E-HEALTH MEDICAL CHATBOT AND EMERGENCY SYSTEM

Prof. M. U. Karande[1], Rutuja Naphade[2], Vishakha Supe[3], Priyanka Borle[4], Ritali Kinge[5], Harsha Chopade[6]

[1]*Asst. Prof., CSE Department, VBKCOE Malkapur, Maharashtra, India*
[2,3,4,5,6]*Student, CSE Department, VBKCOE Malkapur, Maharashtra, India*

ABSTRACT

Normally Users are not aware about all the treatment or symptoms regarding the particular disease. For small problem user have to go personally to the hospital for check-up which is more time consuming. Also handling the telephonic calls for the complaints is quite hectic. Such a problem can be solved by using medical ChatBot by giving proper guidance regarding healthy living. In this System we develop a web application which provides answer to the query of the user very effectively. Users just have to put their query to the bot which is used for chatting or speck. Then user speech convert into text by using MFCC and the system will use the artificial intelligence algorithms to give appropriate answers to the user. If the answer is found invalid, then some system to declare the answer as invalid can be incorporated. These invalid answers can be deleted or modified by the admin of the system. The user will not have to go to the hospital for enquiring something. Users can use the chat bot to get the answers to their queries. Users can use this web based system for making enquiries at any point of time. This system may help users to stay updated with the doctor's information and nearest hospitals with disease predictions. Users can enter symptom or any query and get answer as disease name and what are the precautions and treatments should be follows. Also view nearest hospitals and get notification on mobile about nearest hospital.

Keywords:-Text or Speech, Current Location, Nearest Location, Data Analysis, Data Mining

1. INTRODUCTION

The system allows computer to communication between human to computer by using natural language processing (NLP).There are three analyses which understand natural language i.e. identification of main linguistic relations is completed to parse subject into object of the sentences. After that description of the texts is done. These mantic interpretation uses knowledge of word meaning Chatbot is an Entity which imitate human discussion in its particular accepted set-up together with a text or vocal language with techniques such as Natural Language Processing (NLP). The aim of this system is to replicate a person's discussion. The development of chatbot application can be done with making a user interface to send input as well as receive response. It is a system that interacts with user by keeping the track of the state of both interaction and recollecting the preceding commands to give functionality. The medical chat-bots can be developed by using artificial algorithms that scrutinize user's queries and recognize it and give reply to related query. A big disease can start from small problems such as headache which feels normal but it may beginning of big disease such as brain tumor. most of the disease can be identified by common symptoms so the disease can be predicted if the patient body is analyzed periodically. The system give response by use of an efficient Graphical User Interface such that If actual person is chatting with the user. The central part of the chat-bots includes MySQL. It is an interactive system solve users query regarding medicine.

1.1 *Problem Definition and Objectives***:-**
In proposed system we are going to develop an algorithm that will be used to identify answers related to user submitted questions. The need is to develop a database where all the related data will be stored and to develop a web interface. The web interface developed will have two parts, one for simple users and one for the administrator. Objectives: -To detect accurate disease type. To get accurate search result in very less time. Project scope & Limitation:-* Our application are applicable for Government and private sectors. * Quite difficult to handle large no of users. Methodologies of Problem solving:-Search nearest hospitals: Users location an get automatically and view nearest hospitals to users based on symptoms of the users. Speech to text: Here user can search using speech and it convert to text using MFCC technique.

2. LITERATURE SERVEY

Medical services are basic needs for human life although they normally have limited resources. Modern technologies are utilized for increasing service capability and decreasing the operation cost. Auto-response system or chatbot, which is widely known in the field of online businesses, can be applied to the medical services. Therefore, the objective of this work is to implement the medical consultant system service by using chatbot Technology. It was implemented based on the information of the symptoms and treatment records gathered from the Doctor Me application. The test results show the capability of the proposed system. Moreover, it can be used as a guideline for future improvement and also a guideline for future study.

Normally Users are not aware about all the treatment or symptoms regarding the particular disease. For small problem user have to go personally to the hospital for check-up which is more time consuming. Also handling the telephonic calls for the complaints is quite hectic. Such a problem can be solved by using medical ChatBot by giving proper guidance regarding healthy living. The medical Chatbots functioning depends on Natural language processing that helps users to submit their problem about the health. The User can ask any personal query related to health care through the chat-Bot T without physically available to the hospital. By Using Google API for voice-text and text voice conversion. Query is sent to ChatBot and gets related answer and display answer on android app. The System's major concern behind developing this web based platform is analyzing customer's sentiment.

There are lot of treatments that are available for various diseases. No human can possibly know about all the medicines and the diseases. So, the problem is that there isn't any place where anyone can have the details of the diseases or the medicines. What if there is a place where you can find your health problem just by entering symptoms or just scanning an ECG or you can check whether the prescribed medicine is supposed to be used the way you are told to. Then it will help us to deduce the problem and to verify the solution. The proposed idea is to create a system with artificial intelligence that can meet the requirements. The AI can predict the diseases based on the symptoms and give the list of available treatments. The System can also give the composition of the medicines and their prescribed uses. It helps them to take the correct treatment. Hence the people can have an idea about their health and can have the right protection.

3. PROPOSED SYSTEM

The purpose of a chat-bot system is to simulate a human conversation; the chat-bot architecture integrates a language model as well as computational algorithm to emulate information chat communication between a human user and a computer using natural language. With the improvement of data-mining as well as machine-learning techniques, better decision-making capabilities, availability of corpora, robust linguistic annotations/processing tools standards like XML and its applications, chat-bot have become more practical in daily life applications such as help desk tools, information retrieval tools, advertising, tools to aid in education, business and E-commerce. The main motive of the paper is to help the users regarding minor health information. Initially when the user's visits the website first registers themselves and later can ask to the bot their queries. The system uses an expert system to answer the queries if the answer is not present in the database. Here the domain experts also should register themselves by giving various details. The data of the chatbot stored in the database in the form of pattern-template. Here SQL is used for handling the database.

