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Agri ChatBot – An Intelligent Farmer Assistant

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ABSTRACT: In India, agriculture plays a predominant role in economic growth. The common problem existing among the Indian farmers today is that they fail to choose the right crop based on their region specifications and yield history. Hence they face a serious setback in productivity. Agricultural statistics and forecast is an important resource that the government has not explored commensurate to its impact. The farmers do not have a single source which can cater to all their queries regarding seeds, fertilizers, market prices, storage facilities, government schemes etc. To make this data analysis easily accessible to the farmers a Chabot is proposed which uses the Machine Learning Domain. Our Chabot proposes with various farming techniques, which helps them decide most suitable crops as per current climatic conditions, soil conditions and geographical characteristics of the specified region. It also helps them to get responses of the farmer input queries regarding agricultural context, so as to make farmer interaction more user friendly. If the system fails to answer any specified query, the query is redirected to helpline centers. The system basically works as a virtual, handy assistant to assist farmers throughout the year helping them stay notified of any factor that would affect crop productivity and profit.

I. INTRODUCTION

I. Overview of Machine Learning

Machine learning (ML) is a type of artificial intelligence (AI) that allows software applications to become more accurate at predicting outcomes without being explicitly programmed to do so. Machine learning algorithms use historical data as input to predict new output values.

II. Overview of ChatBot:

A chatbot is a software application used to conduct an on-line chat conversation via text or text-to-speech, in lieu of providing direct contact with a live human agent. Designed to convincingly simulate the way a human would behave as a conversational partner. Agriculture is the art and science of soil cultivation, it is a key to develop a country. Today modern way of plant breeding agro chemicals like pesticides, fertilizers and due to increased technological developments our farmers are left behind so they should take a step ahead, making them aware regarding latest techniques is necessary. This system Agribot is a web application, which is a virtual assistant that enables farmers to use a portable and handy tool. Our Interface has various features like crop recommendation, fertilizer, crop rotational plans and etc. Agri-Chatbot is a question answering system. In this, Farmers get to ask queries to the machine in back it will respond with accurate answers as possible. Dataset is a table or a CSV (Comma Separated Values) file with the data. In this Agri-Chatbot dataset is being taken from KCC KISAN CALL CENTER (india.gov.in) website. Algorithm used in this project is NEURAL NETWORKS (KERAS SOFTWARE).

II. LITERATURE REVIEW

Several research studies have been undertaken in this area. They are differentiated on the basis of the method of algorithm selection or method of deployment. The following literature was referenced for our project.

In the problem among Indian farmers regarding their choice of best crop based on their soil quality is resolved. The recommendation system is developed using various classification algorithms. The system works through a GUI. In the modelling and development of Precision farming is discussed. The main purpose of this system is to notify farmers through mails and emails directly about various advisory schemes. The model is developed so as to help farmers even with very low technological knowledge or very small scale farming.

In a comparative study of various algorithms is done so as to decide the best one for yield prediction of various crops in Precision Agriculture. All the algorithms are basically put for testing on a data set of soya crop collected across several years. The algorithms for comparison used in this paper are Random Forest, Support Vector Machine, Bayes, Bagging and Decision Tree.

In FarmBot is a chat bot, which is a virtual assistant that enable users to get their queries clarified in a user friendly manner. The input is obtained from the user. If the query is based on prediction, then the future predictions on the requested agricultural products are represented in the graphical format and displayed to the user.

III. METHODOLOGY

System Modeling is an abstract view of the System that ignores system details. A System Modeling is describes the system which is to be developed.

The proposed system overcomes the above mentioned drawbacks by providing a user interface, where farmers or any other users can interact effectively to get the desired responses with lesser number of step.

This system Agribot is a web application (app), which is a virtual assistant that enables farmers a very portable and handy tool which would both assist them with their farming methods as well as recommend them the best suitable crop as per given conditions so that they can decide what crops they can grow so as to get maximum yield in a better way.

A web app is developed which has a dedicated User Interface for farmers of specific location. The User Interface has various features like crop recommendation, query section, weather forecasting as well as assistance to Kisan helpline centers.

There can be an option of choosing local language to communicate with the chatbot in speech format would make app very feasible for use even to the farmers having very low exposure to mobile technology and chatting. The entire System overview of project It explains the flow of data across the system right from collection of data to compilation of data to finally recommending the best crop to the farmers by feeding data in the database and modelling it through various algorithms.

