A Auto-Diagnostic Medical Chatbot Using Artificial Intelligence

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Abstract

Health care is very important to live a good life. But it is very difficult to consult a doctor when any health problem comes up. The idea is to create a medical chatbot using artificial intelligence, which will diagnose the disease and provide basic details about the disease before consulting a doctor. Medical Chatbot was created to reduce health care costs and improve access to medical knowledge. Some chatbots act as medical reference books to help the patient learn more about their disease and improve their health. The real benefit of chatbot can only be gained when the user is able to diagnose all types of diseases and provide the necessary information. Text-to-text diagnosis involves bot patients engaging in conversations about their medical issues and providing a personalized diagnosis based on their symptoms. Therefore, people should be aware of their health and get proper care.

Keywords: Artificial Intelligence, Prediction, Pattern matching, Disease, Query processing

INTRODUCTION

Artificial intelligence is how any device perceives its environment and acts on the perceived data to achieve the result successfully. This is a study of intelligent agents. Gives the highest power to copy the method .A computer.

Chatbot (also known as talk bot, chatbot, bot, in bot, interactive e-agent or artificial communication entity) is a computer program that manages conversations by audio or text. These programs are designed to provide a clone of how humans chat and thus act as a conversation partner rather than a human. For a variety of practical purposes, such as customer service or data collection, chatbots are available

Used in the communication system. Most chatbots use natural language processing to understand user input and generate relevant feedback, while some general systems search for keywords in the text and provide answers based on matching keywords or specific types. Today, chatbots are part of virtual assistants such as Google Assistant and are accessible from many companies' apps, websites and instant messaging platforms. Non-supportive applications include chatbots used for research, entertainment purposes, and social bots promoting a specific product, candidate, or issue.

Chatbots are computer programs that interact with users who use native languages. The flow is the same for all types of chatbots, but each chatbot specializes in its field of knowledge, which is the human input that fits the chatbot's knowledge base. Chatbot work is primarily based on artificial intelligence.

So using this capability we decided to make some contribution to health information. The high costs of our health care system are often the reason for the patient's lack of engagement after leaving the clinic or hospital. Various surveys in the area have shown that chatbots can provide lower cost health care and better treatment if physicians and patients are in touch after their consultation. Chatbots are used to answer user questions. The number of chatbots in the medical field is very small.

The proposed system provides a text-to-text communication agent who asks the user about their health problem. The user can chat as if he was chatting with a man. To diagnose the disease the boat asks the user a series of questions about their symptoms. It refers to various symptoms to clarify the disease. The exact disease is found based on the user's answer and it indicates the doctor to consult in case of a major illness. The system remembers previous responses and regularly asks more specific questions to get a better diagnosis. The three basic components of our system are
(1) extracting features from user authentication and user interaction,
(2) Accurate mapping of the properties documented in our database and the properties (and potentially obscure) encoded in their associated codes, and
(3) Develop a personalized diagnosis as well as refer the patient to the appropriate specialist if necessary. Some chatbots are already in the medical field, namely Your.MD, Babylon and Florence, but current implementations focus on early diagnosis of patients by identifying symptoms based on pure system initiative questions such as natural communication. Our system is completely focused on analysis

A native language for capturing features, it makes it easier for older, less technical users to communicate their features as well as support the spoken language by adding NLG components. In its current form, our BOT's best application is probably a pre-diagnostic tool used by patients to assess their symptoms before going to the doctor with the BOT's specialist referral feature to select the appropriate care provider.

LITERATURE SURVEY
Simon Hormon discusses current)evidence of the potential and effectiveness of mental health interventions with one another online using text-based synchronous chat. Written Occurring Conversations in the form of web-based mental health interventions are becoming increasingly popular. This review is based on an evaluation of personal synchronous web-based chat technologies. Through the current evidence for the application of this technology, temporary support for the intervention method appears. Interventions that use text-based synchronous communication have shown better results than waiting list conditions and have overall similar results compared to treatments and are at least as good as comparable interventions. However, whether these technologies are cost-effective in clinical practice remains to be seen in future research studies.