4. SYSTEM DESIGN

4.1 System Architecture

This System will be a web application which provides answer to the query of the user very effectively. Users just have to put their query to the bot which is used for chatting or speck. then user speech convert into text by using MFCC and the system will use the artificial intelligence algorithms to give appropriate answers to the user. If the answer is found invalid, then some system to declare the answer as invalid can be incorporated. These invalid answers can be deleted or modified by the admin of the system. The user will not have to goto the hospital for enquiring something. Users can use the chat bot to get the answers to their queries. Users can use this web based system for making enquiries at any point of time. This system may help users to stay updated with the doctor's information and nearest hospitals with disease predictions. Users can enter symptom or any query and get answer as disease name and what are the precautions and treatments should be follows. Also view nearest hospitals and get notification on mobile about nearest hospital.

Fig-1: System Architecture

4.2 Mathematical Model:-

System Description: Let S be the system, and it consist of followings:

S={ I, P, O, Sc, Fc}

where, I= Input

P=Process O=Output

Sc= Success cases Fc= Failure cases

Input: U, A where

$DU=\{$ u1,u2,. .... , un$\}$

U= No of user that register, login and ask question

A= Admin that Update and save database.

Process: Sq, Pq, Ga, Udb, Sdb, LIq, Na

 Where, Sq= Users enter the search query or speck on microcontroller. And it convert users speech into text.

Pq=Process on query and find answer on based on users questions by using Naive bayes algorithm.

Ga=Users get answer of the query. and view nearest hospitals using haversine algorithm and get notification on mobile about nearest hospital.

Udb= Admin can update database means add doctors and hospitals details, add symptom, precautions, and disease names etc.

Sdb=Save Updated Database.

Output: $O=\{$ o1, o2, …, on$\}$

 So, Users get output as a answers of the questions ask by themselves. Track user location after user login and get users input either in text or speech. if user input in text then convert it into text using MFCC technique and search in the dataset symptom that are match with the users and get the precautions and disease names, also view nearest hospitals that can provide treatment about that symptoms and get notification on mobile.

4.3 Result and Analysis: -

Outcome of our system is, Users get output as a answers of the questions ask by themselves. Track user location after user login and get users input either in text or speech. if user input in text then convert it into text using MFCC technique and search in the data set symptom that are match with the users and get the precautions and disease names, also view nearest hospitals that can provide treatment about that symptoms and get notification on mobile.

E-Health Medical Chatbot and Emergency System
Email Address:
Password:

Sign In

Fig-2: User Login

E-Health Medical Chatbot and Emergency System
First Name:
Last Name:
Mobile No.:
Email Address:
Birthday:
Gender: ◉ male ○ female
Password:

Register

Fig-3: New User Registration

E-Health Medical Chatbot and Emergency System
User Login:
Password:

Sign In

Fig-4: Admin Login

John:
    Speak…….   **Ask**
Hi Student I'm Chatbot
Ask Question

Fig-5: Asking query

E-Health Medical Chatbot and Emergency System
John: I have cold and cough issues
Chatbot: Acetaminophen Anticholinerrgies, Non-sedating NSAIDs Aspirin Dextromerthophan Ephedrine Guaifenesin Phenylephrine (Ophthalmic) Pseudoephedrine

Fig-6: User input query

5. CONCLUSION

The implementation of Medical assistant heavily relies on AI algorithms as well as the training data as discussed in this paper. However, it is still in its early stage and levels and faces some challenges; some of which have a direct link to AI were discussed. However, Personalized chatbot does not only faces challenges; it does pose some challenges, as the accuracy of result and practice to the extent that some future is think algorithms and machines could replace most of the jobs doctors do today. Here we get the location of user and send the notification of nearest location to users.

6. REFERENCE

[1] Nudtaporn Rosruen and Taweesak Samanchuen , "Chatbot Utilization for Medical Consultant System ," in The 2018 Technology Innovation Management and Engineering Science International Conference (TIMES-iCON2018)

[2] Mrs. Rashmi Dharwadkar, Dr. Mrs. Neeta A. Deshpande, "A Medical ChatBot," in International Journal of Computer Trends and Technology (IJCTT)–Volume 60 Issue 1 June 2018

[3] Divya Madhu , Neeraj Jain C. J , Elmy Sebastain , Shinoy Shaji , Anandhu Ajayakumar," A Novel Approach for Medical Assistance Using Trained Chatbot" in International Conference on Inventive Communication and Computational Technologies

[4] Lin Ni, Chenhao Lu, Niu Liu, and Jiamou Liu, "MANDY: Towards A Smart Primary Care Chatbot Application," in Internal and emergency medicine, 10(2):171–175, 2017.

[5] V.Manoj Kumar, A. Keerthana, M.Madhumitha, S. Valliammai, V. Vinithasri, "Sanative Chatbot For Health Seekers", International Journal Of Engineering And Computer Science ISSN:2319-7242Volume 5 Issue -03 March, 2016 Page No. 16022-16025

[6] Department of health, "AnamaiMedia," 2016. [Online]. Available: http://multimedia.anamai.moph.go.th/help-knowledge/categories/mom-and-child/.

[7] E. Pratt, "A Primer Artificial Intelligence and Chatbots in Technical Communication – A Primer," pp. 2–9,2017.