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# INTELLIGENT AGRICULTURE INFORMATION SYSTEM FOR FARMERS USING CHATBOT

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***Abstract*— Web and mobile applications and services make things simpler fulfilling our daily needs for information, communication, entertainment, or leisure. Mobile Applications have brought a new revolution. In this paper we provide one such mobile and web application under development by us, which can lead to a healthy life. This application has been built keeping the farmers in mind and a common man who wants to grow vegetables for his daily need. It keeps a farmer updated with all the information related to crop, pesticides, insecticides, financial sector etc. It provides detailed information about which crop to grow in which season and which crop is suitable for that area in which the farmer is living.**

***IndexTerms*— agriculture, machine learning.**

## 1. INTRODUCTION

This is a mobile application that is basically built on the idea that an app can keep a farmer updated with all the information related to crop, pesticides, insecticides, financial sector etc. It provides detailed information about which crop to grow in which season and which crop is suitable for that particular area in which the farmer is living. It also provides details regarding various banks loan rates and the current schemes provided by the government that are beneficial to farmers. The app will contain a feature in which the farmer has to select the crop sowed and then the app will automatically tell the farmer about the diseases that are prone to that particular crop.

## 2. LITERATURE SURVEY

Existing chatbot knowledge bases are mostly handconstructed, which is time consuming and difficult to adapt to new domains. Automatic chatbot knowledge acquisition method from online forums is presented in this paper. It includes a classification model based on rough set, and the theory of ensemble learning is combined to make a decision. Given a forum, multiple rough set classifiers are constructed and trained first. Then all replies are classified with these classifiers. The final recognition results are drawn by voting to the output of these classifiers. Finally, the related replies are selected as chatbot knowledge. Relevant experiments on a child-care forum proved that the method based on rough set had high recognition efficiency to related replies and the combination of ensemble learning improves the result. The major drawback was they were not able to design a reasonable storage structure to improve the retrieval efficiency of the dialog management module. (1) We use two main agents: communication and intelligent part. In order to get the question message sent by the customer the communication agent periodically performs a request to Telegram server using a standard HTTP protocol. Upon reception, it forwards that question to intelligent agent which then find the closest instance in predefined question-answer

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corpora. Notice that, we utilize the Lowenstein distance to measure the difference between a submitted questions with that of in pre defined question-answer corpora Once an closest instance is selected the intelligent agent forward the answer to communication agent which then send the answer back to the sender through Telegram chat service. From usability and performance testing result, the proposed system can deliver the automatic answer in less than 5 seconds with relatively good matching accuracy.(2) The response is not that accurate. The results showed too many mistyping in the sentences. Comparing 2 widely used analytics tools based on their ease of use. In the light of the same, Artificial Intelligence Machine Learning (AIML) driven chatbot, that is fueled with analytics' raw data, that will enable bot -users to get business insights by just typing in the query. Experiments were conducted to understand the performance of the tool. The tool was evaluated based on the quality of response and it performed well. (3) Chatbots services which are available for the development and improvement of the chatbot sector such as IBM Watson, Microsoft bot, AWS Lambda, Heroku and many others. An overview of cloud-based chatbots technologies along with programming of chatbots and challenges of programming in current and future Era of chatbot Analysis (4) suggested developers should understand and consider the stability, scalability and flexibility issues along with high level of intention on human language. The knowledge of chatbot are stored in the database. The chatbot consists of core and interface that is accessing that core in relational database management systems (RDBMS). The database (5) has been employed as knowledge storage and interpreter has been employed as stored programs of function and procedure sets for pattern-matching requirement. The interface is standalone which has been built using programing language of Pascal and Java. A Chatbot is implemented using pattern comparing, in which the order of the sentence is recognized and a saved response pattern is acclimatize to the exclusive variables of the sentence. They cannot register and respond to complex questions, and are unable to perform compound activities The techniques used to design and implement a Chatbot. Comparisons are made, findings are discussed and conclusion is drawn at the end From the survey we found The Chatbot must be simple, user friendly, must be easily understood and the knowledge base must be compact. These are the main features required.(6) We explore the avenues of teaching computers to process natural language text by developing a chat bot. We take an experiential approach from a beginner level of understanding, in trying to appreciate the processes, techniques, the power and possibilities of natural language processing using recurrent neural networks (RNN). To achieve this, we kick started our experiment by implementing sequence to sequence long short-term memory cell neural network (LSTM) in conjunction with Google word2vec. Results show the relationship between the number of training times and the quality of language model used for training model bot affect the quality of its prediction output. Furthermore, they demonstrate reasoning and generative capabilities or RNN based chat bot This system was successful only for a small database. (7)

## 3. PROBLEM STATEMENT

As we know farming is a prime occupancy in India, but as current trend all the things are getting online and most of the peoples are getting there required information online for learning and updating themselves.

But in case of farmers, this is not happening up to 100% compared to other fields, keeping this gap in our mind we are proposing new application, Agriculture Information System for farmers.

