

Implementation of Healthcare Chatbot Using Artificial Intelligence

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ABSTRACT

Through chatbots one can communicate with text or voice interface and get reply through artificial intelligence. Typically, a chat bot will communicate with a real person. Chat bots are used in applications such as e-commerce customer service, call centres and Internet gaming. Chatbots are programs built to automatically engage with received messages. Chatbots can be programmed to respond the same way each time, to respond differently to messages containing certain keywords and even to use machine learning to adapt their responses to fit the situation. A developing number of hospitals, nursing homes, and even private centres, presently utilize online Chatbots for human services on their sites. These bots connect with potential patients visiting the site, helping them discover specialists, booking their appointments, and getting them access to the correct treatment.

KEYWORDS: Chatbot, AI, Healthcare.

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I. INTRODUCTION

Through chat bots one can communicate with text or voice interface and get reply through artificial intelligence. Typically, a chat bot will communicate with a real person. Chat bots are used in applications such as e-commerce customer service, call centers and Internet gaming. Chat bots are programs built to automatically engage with received messages. Chat bots can be programmed to respond the same way each time, to respond differently to messages containing certain keywords and even to use machine learning to adapt their responses to fit the situation. A developing number of hospitals, nursing homes, and even private centers, presently utilize online Chat bots for human services on their sites. These bots connect with potential patients visiting the site, helping them discover specialists, booking their appointments, and getting them access to the correct treatment.

An ML model has to be created wherein we could give any text input and on the basis of training data it must analyze the symptoms. A Supervised Logistic Regression machine learning algorithm can be implemented to train the model with data sets containing various diseases CSV files. The goal is to compare outputs of various models and suggest the best model that can be used for symptoms in realworld inputs. Data set contains CSV file having all diseases compiled together. The logistic regression algorithm in ML allows us to process the data efficiently. The goal here is to model the underlying structure or distribution of the data in order to learn more from the training set.

In any case, the utilization of artificial intelligence in an industry where individuals' lives could be in question, still starts misgivings in individuals. It brings up issues about whether the task mentioned above ought to be assigned to human staff. This healthcare chat bot system will help hospitals to provide healthcare support online 24 x 7, it answers deep as well as general questions. It also helps to generate leads and automatically delivers the information of leads to sales. By asking the questions in series it helps patients by guiding what exactly he/she is looking for.

II. BLOCK DIAGRAM

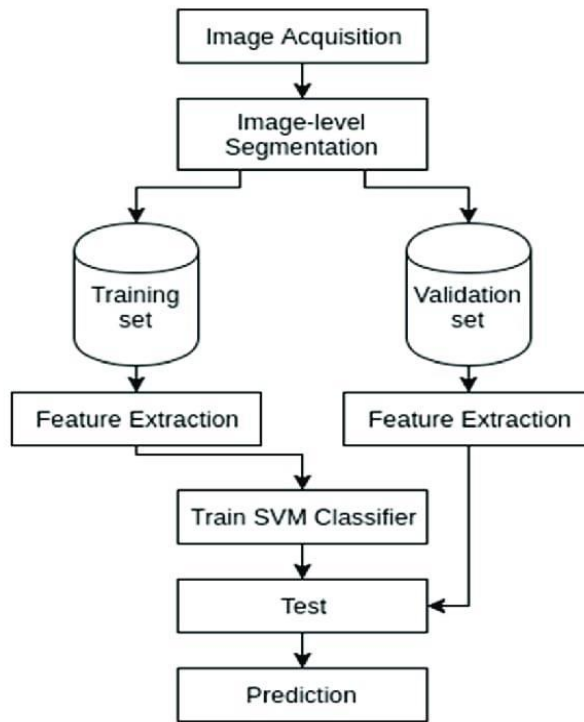
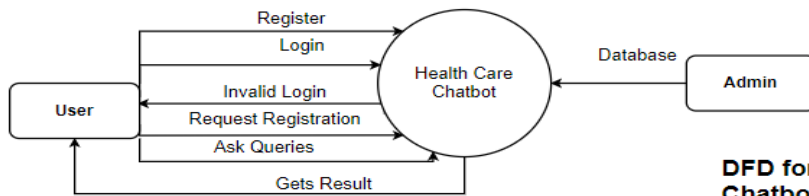


