



**Research Article**

## **CHATBOT BASED ENQUIRY SYSTEM FOR COLLEGE**

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### **ABSTRACT**

A ChatBot aims to make a conversation between both human and machine. The machine has been embedded knowledge to identify the sentences and making a decision itself as a response to answer the questions. The college enquiry ChatBot will be developed using Artificial Intelligence algorithms that analyzes student queries such as date and timing of annual day, sports day, and other cultural activities. The student does not have to personally go to the college for enquiry. Students can use this system for enquiries at any point in time. The knowledge base of ChatBot is already in the database. The chatbot consists of interface that accesses data from the knowledge base. The query of the student is treated as a sentence by the system. Then Naïve Bayes algorithm consists pre-processing, stop word process that divides input sentence as two letters of input. The sentence similarity score will be calculated by matching input sentence with the knowledge base. The higher scored sentence will be more similar to the input sentence. With the help of artificial intelligence, the system answers the query asked by the student. The system replies to the user query using the higher scored sentence. An effective GUI which implies that as if a real person is chatting with the user.

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## **INTRODUCTION**

A chat bot (also known as a talk bot, Bot, chatterbox) is a program which communicate through audio or textual methods. They are often created to simulate how a human would behave as a communicative partner. A college enquiry chatbot is built using artificial algorithms that analyzes student's queries and provide an appropriate response. This System is a web application which provides answer to the query of the student. Students just have to query through the bot which is used for chatting. Students can chat in any format there is no particular format that student has to follow. The System uses the built-in Expert system to answer the query. The answers are appropriate according to user's queries. The User can ask any college-related activities through the system. The student does not have to individually go to the college for enquiry. The System analyzes the query and then replies to the user. The system answers the question as if it is being answered by an individual. By using artificial intelligence, the system answers the query asked by the students. The system replies using a comprehensive Graphical user interface which signifies that a real person is talking to the student. The student just has to sign up himself to the system and has to login to the system. After login user can access the various serving pages.

The bot has various helping pages through which the student can access by asking queries related to college activities. The user can query college-related activities such as the rosters of annual day, sports day, and other cultural activities. This system helps the student to be updated with the current college activities.

### **Related Work**

A.L.I.C.E (Artificial Linguistic Internet Computer Entity) which is an award-winning open source natural language artificial intelligence chat robot which utilizes AIML (Artificial Intelligence Markup Language) to form responses to queries. Alicebot engine and AIML are freely available under the terms of the GNU General Public License (used by

GNU/Linux and thousands of other software projects). The A.L.I.C.E. project includes hundreds of contributors from around the world.

The current system introduces an example-based chat-oriented dialogue system with personalization framework using long-term memory. This system representative chat-bots use simple keyword and pattern matching methodologies. To maintain the quality of systems, generating numerous heuristic rules with human labour is inevitable. The language expert knowledge is also necessary to build those rules and matching patterns. System responses can be modified by applying user-related facts in the long-term memory. A relevance score of a system response is proposed to select responses that include the user-related fact, or frequently used responses. In several

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experiments, they have found that our proposed features contribute to improving the performance and their system shows competitive performance to ALICE system with the same training corpus.

Nowadays, chatbots are used as part of an instant messaging platform like Hike messenger, Apple Siri & Google Assistant and many more for entertaining purpose. As well as used for sales and marketing To get information about live crickets, news report, weather conditions, driving directions, movie times. Chatbot has also be used in Toys. (Hello Barbie is an Internet-connected version of the doll)

**Hike Messenger<sup>[7]</sup>**

Natasha is not just a same old boring bot. She delivers a lot of good info and you can find her in need often. She can tell some basic info regarding movies, books, weather, the meaning of words, and also search Wikipedia for you, that’s not all, she can make your boring moments interesting with jokes, facts, Rajnikant titles etc. What’s more? You can freely chat with her and type her anything, she will try her level best to answer it. Other than that, here’s a detailed list of what you can do with Natasha, and how to do it.

**Apple Siri<sup>[7]</sup>**

Siri is an intelligent personal assistant, part of Apple Inc.'s iOS, watchOS, macOS, and tvOS operating systems. The assistant uses voice queries and a natural language user interface to answer questions, make recommendations, and perform actions by delegating requests to a set of Internet services. The software adapts to users' individual language usages, searches, and preferences, with continuing use. Returned results are individualized.

Siri supports a wide range of user commands, including performing phone actions, checking basic information, scheduling events and reminders, handling device settings, searching the Internet, navigating areas, finding information on entertainment, and is able to engage with iOS-integrated apps.

**Google Assistant<sup>[7]</sup>**

Google Assistant is a virtual personal assistant developed by Google and announced at its developer conference in May 2016. Unlike Google Now, the Google Assistant can engage in two-way conversations. Assistant initially debuted as part of Google's messaging app Allo, and its voice-activated speaker Google Home. After a period of exclusivity on the Pixel and Pixel XL smartphones, it began to be deployed on other Android devices in February 2017, including third-party smartphones and Android Wear and was released as a standalone app on the iOS operating system in May. Alongside the announcement of a software development kit in April 2017, the Assistant has been and is being, further extended to support a large variety of devices, including cars and smart home appliances. The functionality of the Assistant can also be enhanced by third-party developers.

**Hello Barbie<sup>[7]</sup>**

Hello Barbie, from Mattel and ToyTalk, is the first fashion doll that can have a two-way conversation with girls. The doll features speech recognition and progressive learning features that enable girls to engage with Barbie like never before. Hello Barbie features more than 8,000 lines of dialogue, inspires imagination and storytelling, plays more than 20 interactive

games, and tells jokes.

