

## **Self Diagnosing Health Care Chatbot Using Machine learning**

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### **ABSTRACT**

To lead a good and healthy life healthcare is extremely much important. It is very difficult to get the consultation with the doctor in case of any health issues. The proposed idea is to make a medical chatbot using AI which will diagnose the disease and supply basic details about the disease before consulting a doctor. to scale back the healthcare costs and improve accessibility to medical knowledge the medical chatbot is made. Few chatbots acts as reference books, which helps the patient find out about the illness and assists with improving their wellbeing. The user is able to do the important advantage of a chatbot only it can diagnose all quite disease and supply necessary information. A text-to-text diagnosis bot connects patients about their medical issues and gives a customized diagnosis to support their symptoms. Hence, people will have a thought about their health and have the proper protection.

### **INTRODUCTION**

A prosperous society is when its entire people are healthy. It is important to maintain the health if one wishes to be happy. Only a healthy body can have a healthy mind and it has a positive impact on the performance of people. Nowadays, people are less aware of their health. In their busy life, they forget to take suitable measures to maintain their health and are less aware of their health status. In the latest news by TOI, we can see that people give no importance to their health and find it time consuming to undergo check-ups at hospitals. The busy-scheduled life has got no place for health. Most people comprising the working section of the society claim that their hectic schedule gives them no time for periodic medical check-ups and that they

disregard any uneasiness shown by their body until it is too severe.

## **LITERATURE SURVEY**

- Service Based on Emotional Dialogue Analysis and Sentence Generation.
- Chatbot Using a Knowledge in Database Human-to- Machine Conversation.
- A Tool of Conversation Chatbot.

## **EXISTING SYSTEM**

Here the studies are based on to recognize emotions classification using AI methods. The studies train emotions classification models from a lot of labeled data based on RNN, deep learning, convolution neural network. Linguistic interaction is most important in counseling using NLP and NLG to understand dialogues of users. Here the multi-modal approach is used of emotion-recognition. They have collected corpuses to learn semantic information of words and represent as vector using the word vector, synonym knowledge of lexical are collected. In this paper a voice recognition chatbot is developed, if the questions are not understood asked to the bot is further processed using the third party expert-system. The web-bots are created as text-based web-friends, an entertainer for the user. Here they focused on the improved system if the system is not only text-based but also voice-based trained. Here the voice recognition requires a 2 part process of capturing and analysis of an input signal. Server response recognition data retrieval and information output. The server used here is SOAP based on black box approach. The use of expert system allows unlimited and autonomous intelligence improvements.

## **PROPOSED SYSTEM**

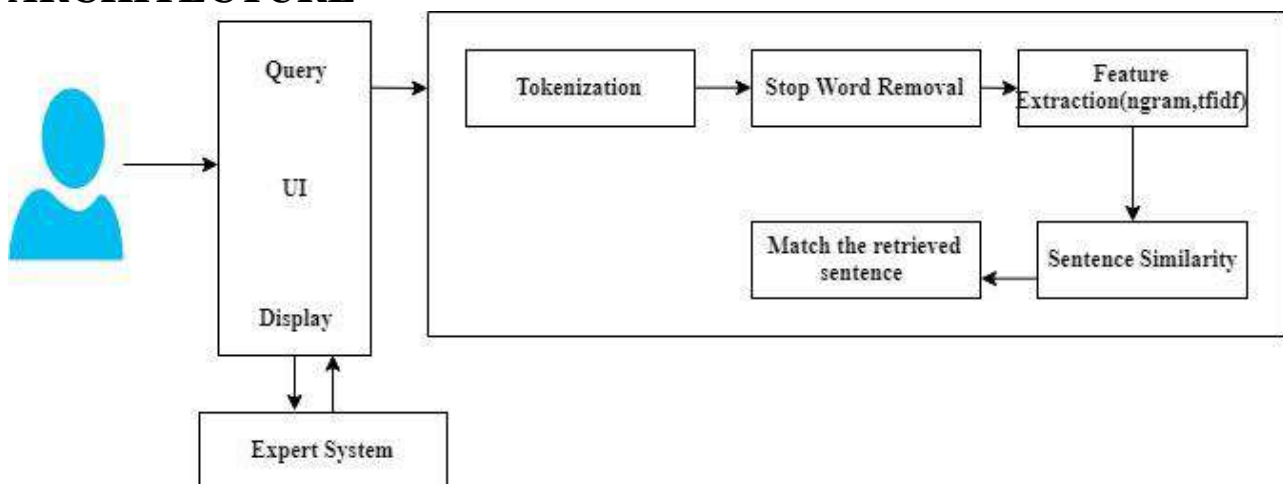
The chat bots are conversational virtual assistants which automate interactions with the users. Chat bots are powered by artificial intelligence using machine learning techniques to understand natural language. The main motive of the paper is to help the users regarding minor health information. Initially when the user's visits the website first registers themselves and later can ask the bot, 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. it shows the user login where the users details will be stored in the database.the user can start chat with the chatbot and it will be stored in the

