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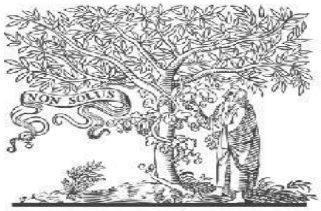

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CHATBOT FOR SELF – DIAGNOSIS USING MACHINE LEARNING

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Abstract
For a healthy existence, medical care is crucial. But, if you have a health issue, it might be quite challenging to get medical help. The suggested approach is to create a medical chatbot that uses AI to analyse the illness and generate relevant information about the ailments that were being discussed with a doctor. To lower medical costs and increase access to medical information, medical chatbots were developed. Some chatbots act as medical guides to educate patients about their conditions and promote better health. If chatbots are able to diagnose various illnesses and provide the necessary information, users will undoubtedly profit from them. Patients can participate in medical analysis through text diagnostic bots that produce tailored analysis reports with references to the symptoms

Keywords: Self-diagnosis, Chatbot, Natural Language Processing, Health care, Diagnosis, Medical advice, Treatment

Introduction

The scientific discipline of machine learning enables computers to learn without explicit programming. One of the most intriguing technologies that has ever been developed is machine learning. The ability to learn is what, as the name suggests, gives the computer a more human-like quality. Today, machine learning is being actively used, possibly in a lot more places than one might think.

Machine learning is the process by which computers figure out how to carry out tasks without being specifically taught to do so. Computers use available data to learn in order to do specific jobs. For straightforward jobs given to computers, it is possible to build algorithms that instruct the device how to carry out all the steps necessary to address the issue at hand; no learning is required on the part of the computer. It can be difficult for a human to manually develop the required algorithms for more complex tasks. In practice, it may prove more beneficial to assist the computer in creating its own algorithm than to have human programmers define each necessary step.

Machine learning uses a variety of techniques to train computers to complete jobs for which there isn't a totally suitable solution. One strategy is to declare some of the right answers as valid when there are many possible replies. The computer can then use this as practice data to refine the algorithm(s) it employs to determine the right answers. For

instance, the MNIST dataset of handwritten digits has frequently been used to train a system for the task of digital character recognition.

LITERATURE SURVEY

1. Professor Joseph Weizenbaum at the Massachusetts Institute of Technology created ELIZA, one of the first chatbots in 1966[3]. To simulate conversation, ELIZA employs pattern matching and replacement techniques. "ELIZA is well known artificial therapist. The bot attempts to rephrase the questions of the client and responds on certain keywords. If no keyword is found ELIZA replies with fixed phrases to keep the conversation going"

2. American psychiatrist Kenneth Colby developed PARRY in 1972.The program imitated a schizophrenic patient. It tries to imitate the sickness. It is a natural language program that mimics human thought patterns.

3. The Turing test refers to the question of whether a computer program could converse with a group of individuals without any of them understanding that their interlocutor was artificial. In 1966, the first chatbot with the name ELIZA was created. Eliza returned the users' statements in the interrogative form, simulating a psychotherapist's activity. Pattern matching and a response selection method based on templates are used by ELIZA. The first chatbot in history, ALICE, was created online and was inspired by ELIZA. Pattern matching was the foundation of ALICE [7]. ALICE and ELIZA were different in that ALICE was designed using the brand-new language AIML devised just for this reason. [7]

4. Since PARRY is thought to have a personality and a better governing framework than ELIZA, it is regarded as being more sophisticated. The Chat-Bots discussed in this literature review, like K-Bot, are likewise based on medical applications. [3] Given the effect that asthma has on overall healthcare expenditures, there is a well-recognized need for a change to proactive asthma care. Traditional clinical settings can be demanding and taxing for clinical practitioners because of the need for regular monitoring of patients' adherence to the pharmaceutical care plan, assessment of environmental triggers, and management of asthma [3]. K-Bot can only treat asthma; it cannot treat any other conditions.

METHODOLOGY

Algorithm/Pseudo Code:

Natural Language processing is a subfield of computational linguistics, artificial intelligence, artificial intelligence, and machine learning. Because computers play an important role in the transmission and acquisition of information, there is a need for computers to understand natural language. NLP-based methods and how they can be approved. for example, Smart phones and other hand-held devices, which make use of the providers of a variety of teaching methods are used to retrieve the text, written in Chinese or in English. The language has been developed, which has an important role to play in the multi-lingual society.

