

College Enquiry CHATBOT using RASA

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ABSTRACT

Nowadays, many people are using smartphone with many new applications i.e., technology is growing day by day. A chat bot has information stored in its database to identify the sentences and making a decision itself as response to answer a given question. The college enquiry chat bot will be built using algorithm that analyses queries and understand user's message. This chat bot is implemented using RASA. Rasa is an open-source framework for building AI bots which consists of two components: Rasa NLU and Rasa core. Rasa core is the component which handles the dialog engine for the framework and helps in creating more complex chatbots with customization. Rasa's NLU helps the developers with the technology and the tools necessary for capturing and understanding user input, determining the intent and entities. To design a College Enquiry Chatbot for Students to solve their queries within few minutes. Hardware requirements are i3 processor-based computer and 2GB-RAM. Software requirements include Rasa and Python 3.6 or higher. The aim is to implement a chatbot which can resolve student's queries, search the result for query and give the solution. The chatbot will handle the queries, ultimately reducing the human effort.

Keywords : Machine Learning, Human-Computer Interaction, Rasa

I. INTRODUCTION

These days, we see the talk bots wherever Chatbots are the wellspring of answers to the client's inquiries in a specific space where it is working.

Visit bots are the wellspring of answers to the client's inquiries. The requirement for school request framework emerges because of different reasons which include: the moderate idea of school site, an outcast would not realize where to look for a specific snippet of data, hard for the individual external

school's area to remove data. The school enquiry framework will give the reaction by summing up the question and afterward yield answers, it additionally gives particular data what the client needs.

Rasa is an open-source system for building AI bots which comprise of two parts: Rasa NLU and Rasa center.

Rasa center is the segment which handles the exchange motor for the system and helps in making more unpredictable chatbots with customization. Rasa's NLU assists the engineers with the innovation

and the apparatuses essential for catching and understanding client input, deciding the purpose and substances.

Contribution:

In this paper, we proposed the method in which we can get the answer to the query given by the student . The algorithm presented here is extended by previous works by [1],[2],[3].

Our contribution works, compared to previous work can be summarized as: In our system we will compare the query in our database and then give the output to the user.

Structure:

This paper is organized as follows: Section 2 presents Related Work. Section 3 summarizes our Proposed Work which consists of our base algorithm which presented in [1],[2],[3]. We will evaluate our methods & compare with existing work in Section 3 Results. Finally, in Section 4 we conclude and present suggestion for future work.

II. METHODS AND MATERIAL

In this chapter we will be seeing the mathematical model , System Architectutre and the data flow of the project.

A. Mathematical Model

Module 1: Bag of words

BoW is basically the way of extracting the characteristics/features from text so that it can be used in building models for example machine learning algorithm. The approach is very easy and flexible. BoW is a representation of words which includes two main things, document of known words and frequency of known words. The BoW can be simple or complex, the complexity comes in how we handle both creating the vocabulary of known words and

occurrence of known words. Which has three important steps first collecting the data, second- designing the vocabulary and the last step is creating the document vector.

Step 1 : Collecting the data: It can be any data given by the user, we can treat each and every line as different document.

Step 2 : Designing the vocabulary: Here we can collect the list of all the unique words ignoring case sensitive and punctuation and put that into the model vocabulary.

Step 3 : Creating the document vector Here we check the frequency of words in each document and the main goal of this step is to turn each word in the document into the vector form so that it can be easily used as an input to the other machine learning algorithms. The easiest way of scoring is to mark the presence of words as a Boolean value, 0 for absent and 1for present and then convert it into a binary vector.

Module 2:

Conditional Random Fields are a discriminative model, used for predicting sequences. They use contextual information from previous labels, thus increasing the amount of information the model has to make a good prediction.