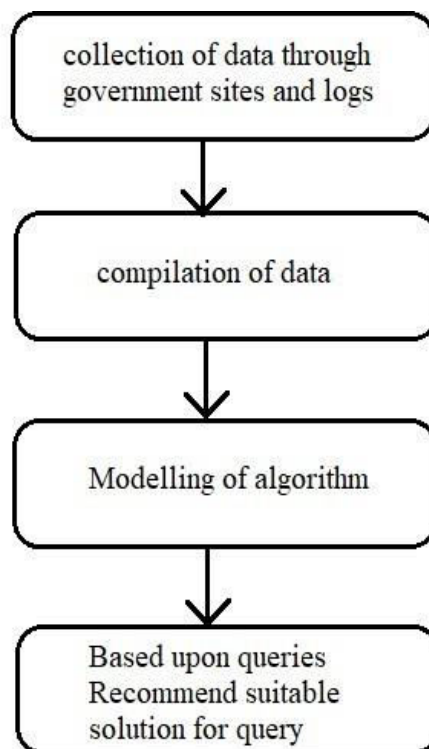


Fig. flow diagram

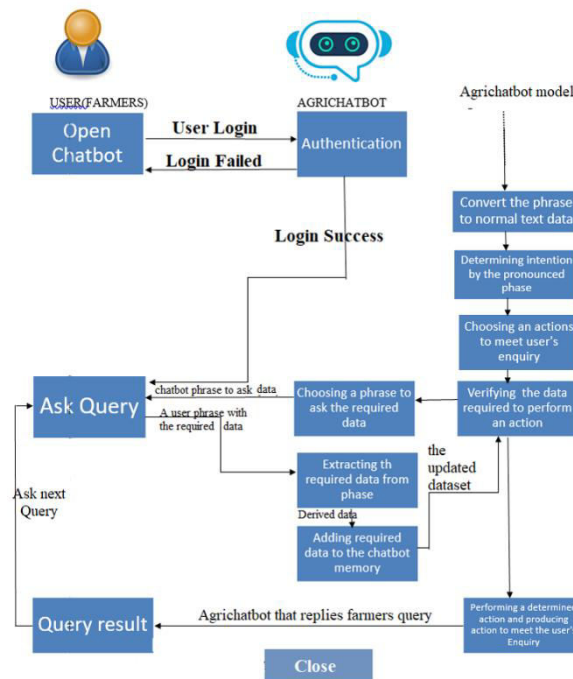


Fig. Architecture diagram

I. Data Sets:

Farmers' information inquiries with the Kisan Call Center (KCC). The Government of India has made all logs of calls to the KCC from January 2015 to September 2017 publicly available. In total, this corpus contains data for 8,012,856 calls. Each call log has 11 fields, including the date and time of the call, location, crop (one of the 306 crop types), query, and the answer provided by the KCC Agri-expert. For implementing Farmer Bit, our system was restricted to state of Karnataka since we have relevant information mapped and dataset contain maximum information than others. There were 35,852 calls related to Karnataka in the KCC dataset.

IV. PROPOSED SYSTEM

The proposed system overcomes by providing a user interface, where farmers can interact effectively to get the desired responses with lesser number of steps. This system Agribot is a web application (app), which is a virtual assistant that enables farmers a very portable and handy tool which would both assist them with their farming methods as well as recommend them the best suitable crop as per given conditions so that they can decide what crops they can grow so as to get maximum yield in a better way. A web app is developed which has a dedicated User Interface for farmers of specific location. The User Interface has various features like crop recommendation, query section, weather forecasting as well as assistance to Kisan helpline centers.

II. Advantages of Proposed System:

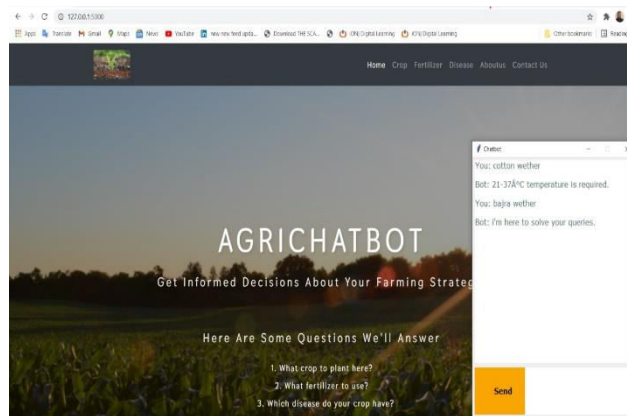
- In user interface, where farmers can interact effectively to get the desired responses with lesser number of steps.
- The User Interface has various features like crop recommendation, query section, weather forecasting as well as assistance to Kisan helpline centers.
- Easy to use
- Efficient
- Portable