Figure 1:Block diagram



DFD for HealthCare Chatbot

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 Aryan Vetrekar - 27

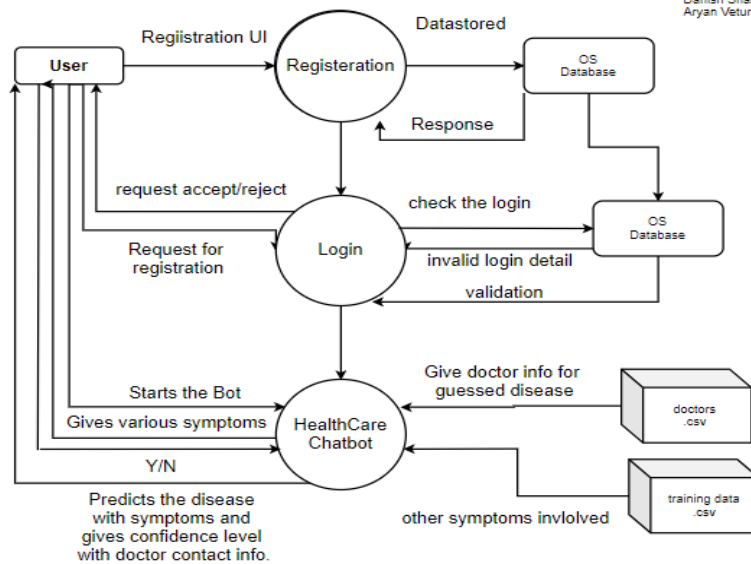


Figure 2:Case diagram

III. TECHNICAL SPECIFICATIONS



Figure 3:Raspberri pi

The Raspberry Pi 3 Model B is the latest version of the \$35 Raspberry Pi computer. The Pi isn't like your typical machine, in its cheapest form it doesn't have a case, and is simply a credit-card sized electronic board -- of the type you might find inside a PC.



Figure 4:Raspberri pi camera module

The Camera v2 is the new official camera board released by the Raspberry Pi foundation. The Raspberry Pi Camera Module v2 is a high quality 8 megapixel Sony IMX219 image sensor custom designed add-on board for Raspberry Pi, featuring a fixed focus lens. It's capable of 3280 x 2464 pixel static images, and also supports 1080p30, 720p60 and 640x480p60/90 video. It attaches to Pi by way of one of the small sockets on the board upper surface and uses the dedicated CSI interface, designed especially for interfacing to cameras.



Figure 5: HDMI cable

HDMI stands for High-Definition Multimedia Interface, a standard for simultaneously transmitting digital video and audio from a source, such as a computer or TV cable box, to a computer monitor, TV or projector. Originally developed by a consortium of electronics manufacturers, it has been widely adopted with almost all televisions and computer monitors supporting the interface.



Figure 6: USB connector

Also known as USB standard A connector, the USB A connector is primarily used on host controllers in computers and hubs. USB-A socket is designed to provide a "downstream" connection intended for host controllers and hubs, rarely implemented as an "upstream" connector on a peripheral device.



Figure 7: SD card

Secure Digital, officially abbreviated as SD, is a proprietary non-volatile memory card format developed by the SD Association (SDA) for use in portable devices. The standard was introduced in August 1999 by joint efforts between SanDisk, Panasonic (Matsushita) and Toshiba as an improvement over MultiMediaCards (MMCs), and has become the industry standard. The three companies formed SD-3C, LLC, a company that licenses and enforces intellectual property rights associated with SD memory cards and SD host and ancillary products.