Sourav Kumar Mishra says that Chatbot works as a virtual doctor and allows the patient to interact with the virtual doctor. Natural language processing and pattern matching algorithm for the development of this chatbot. (https://www.coursehero.com/chatbot-research-paperpdf/) It was developed using the Python language. Based on the survey given, 80% of the correct answers given by Chatbot were found to be wrong and 20% of the answers were incorrect. From this surve. Chatbot and Outcome Analysis suggest that this software can be used as a virtual doctor for teaching and understanding and basic care.

Divyamadhu proposed an idea in which AI could diagnose diseases based on symptoms and list available treatments. (https://www.zdnet.com/video/ai-could-help-doctors-diagnose-diseases-before-youre-sick/) Before they do any damage, it is possible to guess. Some challenges to the body include research and implementation costs and government regulations for the successful implementation of personalized medicine, which are not specified in the paper.

Hamidullah Qazi describes the development of chatbot for medical students based on the open source AIML ChatterBean. AIML based Chatbot is optimized to convert natural language queries into contextual SQL queries. Samples of a total of 97 questions

Questions were collected and divided into categories based on the question type. The resulting categories are ranked according to the number of questions in each category. Questions 47% of questions asked. Other categories are less than 7%. The system is not specifically designed to support natural communication in chatbots or to provide answers to students' questions.

PROPOSED SYSTEM

The user interaction in the proposed system is a linear design that stretches from symptom capture to symptomatic mapping, where it identifies the relevant symptom, and then determines to the patient whether it is a large or small disease and whether it is large. The patient is referred to the appropriate physician, the doctor details are extracted from the database, and the user is identified from the login details stored in the database.
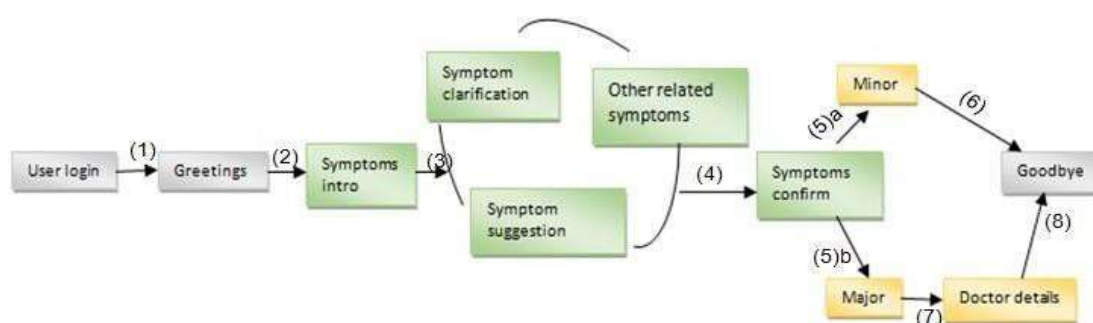
In Fig., the dialog design of the chatbot is illustrated using a finite status graph. To The image above continues with the user login, where the user details are stored in the database. The user can then start his conversation with the chatbot and it will be stored in the database for future reference. Chatbot clarifies user attributes with critical questions and features are structured. The disease is classified into small and large. Chatbot answers whether it is a big or small disease. If it is the main consumer, the doctor will prescribe further treatment along with the details.

get an accurate diagnosis, logic is created for state transitions, natural language construction templates are used and the system starts and receives feedback from the customer. In addition to its congratulations and farewell states, our agent has three main stages of negotiation: basic data collection, symptomatic extraction and diagnosis. Our boat begins