B. System Architecture

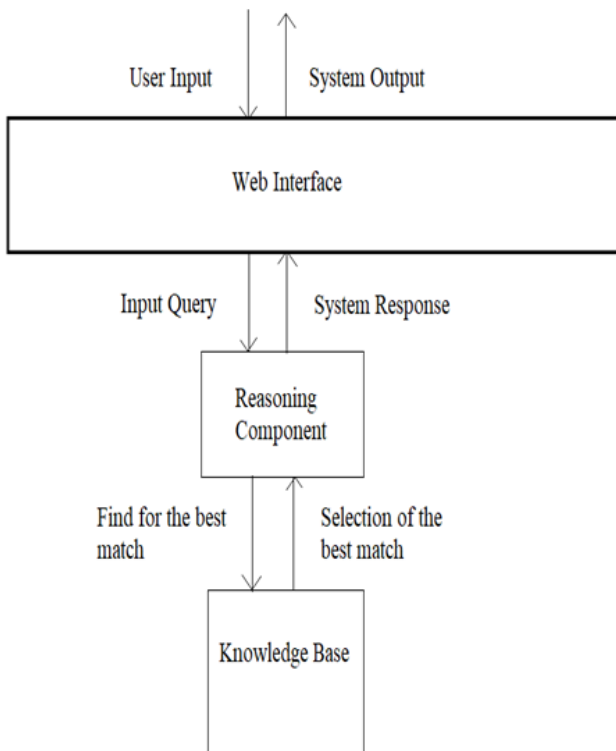


Fig 1. System Architecture

C. Data Flow Diagram:

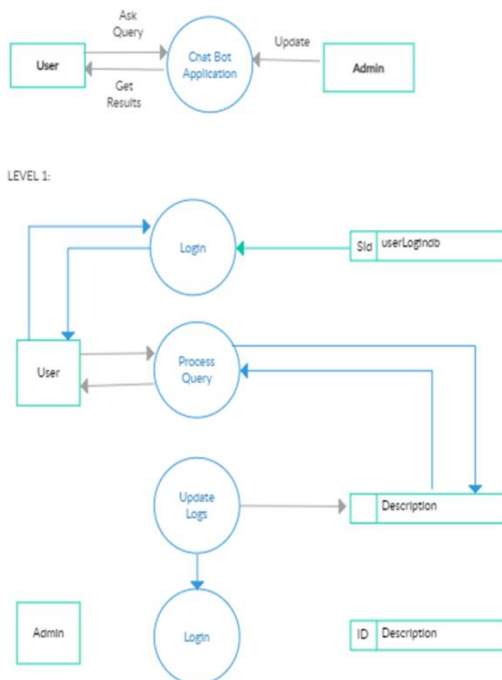


Fig 2. Data Flow Diagram

III. RESULTS AND DISCUSSION

In this chapter we will see how our chatbot works and look at the peroutputs of the specific menu options in our project.

A. Algorithm:

Step 1 : Tokenizers

The first step is to split an utterance into smaller chunks of text, known as tokens. This must happen before text is featurized for machine learning, which is why you'll usually have a tokenizer listed first at the start of a pipeline.

Step 2 : Featurizers

Featurizers generate numeric features for machine learning models.

Step 3 : Intent Classifiers

Once we've generated features for all of the tokens and for the entire sentence, we can pass it to an intent classification model. We recommend using Rasa's DIET model which can handle both intent classification as well as entity extraction. It is also able to learn from both the token- as well as sentence features.

Step 4 : Entity Extraction

Even though DIET is capable of learning how to detect entities, we don't necessarily recommend using it for every type of entity out there. For example, entities that follow a structured pattern, like phone numbers, don't really need an algorithm to detect them. You can just handle it with a RegexEntityExtractor instead.

B. Result Screenshots

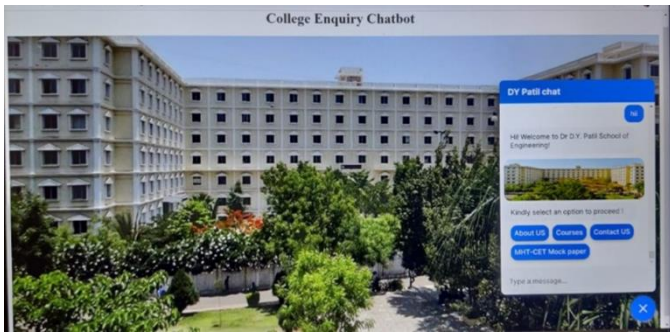


Fig 3. Front Page of Chatbot

The above image explains that there is a chatbot with the college photo at background as the user say's hi the bot responds by showing the picture of college with the 4 options so that the user can select according to his query.