Natural Language Processing (NLP), commonly referred to as learning and linguistics, is a branch of computer science and artificial intelligence that focuses on how people and computers communicate. (e) in a natural language. In the industry, and in academia, there is a need to understand and carry out a variety of different languages and computational linguistics knowledge in

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order to be able to be distributed all over the world. Python has a broad range of the standard-libraries, which are suitable to the running of the computational software programs, and projects. Developers can utilize NLP algorithms for the following tasks:

1. Summarize long passages of text by removing all but the most crucial and central concepts with Summarizer.
2. To create a chat bot, use Google's ParseyMcParseface, a deep learning model for language parsing that employs Point-of-Speech tagging.
   Generate keyword tags automatically from content using Auto Tag, which makes use of LDA, a method for identifying subjects in a body of text.
3. Use named entity recognition to determine the type of extracted entity, such as whether it was a person, location, or organization.
4. Utilize sentiment analysis to determine the tone of a passage of text, ranging from extremely negative to neutral to extremely positive.
5. Use Porter Stemmer or Tokenizer to split up text into tokens and reduce words to their stem or root.

Live Chat

Live chat allows for two-way communication between the user and the doctor, and the patient can get advice from the doctor without having to wait in line or contact with other patients.

The user will check the doctor's availability after the user and the doctor have logged into both tabs for the live chat to function. He can therefore chat with the doctor and have the session if the doctor is online.

Automated Chatbot

Automated chatbot is used when the doctor is not available online, then they can go for the automated chatbot.

The purpose of developing the medical chatbot is to save the time and money in all the situation.

In their busy schedule which leads to avoid to visit hospital so they can use chatbot to get medical queries easily.

The working of automated chatbot here the user will be giving the input.

It will recognize the text based on the keyword. If it is incorrectly recognized again, it will take the input, then it will recognize and predict the disease.

System Implementation

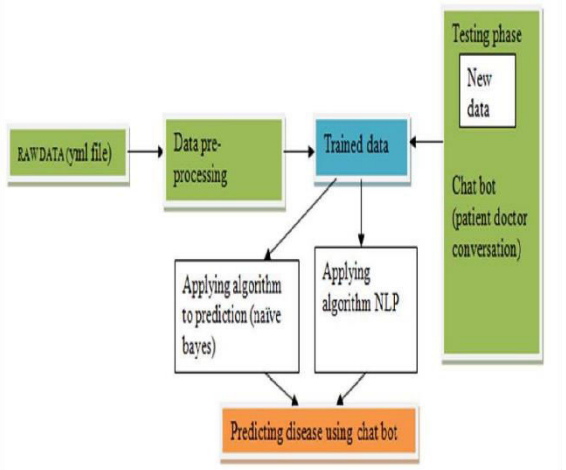

Fig.1: Overall System Architecture

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Results

1. Initially user will interact with the chat bot to get the prescription from the chat-bot.

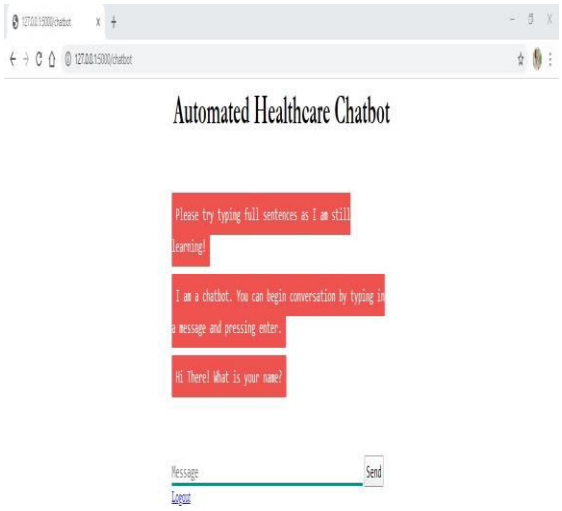

Fig (1): Actual view of the chat bot.

