

Smart College Enquiry Chatbot Using Deep Learning

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Abstract- Frequently we tend to tend to pay our time interrelate with numerous chatterboxes on the net, mostly targeted at such functions or just amusement. The chatbots have embedded information that helps them acknowledge the user's question and provide an answer to it. Today Artificial Intelligence is playing a major role in a variety of fields ranging from industries in product manufacturing, to customer care in public relations. As there are many Artificial Intelligence (AI) systems or chat bots which are in existence that help people solve their problems. This project aimed to implement online chatbot system to assist users who access college website, using tools that expose Artificial Intelligence methods such as Natural Language Processing, allowing users to communicate with college chatbot using natural language input and to train chatbot using appropriate deep Learning methods so it will be able to generate a response. There are numerous applications that are incorporating a human appearance and intending to simulate human dialog, yet in most part of the cases knowledge of chatbot is stored in a database created by a human expert. The program responds to the students' question with the help of algorithms. This System provides valid responses to the various queries of the users, which will make use of Natural Language Processing (NLP) and Long Short Term Memory (LSTM) networks, which are a special kind of recurrent Deep Neural Networks (DNN). This system can facilitate the user get the relevant notifications modified. The user will not waste a lot of time searching for the acceptable notices.

Keywords- Chatbot, NLP(Natural Language Processing), Deep Learning, LSTM

I. INTRODUCTION

Chatbot was a computer application which may speak to human beings naturally, the way we interact with one another. It can replace a person's for several tasks of answering queries. A chatbot is an agent that interacts with users using simple language. It had been built as an effort to fool humans. Several applications of chatbots like Customer Service, call centers etc. uses AI terminology to talk with user. One among the prime goals of chatbots is to resemble an intelligent human and make it difficult for the receiver of the conversation to know the important working alongside various

architecture and capabilities for his or her usage has widely broadened.

These chatbots can prove sufficient to fool the user into believing they're "talking" to a person's being, but are very limited in improving their knowledge domain at runtime, and usually have a very little to no means of keeping track of all the conversational data. Chatbots makes use of machine learning to succeed in AI helping them to know the user query and supply an appropriate response. The chatbots are developed using the synthetic Intelligence terminology for communicating or interacting with the user.

As students, we require many types of information regarding our college and university during our course. Sometimes getting this information is rather cumbersome and lengthy. Like getting information regarding our fees structure or the due fees remaining is a very lengthy process we have to go to administration building and find the correct window and then look for a no dues form then fill it with correct data and then submit it to the appropriate person and then that person will tell us our due fees. This is all long, hectic and unnecessary. We live in an age of computer science, where automation and simple procedures are easy to achieve. So why have this long and unnecessary process to get this trivial information. We as a computer science student are always looking forward to solving the problems around us using the technology that we learn and how to implement them to achieve ease of usage in real life. This is where we thought of using an intelligent voice bot delivering this information. Think about an application, where all you have to do is ask if you want to know the process of filling the university exam form, no problem our bot will tell you the steps. It can also solve the dilemma when a student is about to join the college. He/she may want to enquire about the fee structure of various colleges and know their admission procedure.

The purpose of developing this project is based on an intellectual chat-bot system which will deal with the academic activities like admission enquiry, fees structure, scholarship details, time-table of every department, details of the documents required to attach etc. With this chat-bot system it will be easy for the student to directly clear their queries in lesser time. This System will be a web application which

provides answer to the query of the student very effectively. Students just have to put their query to the bot which is used for chatting. The system will use the artificial intelligence algorithms to give appropriate answers to the user. The student will not have to go to the college for enquiring something. Student can use the Chabot to get the answers to their queries. Students can use this web based system for making enquiries at any point of time. This system may help students to stay updated with the college activities.

II. LITERATURE REVIEW

According to Ms. Ch. Lavanya Susanna Et al. A Student chatbot project is developed with the help of a code igniter which is widely called as a php framework. It analyzes the user queries and also perceives user messages. [1]. As per Prof. Ram Manoj Sharma Et al. proposal, a college enquiry chatbot system that was made using AI (Artificial Intelligence) algorithms and included few modules like Online chatbot, Online Notice boards, etc. [2].

P.Nikhila Et al. have collectively designed a chatbot using AIML (Artificial Intelligence Mark-up Language) to make a response to user queries. Here, to customize the Alice bot that could be a chat-bot application supported Alice free code the AIML was used [3].

Payal Jain Et al. has built up a database that consisted of all the related information and also created a web interface (UI) that has two sections. One of them was for basic clients and another was for the admin [4].

