

# USE OF CHATBOT BY ARTIFICIAL INTELLIGENCE IN TREATMENT OF HEALTH PROBLEM

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**Abstract**— An application program which interact with human in their day to day life are known as chatbot. It is a kind of gate way for the service. It is develop by using algorithms of machine learning. Artificial Intelligence plays a key role in interaction with human. Artificial provide potential in order to perform intelligent and work correctly to the computer. For the operation of chatbot natural language is use for communication with the user. Though chatbot works fully on the basis of artificial intelligence. So utilizing this technique can be very much beneficial for the medical field by information processing.

The objective of the present research work is to appoint a artificial system which can talk in natural language. The natural language and algorithm of the machine are combinely use in the present proposed system and to provide a casual chat with human being. The full function of this system depends on natural language process ( NLP ). The user can ask any question regarding his/her health and the chatbot try to provide most suitable answer by analyzing their health condition and prescribing them their most suitable medicine and precautionary measure.

The important vision behind this research is to provide a web platform to the user to solve their health related query.

**Keywords**— chatbot, artificial intelligence, NLP, XML, Medical problem, SVM

## 1. INTRODUCTION

Chatbot is software that can communicate with the user in order to gather information. This software can run on both on windows and mobile based platform such as android and iOS by using internet. It has the ability to engrossing and beguile. The input in the bot for conversation will always be in the natural language. This will allow user to ask their question easily and in their specific area and

on their important health issue. The output of the chatbot will be from database that is predefined and will be from the asset.

The aim of the present work is to establish a communication between user of bot and health care worker by providing the user their response as early as possible. By the development of this system it will establish a question and answer platform where people can find their solution regarding heath problem rather than hunting the relevant document of their problem on web. This system is developed by making it user interface only for sending and receiving message. The system when interact with any user and keep the record track of the user interaction. Algorithm are used for the development of this bot that interpret the user question and identify the problem and provide its solution. Generally major health problem start with a small health problem as pain in the body which is very common in day to day life but it can lead to a serious health issue such as lowering of uric acid or increase in the cholesterol level which can lead to heart problem.

So in this system disease are identified on the basis of symptoms occurring in the body and then patient is analyzed on regular basis. MYSQL is introduced in the middle portion of the system and by this system properly respond to the users question by graphical user interface

### The component of chatbot are:-

**Intents**- the conversation between system and user start with queries and intents help in making the queries meaningful by making categories for different users.

**Entities**- it is a parameter on which the queries made by user were analyzed and find out keyword on the basis of that response were extracted.

**Response**- after entities process the system develop the response for the user and then display it to user.

This system while interacting with user provide a fully real experience and read the human message pattern by the help of artificial intelligence markup language which is based on XML (extensible markup language)

## 2. ARCHITECTURE OF SYSTEM

Chatbot is a kind of room where words are exchange between user and bot. user asks their question with bot in natural language and bot reply to their question. A bot will guide the user after accessing their symptoms that what problem they are facing and what urgent care and precaution they are needed. If required it can also set an appointment with the doctor and also put a check-up the patient on regular basis.

The architecture of the system establish a bridge between computer and human to have informal conversation regarding health issue by using natural language. The system works on the pattern of exchanging the message between user and bot. where user put a message request to bot and after analysing it bot reply to user. The aim of this system is to detect the symptoms of the disease and provide the best solution by taking initial health care measure. By this user will get the solution of their health problem and health monitoring as well without visiting to hospital or doctor. This service can avail at 24 hours.

The architecture of the present chatbot is included by the support vector machine algorithm (SVM). It is a substantial classifier which split the two classes which are to be use in the program. The SVM can be classify as the test image which has the largest distance until the training algorithm end.

The algorithm makes a system which monitor the test image is in its own class or into other class. The SVM primary requirement is the data. It require a large amount of data in order to decide its own boundary and its operational cost is too high. The component in the architecture of the system which initiate the process of chat bot is user. Which interact with the system initially and put their query as a message to the system.

The steps followed by the whole system in order to complete the whole process are:-

- 1) Inserting the query in the system by the user.

- 2) The analyzation of user query by the chatbot for e.g. what dosage of painkiller must a adult take?
- 3) Picking up of keyword from the user query.
- 4) Storing of the extracted information in the system by the chatbot.
- 5) Processing of desired command which has to be deliver to user.
- 6) The response which has to be deliver to user are fetch from the database and display it as output.