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Now a day's most of the peoples who are from farming family are not showing interest in farming, because there is no development at this area. Some farmers are committing suicide because they do not get proper money for their hard work. To reduce this problem, we are implementing Agriculture Information System for Farmers.

We want to contribute something so that it will become helpful and make changes in farming area. And we are sure this solution will be more useful to the farmers.

## 4. OBJECTIVES

- Providing better online information to farmers regarding various Crops.
- Specifying how to change their current cropping techniques to increase the revenue.
- Seeds details and the provider list with cost details – so that they can save some money by comparing the price of different vendors.
- Provides all Machines information's that are used by farmers
- Current Market prices of farmers products
- Government facilities to overcome farmers problems.
- Use of smart card for extra benefits such as concession in buying seeds and pesticides etc.
- We also provide multi-language facility so that the farmers can read the information according to their language.

## 5.METHODOLOGY

This project will provide better online information to farmers regarding the new Crops and help them to improve their current cropping techniques to increase the revenue.

Before selecting this topic, we searched in all search engine with different keys regarding agriculture information and crops details, and regarding guidance and solutions on the problems they are facing but we couldn't get much information that is usefully and relevant to their queries, as we know farmers are not much educated and they don't get information in one click, keeping all these things in our mind we are going to develop this system.

We want to contribute something so that it will be helpful and make changes in farming area, and we are sure this solution will be more useful to the farmers.

Developing a user-friendly Agriculture Information System for the world wide web which fulfil the Agriculture Interested People's requirements. Provide all the information for the Research Institutes, Buyers, Planters and Investors.

The main idea of the designed system is to provide better information to farmers, we are designing a system using cloud with videos, images and information so that anyone can understand easily.

This idea we implemented as **web application** as well as **android app** with limited information to be access easily by the farmers. The farmers who are uneducated and do not know how to use android apps and phones, can use **the web application with the help of employee which is assigned by the government**. And the farmers who are little bit educated or know how to use android phones and apps can use the **android app.**

Web application consists of 2 types of users first is **Admin,** he will be a government employee he will be responsible for managing all farmer related information in this system, and second is **Farmers,** each farmer can create his account by registering with system and then he can

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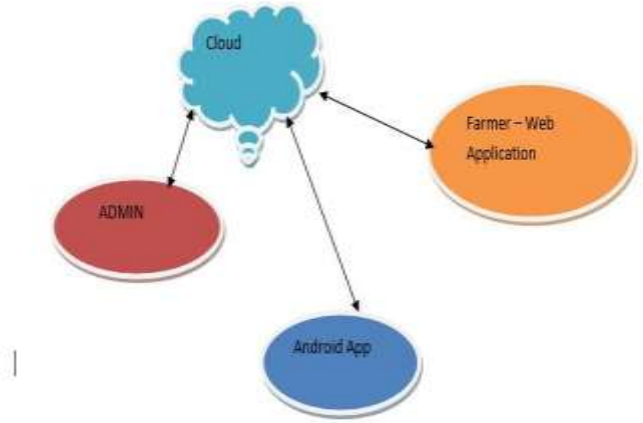
check the details he need.

And we are also providing android app to farmers who can get same information in mobiles also.

Government will provide **smart card** for the farmers who use android app or web application. **Smart card** is provided to each of the farmer with unique number. This smart card will contain details of the farmer such as name income and other important document details. Just using this smart card government can find their details and system will treat the farmers are well-known.

We also provide multi-language facility so that farmers can access easily. For eg: English, kannada and also, we can add many more languages.




1. Admin Content – He will be a main person, he will add and update the system and he will add the information about below point.

a. Seeds details and the provider list with cost details – so that they can save some money by comparing the price of different vendors.
b. All Machines information's that are used by farmers
c. Current Market prices of farmers products
d. Government facilities to overcome farmers problems.

2. Farmer Content – Farmers can access the information uploaded by the admin using Mobile App or by web application by registering and login to system.
3. Smart Card – Farmers will get Smart card, using this Smart card they can get benefits of our system as well as it indicates farmer is valid and he can access our application using this smart card number. In smart card, our system will provide Unique number to each farmer using this they can check their information anywhere by accessing our application.
4. Voice Interaction – Use of machine learning is integrated with the system, so that farmers can easily understand.

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5.

**ADVANTAGES**

- It will be useful for farmers, for getting information related to farming.
- It will educate the farmer about agriculture techniques, crop details, government facilities, etc.
- Using chatbot we are implementing voice interaction.
- Self paced learning using app.

**APPLICATIONS**

- AGRICULTURE
- SOCIETAL
- EDUCATION

It will be useful to farmers.

- It will increase the revenue of the farmers.
- Farmers can easily understand modern farming techniques.
- We are designing the system that is easy to use so that farmer can understand easily.

## 6.CONCLUSION

- We are implementing our idea in web application as well as in android app.
- We will provide all agriculture related information so that farmers can use it and improve their way of farming and can be aware of government facilities available for them.
- Smart card which will contain all the information about the individual farmer.
- The Multilanguage feature is used.
- Voice interaction using machine learning is integrated with the system.

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