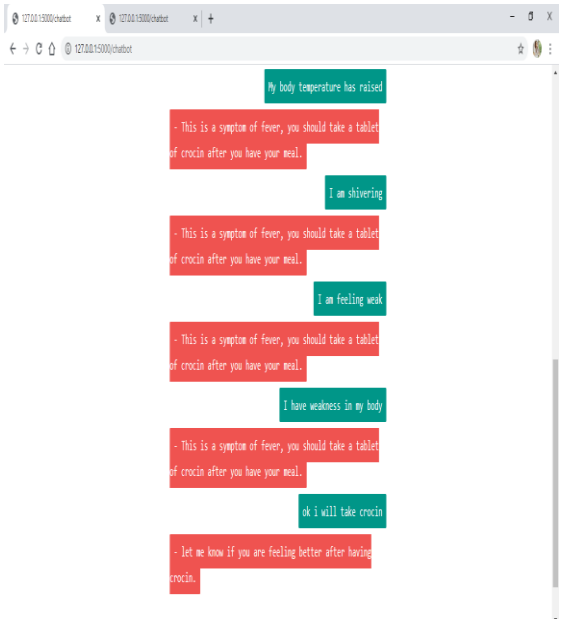

Fig.2: Chatting response of automated chatbot

2. After patient can interact with doctor by authenticate himself using his user id and password as well as doctor also follow the same procedure.

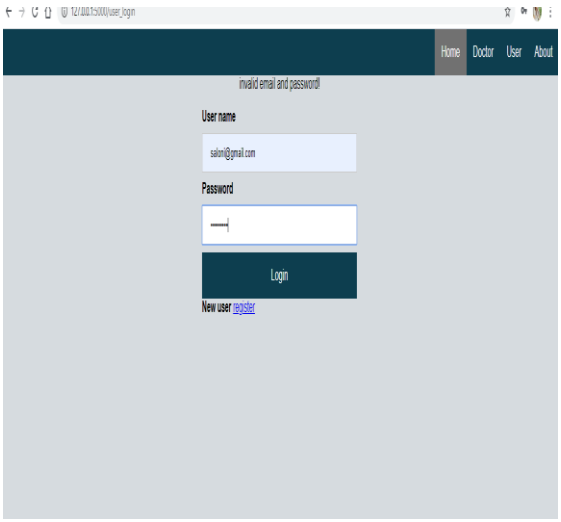

Fig.1: Login credentials

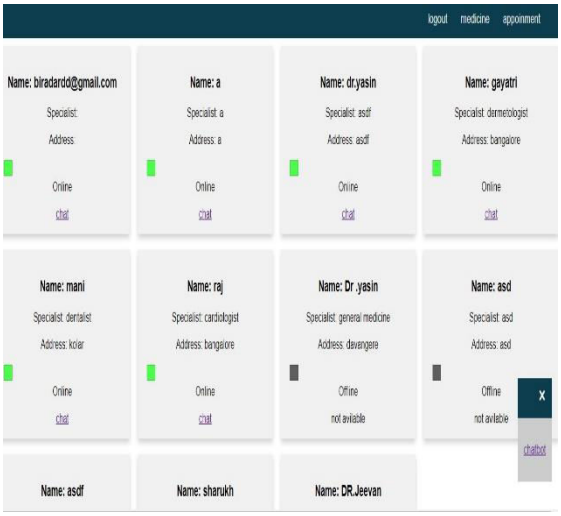

Fig.2: Shows how many doctors are available / active.

Conclusion

A review of what we have come to learn that this system will lead to the desired result. If we use a large data set, which provides a better performance in comparison with the previous one. So, we are going to build a system that can be used in a medical institution or hospital in order to help you, to be free to ask for a medicinal dose of some of the problems with the vote. The system will be the output of the medicine and the API, and to make and to display of all of the drugs

in the name of. With the help of NLP techniques, International Journal of Computer Trends and Technology, as we want to get to a computer, and communicate with users in their terms of use. So, with the help of computer algorithms, as well as the disease-the symptoms of a system that can be used to predict the disease. The user can get related to the response. see this answer for in the analysis. Depending on the disease, its symptoms, naive bayes, and decision tree algorithm that can be used to predict the disease. In order to use the Google API for speech-to-text, and text-voice conversion rate. The Chatbot API and then sends the query to the chatbot, and the corresponding response, and this response, analysis, and display of the response. To get a medicinal product-related information, such as name of the medicinal product, medicine, expiration date, information, history, and the API. When the user selects the control, in the process, the complaint shall be verified by the use of the LP's. The meaning of the words, with the help of a part of speech label, and the Wordnet dictionary, with the help of the sentiment of the analysis. The patient and the physician will have the option to chat to, and if there is an emergency.

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