**Proposed Work**

A Proposed system is built using artificial algorithms that take output as queries and understand user’s message. This System is a web application which provides the answer to the query of the student. Users just have to query through the bot which is used for chatting. Users can give input using any format there is no specific format the user has to follow. The answers are appropriate what the user questions. If the answer found to be invalid, the user just needs to select the invalid answer button which will notify the admin of the incorrect answer. Admin can view the invalid queries answer through Query not Found portal via login System allows admin to delete the invalid answer or to add a specific answer to that equivalent question. The User can query any college-related activities through the system. The user does not have to personally go to the college for enquiry. The System analyzes the question and then answers to the user. The system answers to the query as if it is answered by the person. With the help of artificial intelligence, the system answers the query asked by the students. The system replies using an effective Graphical user interface which implies that as if a real person is talking to the user. The user can query about the college-related activities through online with the help of this web application. This system helps the student to be updated about the college activities.

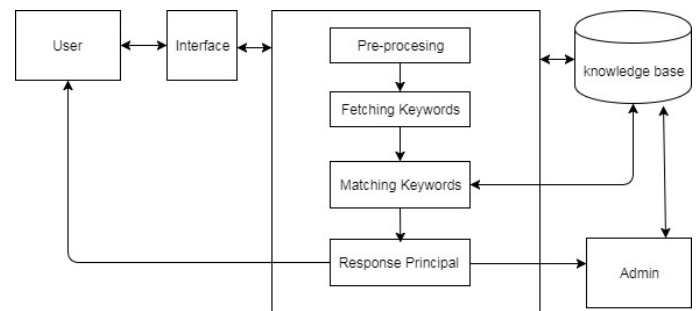


Fig Proposed System Architecture

In above-proposed system architecture, the user can connect with internet application and login method will be done. Then the user can offer input as a query. In pre-processing, given input sentence is split into a word that’s tokenization methodology. on that query it applies stop word method for removing “is, a, the, an” etc. and only fetch the keywords from it like “subject, sem-III, first, year” etc. which keyword matches with the knowledge base and take a decision to pass valid output to the user. If the query isn't available in knowledge base then it'll send an invalid query to user likewise as administrator. The user also sends the feedback to the administrator for Chabot system.

Administrator checks the feedback and also checks invalid queries and update that invalid queries in the knowledge base.

**Implementation**

The college enquiry chatbot will take the query from the user and will give the appropriate answer to the user query. The students will just have to visit the web page of chatbot and interact with the bot to get the answers to their query.

The proposed system will have the following modules:

online notice board

- text notices
- pdf/ html notices can be displayed in the systems
- online chat bot

The query will be answered basis the question and knowledge base automatically.

Because of this no need to have a person to answer the questions and ease for the users to interact with college questions

Users

There will be two types of users: admin and normal

Admin user will be able to see the invalid answers marked by the users and update the system with the right answers and keywords

Following are some images of implemented proposed system

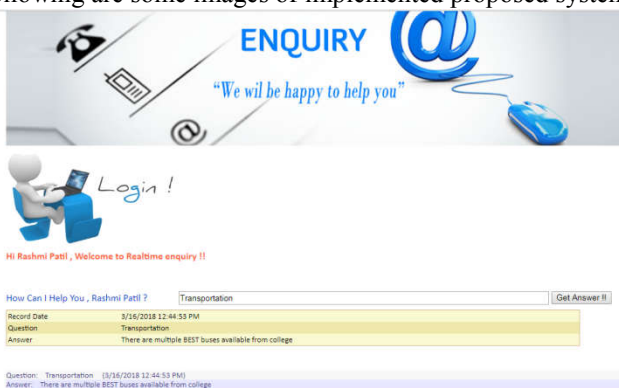


Fig Student enquireweb page

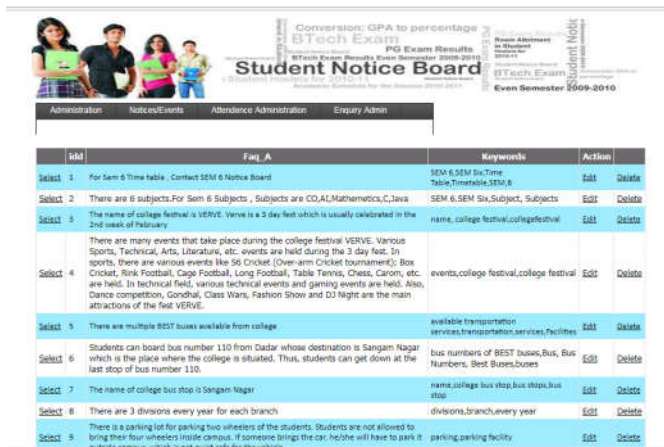


Fig Admin web page for edit information about queries

## METHODOLOGY

The basic algorithm that will be implemented for the working of this proposed system is as follows:

Step 1: start.

Step 2: get the user query. (input)

Step 3: pre-processing of the query e.g. Suppose there is this query "what are the subjects for cse first year" so, we are going to replace these stop words like 'is', 'the' with blank space.

Step 4: fetch the remaining only keywords from the query.

Step 5: match the fetched keywords with the keywords in knowledge base, and provide an appropriate response. The keywords will be matched with the help of keyword matching algorithm.

Step 6: return the query response as an output to the user.

Step 7: exit.

## CONCLUSION AND FUTURE WORK

The proposed system has the main objective is develop an algorithm that will help to search answers related to users input or queries. The need is to develop a database where all the related queries data will be stored and to develop a GUI based on the web. The web interface developed will have two parts, one for simple users and one for the administrator.

In future work of this system, we can include voice-based with text-based queries as input and get output by voice-based, it will give a text output as well.

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