## 3. PROPOSED SYSTEM

The chatbot is a retrieval based model of NLP which is only designed for user interface and for collection of data from user and to provide suitable response. The conventional bot are designed for the communication with the client and provide best suitable solution. Identification of keyword is first pre-processed of the input query.

Working of the chatbot are as follows:-

- 1) The proposed system is a simple, very interactive and real time chat system.
- 2) Facilitate the user to login register on the chatbot and logout as well.
- 3) User input- we can input question about anyone's medical problem.
- 4) User after proposing question one can get the details of dosage of medicine and precaution in text form.
- 5) Machine learning algorithm is used by the system to predict the diseases of which symptoms are occurring.
- 6) On the basis of symptoms that are occurring the bot will also suggest doctor and book appointment.

## 4. CONCLUSION

- The aim behind the development of the software is to provide a bridge between the user and the chatbot to find out the disease on the basis of occurring symptoms.
- Testing data and training data plays key role in the operation of this chatbot.
- The symptoms input by the user where within the dataset and the chatbot response to these symptoms were also from these data set.

- The conversation that took place between chatbot and the user to share their information freely within the system.
- The implementation of this system can rescue many lives and make very easy to access medical facility.

## REFERENCES

- [1]. "Chatbot: Artificially Intelligent Conversational Agent", Ayesha Shaikh, Geetanjali Phalke, 2nd International Conference on Communication and Electronics System (ICES), Milla Mutiwokuziva, Melody Chanda, Prudence Kadebu, Addlight Conference Location-Coimbatore, India, 2017.
- [2]. "Long Short-Term Memory Networks for Automatic Generation of Conversations", Tomohiro Fujita, 18th IEEE/ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD), Tomohiro Fujita, Wenjun Bai, Changqin Quan, 26-28 June 2017, Location-Kanazawa, Japan, 2017.
- [3]. "A Neural-network based Chat Bot", Milla Mutiwokuziva, Melody Chanda, 7th International Conference on Intelligent Systems, Modelling and Simulation (ISMS), Bayu Setiaji, Ferry Wahyu Wibowo, 25-27 Jan 2016, Bangkok, Thailand, 2017.
- [4]. "Example-based Chat-oriented Dialogue System with Personalized Long term Memory", Jeesoo Bang, Hyungjong Noh, International Conference on Big Data and Smart Computing (BIGCOMP), 9-11 Feb 2015 Conference Location-Jeju, South Korea, 2015.
- [5]. "A Neural Conversational Model", Oriol Vinyals, Quoc V. Le, 2015
- [6]. [https://www.cs.cornell.edu/~cristian/Cornell\\_Movie-Dialog\\_Corpus.html](https://www.cs.cornell.edu/~cristian/Cornell_Movie-Dialog_Corpus.html)
- [7]. <https://medium.com/@BhashkarKunal/conversational-chat-bot-using-deep-learning-how-bidirectional-lstm-machine-learning-38dc5cf5a5a3>
- [8] "AI Based Chatbot System With Long Term Memory" Shruti Katkade, Urjita Kerkar, Pravin Bhilare, Manish Gupta, Payel Thakur Assistant Professor, IJESC, December 2019
- [9] M. C. Raja and M. M. A. Rabbani, "Combined analysis of support vector machine and principle component analysis for ids," in IEEE International Conference on Communication and Electronics Systems, 2016, pp. 1–5.
- [10] S. Aljawarneh, M. Aldwairi, and M. B. Yassein, "Anomaly-based intrusion detection system through feature selection analysis and building hybrid efficient model," Journal of Computational Science, vol. 25, pp. 152–160, 2018.
- [11] K. Graves, Ceh: Official certified ethical hacker review guide: Exam 312-50. John Wiley & Sons, 2007.
- [12] R. Christopher, "Port scanning techniques and the defense against them," SANS Institute, 2001.
- [13] S. Staniford, J. A. Hoagland, and J. M. McAlerney, "Practical automated detection of stealthy portscans," Journal of Computer Security, vol. 10, no. 1-2, pp. 105–136, 2002. [14] E. Gerhards-padilla and F. Fkic, "Intrusion Detection in Tactical Multi-Hop Networks," 2009. [15] S. Robertson, E. V. Siegel, M. Miller, and S. J. Stolfo, "Surveillance detection in high bandwidth environments," in DARPA Information Survivability Conference and Exposition, 2003. Proceedings, vol. 1. IEEE, 2003, pp. 130–138.