Stop by asking the user's email and password for login and enter a loop of feature extraction states until you receive enough information for a diagnosis. Users have the option of re-entering the loop to talk to the doctor about the second symptoms after receiving their first diagnosis, and users have another option to view their previous chat .
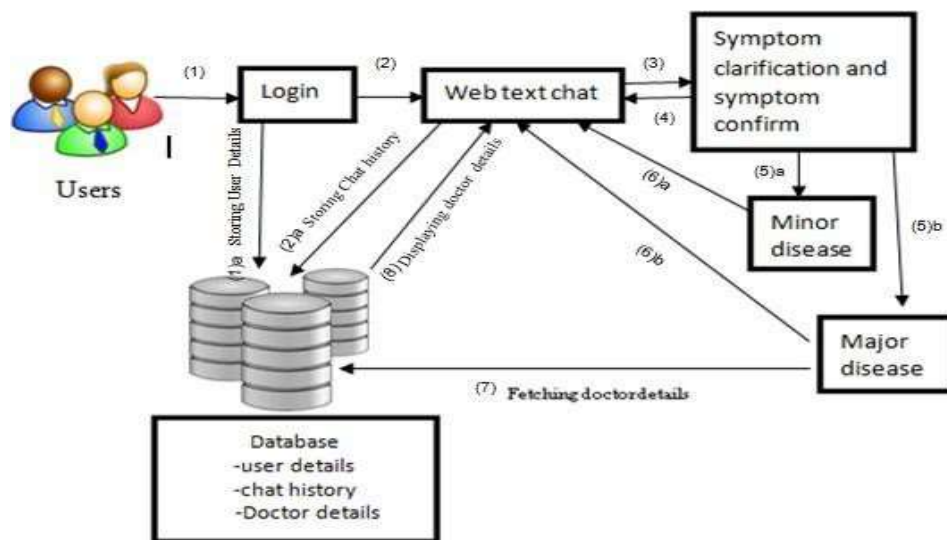
USER VALIDATION AND EXTRACTION OF SYMPTOMS

Verification of user login details takes place here. Properties are extracted using string search algorithms that identify the substrings that represent the properties in the natural language text input. When users specify attributes directly

Cough, fever and nausea "), the system easily recognizes it. And I'm starting to look double. "In this case, the system must capture substrings such as" eyes tired "and" see twice ".

MAPPING EXTRACTED SYMPTOMS WITH TRAINEDDATASETS

Given some extracted substring from the user's input, we generate a list of suggested closest symptoms .We then ask the user to confirm if they have any of the suggested symptoms. Based on that reply few diseases are being shortlisted. Then anther symptom diffrentiate and symptom suggestions are being done by asking the users a series of questions and the mapping of the symptoms to the exact

disease is done.

SPECIFYING THE DISEASE AND REFERRING A DOCTOR

This process carries the list of diseases in the database and each symptom is compared to the symptoms of the common diseases. Next one is checked until a matching one is found. The diseases are shortlisted based on the end users input on the question evaluation. Chat bot display accurate and identified result to the user . The chatbot checks whether the identified disease is a major issue or minor issue based on the conditions built in the chatbot. If it is a major issue the chatbot refers a specialist

to the end user by sending the doctor details .And if it is a minor issue the chatbot specifies the disease and alerts the end user with a first aid or remedy and asks to visit a doctor shortly.

RESULT AND DISCUSSIONS:
The project result is as follows
The user will have text to text communication with the chatbot and get the specific disease and the user can also get their previous chat history through their details which are stored in the database.

The above figure shows how the user text with the chatbot and the accurate resultwill be shown to the user at the end of symptom clarification. Then the user can view their previous chat to know what they have discussed earlier.

CONCLUSION AND FUTURE SCOPE
From reviews of various magazines, it has been confirmed that the use of Chatbot is user friendly and can be used by anyone who knows how to type in their own language in the mobile app or desktop version. Medical chatbot provides an individualized diagnosis based on symptoms. In the future, bottleneck symptom recognition and diagnostic performance could be greatly improved by adding support for more clinical features, such as location, duration, and severity of symptoms, and a more detailed symptom description. The implementation of a personalized medical assistant is highly dependent on AI algorithms as well as training data. Ultimately, the implementation of personalized medicine can save many lives and create medical awareness among the public. As mentioned earlier, the future is the age of messaging apps as people are going to spend more time on messaging app than other apps. Medical chatbots therefore have a wider and wider scope in the future. No matter how far people are, they have this therapeutic conversation. All they need is a

simple desktop or a smartphone with an internet connection. Increasing the use of more combinations of words and database can improve the efficiency of the chatbot so that the medical chatbot can manage all kinds of diseases. Adding voice conversations to the system also makes it much easier to use.

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