database for future reference. the chatbot will clarify the user queries with series of question and conformation will be done. the disease will be catagorised whether it is minor or major disease. chatbot will reply whether it is minor or major disease. if it major one doctor details will be dispalyed..

## WORKDONE

For building a chatbot using python, getting its basics and clear idea about NLP (Natural Language Processing). The most reliable chatbot framework is accessible on woebot.ai, dialogflow.com, qnamaker.ai, core.rasa.ai, wit.ai, and botkit.ai. The basic terminologies applied for chatbots are intent, entities and utterances training of bot and confidence score of the bot. As we are operating with python for designing the chatbot we can run it on Anaconda, Jupyter, Notebook or Python itself. We have adopted a 3.7 version of python on the jupyter notebook. Why do we require to understand natural language processing for building a chatbot, the question arises. They are in the field of artificial intelligence which helps the computer to recognize and analyze human language and to implement NLP we should understand Natural Language Understanding(NLU). BLU is the subset of a bigger picture of NLP. We can also create a chatbot without NLP but the ranges will be restricted without NLP. NPL processes the raw data for which it is considered as the chatbot brain, which mugging up clean it and gives appropriate actions.

## ARCHITECTURE



## MODULES DESCRIPTION

### **Matplotlib:**

- Matplotlib is a Python 2D plotting library which produces publication quality figures in a variety of hardcopy formats and interactive environments across platforms.
- Matplotlib tries to make easy things easy and hard things possible.
- You can generate plots, histograms, power spectra, bar charts, error charts, scatterplots, etc., with just a few lines of code.
- For simple plotting the pyplot module provides a MATLAB-like interface, particularly when combined with IPython.
- For the power user, you have full control of line styles, font properties, axes properties, etc, via an object oriented interface or via a set of functions familiar to MATLAB users.

### **Numpy:**

NumPy is the fundamental package for scientific computing with Python. It contains among other things:

- a powerful N-dimensional array object
- sophisticated (broadcasting) functions
- tools for integrating C/C++ and Fortran code
- useful linear algebra, Fourier transform, and random number capabilities
- Besides its obvious scientific uses, NumPy can also be used as an efficient multi- dimensional container of generic data. Arbitrary data-types can be

defined. This allows NumPy to seamlessly and speedily integrate with a wide variety of databases.

- NumPy is licensed under the [BSD license](#), enabling reuse with few restrictions.