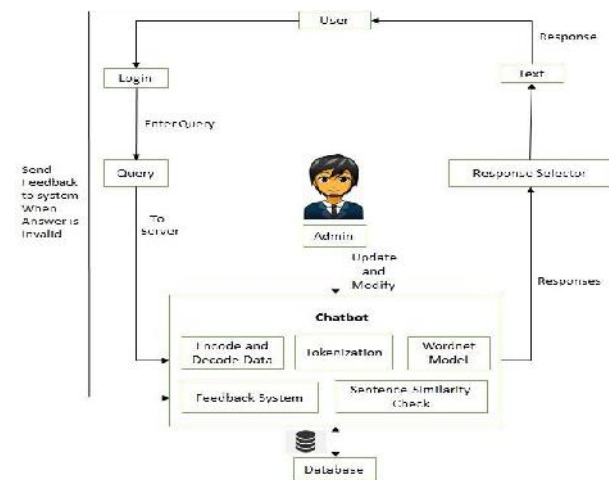
Authors Sagar Pawar, Omkar Rane have developed a UI for which the users have to register before accessing the chatbot. This paper [5] uses the Bigram, sentence similarity score, and retrieval of the matched template to give the response. As per Harsh Pawar Et al. [6] a chatbot was designed by them using the database knowledge. Their proposed system had online enquiry and chatbot system.

They used various programming languages in development. They created a user-friendly graphical user interface to send and receive user responses. In another paper [7], chatbot designed was a hospital appointment system whose goal was to get a doctor’s appointment. That system used a end-to-end gated memory networks model, which was an end-to-end supervised model with automatically learned gating mechanism in order to perform dynamic regulation of the memory interaction.

III. PROPOSED SYSTEM

Once the user asks query, the keywords in the query is detected using WorldNet Algorithm. As the query description can change from one person to another person. The same query may be asked in a different ways by the users. One user asks a query so simply and clearly while another user may request same query in a completely different manner. So it is required to find what is the exact information user seeks to know and to find a correct response for the corresponding user query. The chatbot system firstly removes the stop words from the user input, if they are present in the queries asked by the user. After removing the stop words from the user queries, tokenization and lemmatization process are done. A Student Chabot project could be a retrieval-based chatbot that uses AI concepts to possess conversations with humans. Once ever a user asks any question, the bot can first analyze the request, builds a response and send it back to the utilization. User’s query is first checked in database. If the query is valid then suitable response is given to the user. If the query is invalid then chatbot requests user to ask queries regarding the college. If the users query is not solved by options then chatbot system gives additional dialogue box to write his/her question regarding college. User can ask any number of queries to chatbot system regarding college to send admin mail –id. Chat-bots are motivated by the need of traditional websites to provide a chat facility where a bot is required to be able to chat with user and solve queries. The query is searched in the database. If the response is found in the database it is displayed to the user else the system notifies the admin about the missing response in the database and gives a predefined response to the user.

IV. ARCHITECTURE



The general idea of working of proposed system algorithm is given as follow:

Step 1: Start Step
 2: Enter Query Step
 3: Search Query="College Related FAQ";
 Step 4: if keyword = Keyword in corpus return(response) goto step 6 else return ("Answer Not Found") goto step 5
 Step 5: User suggests an answer for query which was not found so, to send admin mail.
 Step 6: Give the chat mobile number
 step 7 : exit

V. METHODOLOGY

The Bot should be intelligent enough to resolve the queries of freshers, parents, students, and faculty. The college enquiry chatbot is designed using certain algorithms which understands and analyzes the user queries.

This System is basically a web application that provides valid responses to the various queries of the users, which will make use of Natural Language Processing (NLP) and Long Short Term Memory (LSTM) networks, which are a special kind of recurrent Deep Neural Networks (DNN). They have completed building a quite intelligent Chatbot based on NLP and DNN for basic college-related enquiries and admission related queries especially. NLP system needs to understand text, sign, and semantic properly. Many methods help the NLP system to understand text and symbols. They are text classification, vector semantic, word embedding, probabilistic language model, sequence labeling, and speech reorganization.

Step 1: Start.
 Step 2: Get the input query from the user.
 Step 3: The query is pre-processed. E.g. suppose there is this query "what are the project domains for CSE fourth year major projects." So, we are going to remove these stop words like "are", "the" using pre-processing technique.
 Step 4: Fetch the remaining keywords from the query.
 Step 5: Match the fetched keywords with the keywords in Knowledge base, and provide an appropriate response.
 Step 6: Further the Database module is used to call proper services using entity information to find proper data.
 Step 7: The keywords will be matched with the help of keyword matching algorithm.
 Step 8: It returns the query response to the bot.
 Step 9: Chat-bot packages the data into proper response for display by the client.
 Step 10: Exit

VI. CONCLUSION

The proposed system is used to provide response related to user input. This System will give answers to user submitted questions. The goal of our proposed system is to help the students to get information about their college activities and to post their admission-related queries on the go from anywhere, even outside the college. Another main motive is to reduce the workload on the college staff and reduce the response time for a user queries. To make the responses given by the chatbot system more meaningful and accurate the administrator has to train the chatbot system with more information regarding to college and increase the scope of knowledge base. A web-based chatbot system with the combination of Deep Learning based techniques. It had almost accuracy score in giving appropriate responses to the users for their queries. Furthermore we had investigated our college chatbot system design stages and a few different techniques by which the precision of the chatbot system can be made much better. To make the responses given by the chatbot system more meaningful and accurate the administrator has to train the chatbot system with more information regarding to college and increase the scope of knowledge base. Nevertheless, gathering feedback from the potential user can be helpful in developing the college Chatbot system, ultimately servicing the user queries.

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