approx. 99% accuracy with the help of Gradient Boosting algorithm

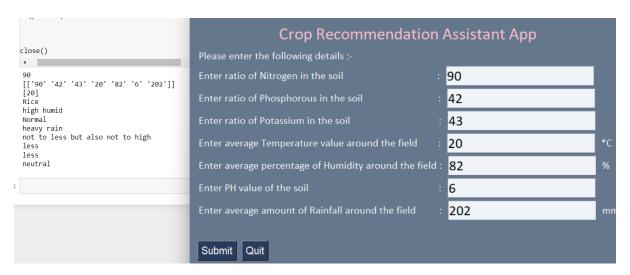
2. Recommendation App

- We used PySimpleGUI interface to build app
- App take the soil parameter, temperature, rainfall and humidity data based on it, it gives the best growing crop for that environment, field and soil

Enter the values



Output



3. Prediction based on Area, Season & Year

 We used Linear Regression, Random Forest and LSTM Neural network to predict production