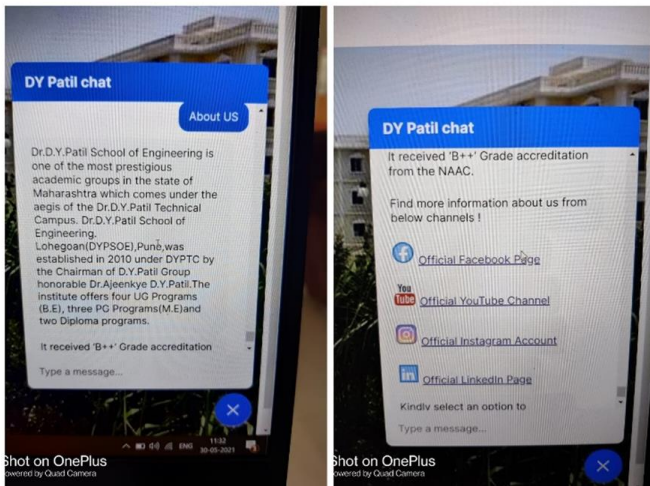


Fig 4. About Us Option

The above image is about the “About Us” option which will tell the user about the details of the college including the NAAC grade of college. It will also provide the user with the Official Facebook page, Youtube link, Instagram page and LinkedIn page of the college.

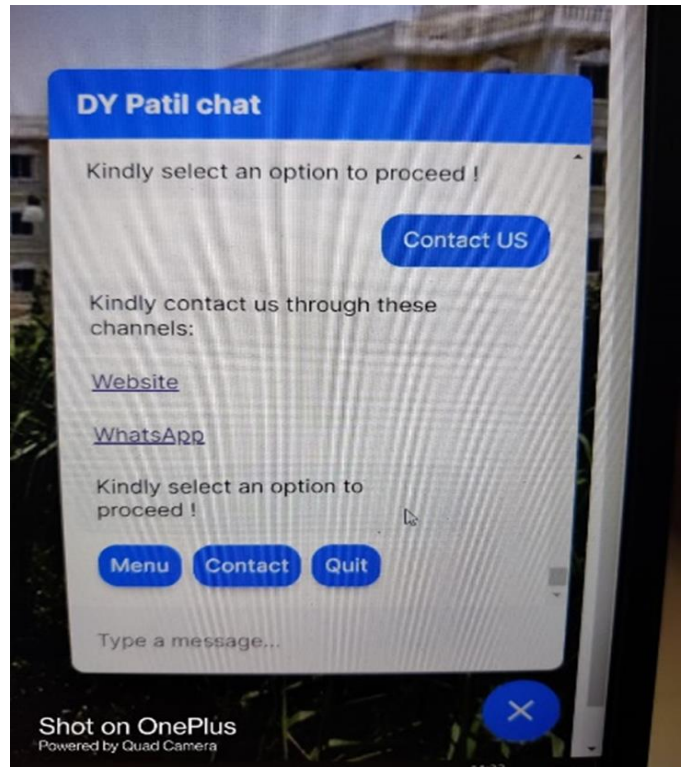


Fig 5. Contact Us Option

This above image is shows “Contact Us Option” where the user can find the website and the whatsapp number.