IV. RESULT AND DISCUSSION

Step 1:

After running the code in the python idle, if the code contains no error. Then it will direct to the account login page. It looks like follows

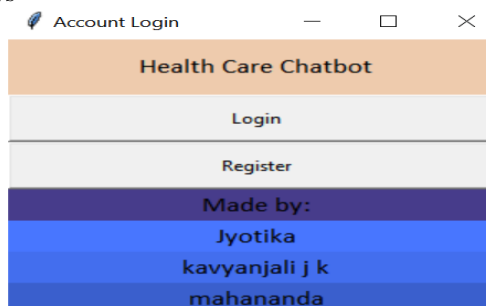


Figure 8: Account login page

Step 2:

If the user is new to the chatbot, then registration should be done, if the user is already registered then user should go with the login by entering the credentials.

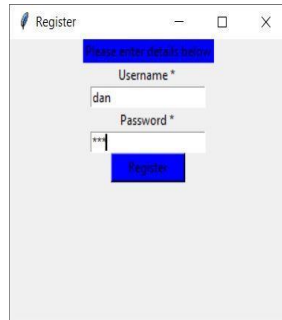


Figure 9: Register page

Step 3:

As soon as the user login into their account, if the login is success, it will display “click here to proceed”. Then the Q/A diagnosis will be displayed it is as follows.

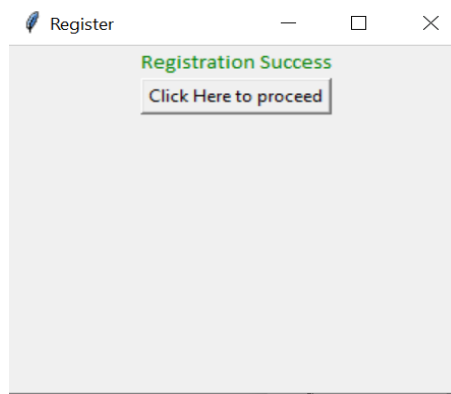


Figure 10: Registration success

Step 4:

Now, the user need to click on the start on the chatbot, it wil start giving symptoms if the displayed symptoms match with the user, then the user should click “YES” otherwise “no”. till the symptoms get match. The user should go on clicking “NO”.

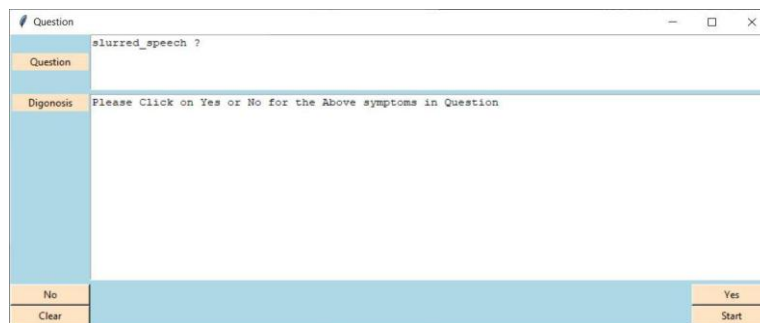


Figure 11: Chatbot

At a certain time, the symptoms of user matches with the symptoms, then the chatbot will prescribe the disease with which a user is suffering. It will provide the doctors appointment URL then , by clicking on that URL the user can consult their respective doctors.