### **Pandas:**

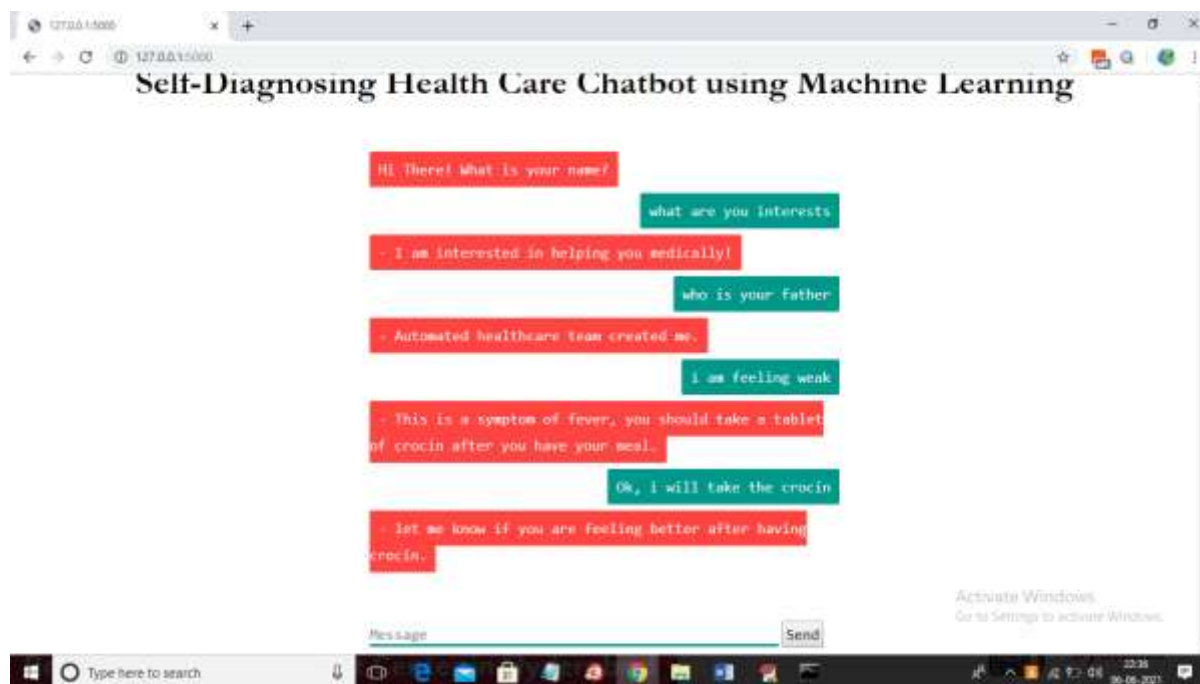
In 2008, **pandas** development began at [AQR Capital Management](#). By the end of 2009 it had been [open sourced](#), and is actively supported today by a community of like-minded individuals around the world who contribute their valuable time and energy to help make open source **pandas** possible.

Since 2015, **pandas** is a [NumFOCUS sponsored project](#). This will help ensure the success of development of **pandas** as a world-class open-source project.

### **RESULTS AND DISCUSSIONS:**



The proposed web application permits clients to join and login to their profiles. The application is incorporated with the chatbot interface where the clients can represent their inquiries and get the arrangements from the bot.



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## PE

A chat bot is a great tool for conversation. Here the application is developed to provide quality of answers in a short period of time. It removes the burden from the answer provider by directly delivering the answer to the user using an expert system. The project is developed for the user to save the user their time in consulting the doctors or experts for the healthcare solution. Here we developed the application using the N-gram, TF-IDF for extracting the keyword from the user query. Each keyword is weighed down to obtain the proper answer for the query. The Web-interface is developed for the users, to the input query. The application is improved with the security and effectiveness upgrades by ensuring user protection and characters and retrieving answers consequently for Future scope of this chat bot is very vast as researchers already mentioned that future era is messaging app, it means people are going to spent more time on the messaging app than other. So by using Chat bot it does not matter how far a person is, the only thing that is required are a simple desktop, tablet and smart mobile etc. The smartness and intelligence of the chat bot

can be increased by conducting more study and increasing the database so that Chabot could answer all type of question about every type of disease. Audio system can also be included in this system to make this Chabot more interactive.

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