Snapshots

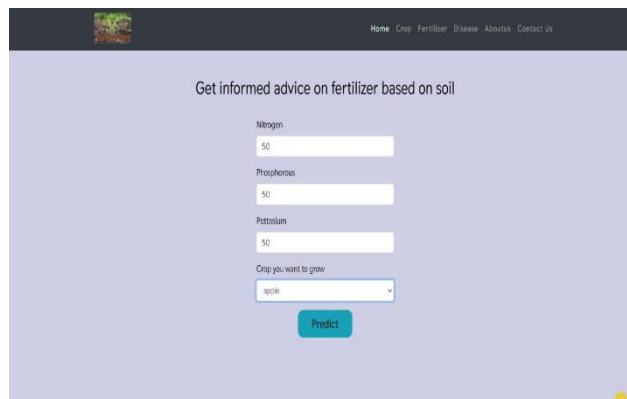
I. Login Page



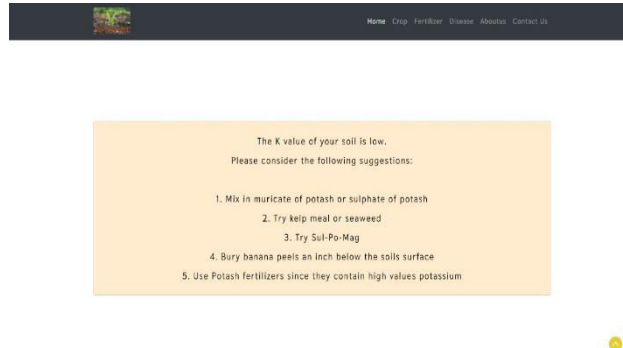
II. Home page



III. Suggesting fertilizers



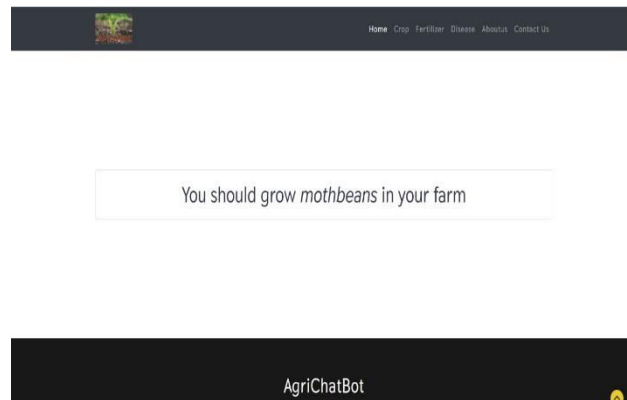
IV. Predicted Fertilizers



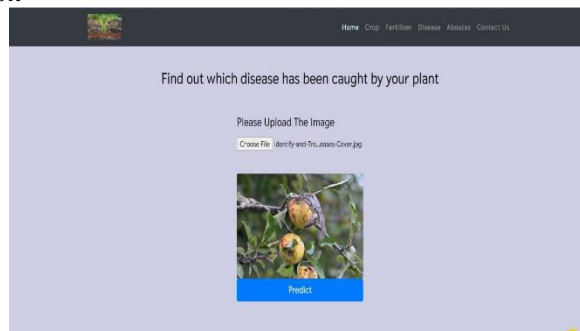
V. Suggesting Suitable Crop



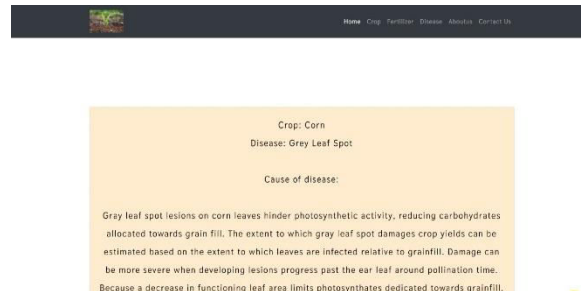
VI. Suggested Crop



VII. Crop Disease Prediction



VIII. Predicted Disease



V. RESULTS

Based on the research described, AI-based chatbot was implemented. After achieving reasonable predictions, we set up a LOCAL-WEB connection with Bot API to make our chatbot interactive for users. The functionalities developed for the Agribot are demonstrated. Plant disease detection module trained on the plant village dataset, is one of the special features of our chatbot. The Agribot can be more generalized in terms of conversations if the model gets trained on large number of data-points. When compared to other machine learning techniques sequence to sequence RNN algorithm is versatile. It consumes less time. The other approaches like SVM, logistic regression all require fixed input size and also results is fixed output size.

VI. CONCLUSION AND FUTURE WORK

The system can be scaled to be implemented and deployed for usage of farmers. The Chatbot API not implemented the chatbot currently. The app can also be made more personalized for farmers by considering various features like crop rotational plans, government schemes of the concerned farmer or the agricultural resources available to him for farming.

REFERENCES

- [1]“Agribot: A Natural Language Generative Neural Networks Engine for Agricultural Applications” IEEE 2020 International Conference on Contemporary Computing and Applications (IC3A)- Bhavika Arora, Dheeraj Singh Chaudhary, Mahima Satsangi, Mahima Yadav, Lotika Singh
- [2]“Agri Bot - An intelligent interactive interface to assist farmers in agricultural activities” IEEE 2019 IEEE Bombay Section Signature Conference (IBSSC) – Divya Sawant , Anchal Jaiswal , Jyoti Singh , Payal Shah
- [3]“A Survey on Chat-Bot system for Agriculture Domain” IEEE 2019 1st International Conference on Advances in Information Technology- Prashant Y. Niranjana, Vijay S. Rajpurohit , Rasika Malgi



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