Figure 12: Output of chatbot

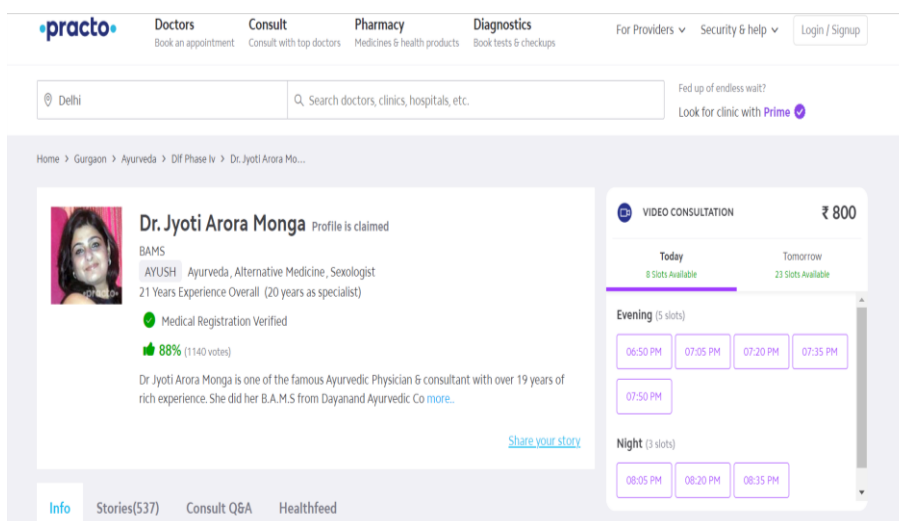


Figure 13: Doctor appointment

If the symptoms do not match with the chatbot, the chatbot provides a common physician appointment

Step 5:

While logging out of the chatbot the system will capture a photo of the user and it will be stored in the database. If the user login again into the chatbot it will recognise the user by giving information that the user is already registered.

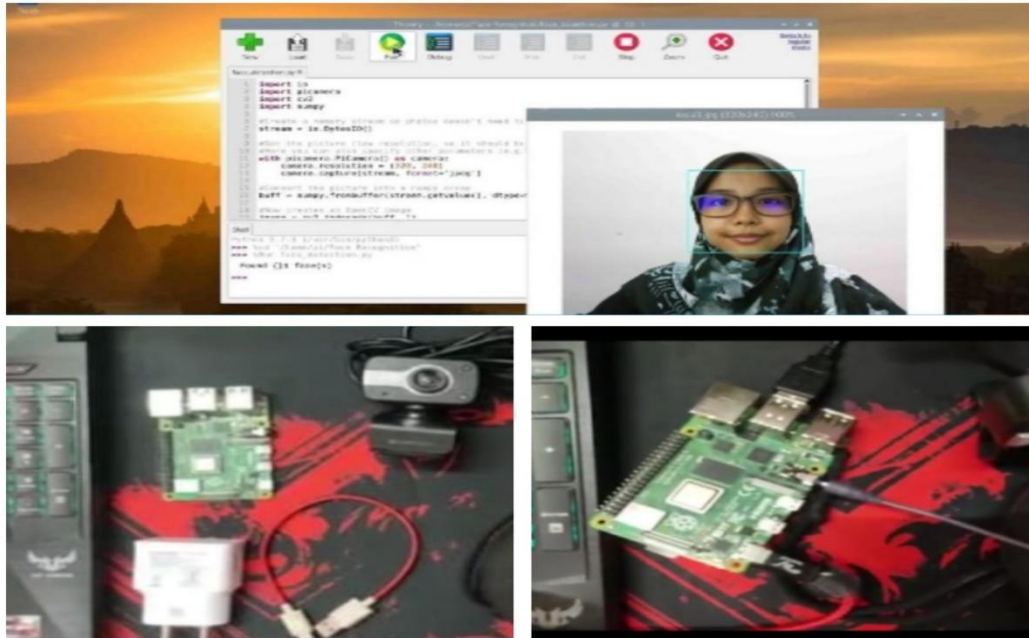


Figure 14: Final result

V.CONCLUSION

Thus, we can conclude that this system giving the accurate result. As we are using large dataset which will ensures the better performance. Thus we build up a system which is useful for people to detect the disease by typing symptoms.Chat bots are a thing of the future which is yet to uncover its potential but with its rising popularity and craze among companies, they are bound to stay here for long. Machine learning has changed the way companies were communicating with their customers. With new platforms to build various types of chat bots being introduced, it is of great excitement to witness the growth of a new domain in technology while surpassing the previous threshold.

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