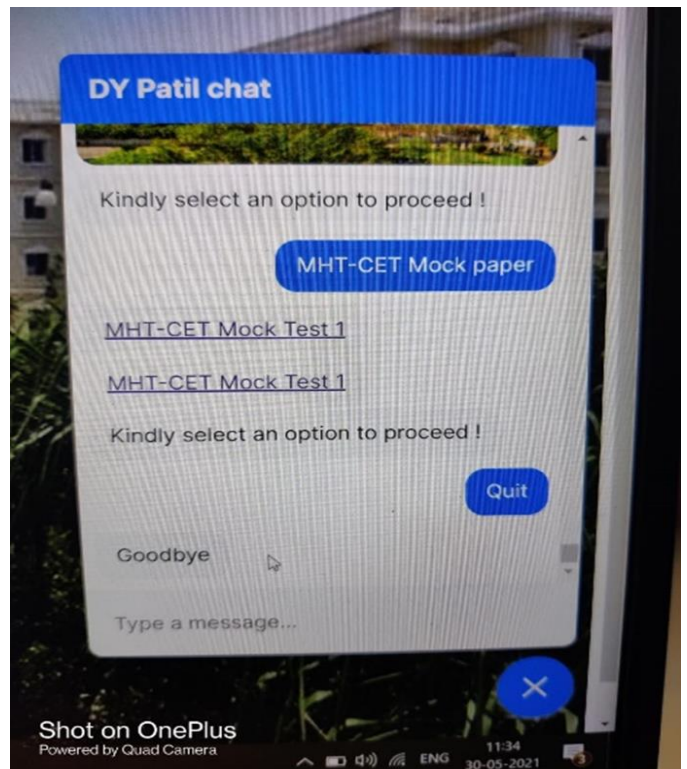


Fig 6. MHT-CET paper Option

V. REFERENCES

Here in this “MHT-CET Mock Paper” option the user can take the mock test for the better practice.

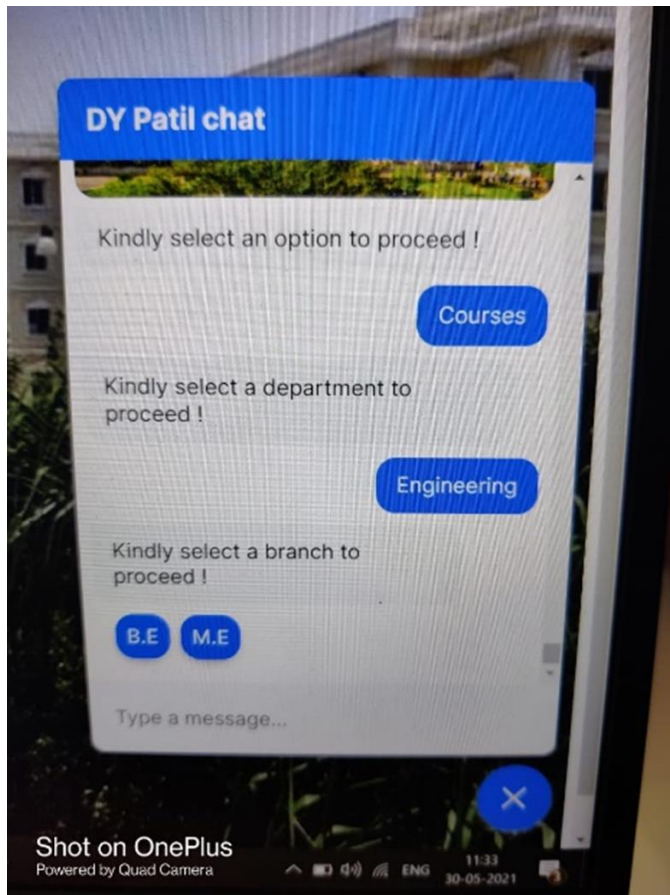


Fig 7. Courses Option

Here in this “Courses” the user can see the BE and ME courses.

IV. CONCLUSION

Chatbots are turning into a basic piece of the computerized world.

The undergrad and workers can openly transfer their questions.

The talk bot gives quick and effective pursuit to answers to the inquiries and gets the significant connects to their inquiry.

The goal of the system is to help the students to stay updated with their college.

The main motive of the project is to reduce the work load on the college's office staff and reduce the response time to a user's query.

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