



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJIRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 12, Issue 11, November 2023

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.423

 9940 572 462

 6381 907 438

 ijirset@gmail.com

 www.ijirset.com

Healthcare Virtual Assistant Using NLP

Snehal Awachar¹, Priyanka Chougule², Sampada Jadhav³, Pratiksha khaire⁴, Shikha Sharma⁵

Department of Computer Engineering, Trinity Academy of Engineering, Pune, India¹⁻⁵

ABSTRACT: One of the most significant domestic issues facing in our country is health care. Healthcare is crucial to a healthy start in life. However, it can be very challenging to see a doctor if you have any health concerns. The plan is to use natural language processing, a branch of artificial intelligence, to develop a healthcare chatbot that can perform basic medical functions like disease diagnosis. The purpose of the healthcare chatbot is to lower healthcare costs and increase accessibility to medical information. Certain chatbots function as medical reference books, educating patients about their conditions and promoting better health. A healthcare chatbot can only be beneficial to the user if it can diagnose any type of illness and provide the relevant data. The system offers text or voice assistance, so the user can communicate in his own comfortable language. A bot will identify the type of disease based on the user's symptoms, connect them to a doctor, and recommend foods based on what kind of food they should eat. People will be aware of their health and equipped with the appropriate protection as a result. Chatbots are programs that combine artificial intelligence (AI) and machine learning (ML). Speech can be analysed using Natural Language Processing (NLP) techniques, such as the Natural Language Toolkit (NLTK) for Python. By building an engine that can produce responses that are appropriately human-like, intelligent responses can be found. Healthcare chatbots, which offer immediate answers to medical questions, have become important instruments for enhancing patient engagement. Patients and healthcare systems can communicate effectively thanks to chatbots' ability to comprehend and produce text that sounds like human language.

KEYWORDS: Artificial Intelligence ,Natural Language Processing , Healthcare, Chat- bot Natural Language toolkit

I. INTRODUCTION

A healthcare chatbot is an AI-powered virtual assistant designed to provide medical information, support, and guidance to users. These chatbots use Natural Language Processing (NLP) and artificial intelligence to engage in conversations with individuals, assisting them with various healthcare related tasks. A healthcare chatbot is a specialized type of chatbot designed to provide information, support, and assistance related to medical and healthcare matters. These chatbots utilize Natural Language Processing (NLP) and artificial intelligence to interact with users and offer a range of healthcare services, including

: symptoms tracker. Chatbots are designed to mimic human conversations as closely as possible in order to give the impression that the user is speaking with a real person. In order to receive inputs and respond to them, chatbots are usually designed with a user interface. They can be trained to comprehend and reply to user inquiries in a number of contexts, including the medical industry.



II. METHODOLOGY

- 1. Tokenization :** Tokenization is used in Natural Language Processing which splits the paragraphs and sentences given by the user into small unit or words so that it can be more easily give meaning.
- 2. Stop Word :** As stop words have low level information so we remove them from the sentences so that we can give more focus on important words.. It is also used to delete the words with no specific meanings such as an, a, or the. this step is applied to take less processing time by chatbot.
- 3. Feature extraction based on N-gram TFIDF :** It is characteristic decrease process in the document. it can upgrades speed and accuracy of the document. also extract the frequency of the keyword in the document.

III. SYSTEM DESIGN

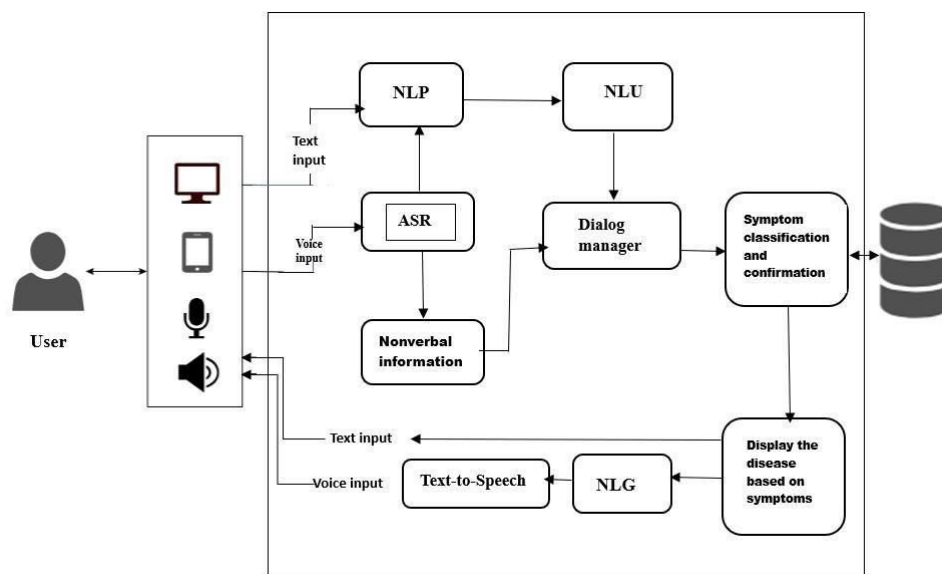


Figure 3.1: System Architecture

User can Start communicating with chatbot as it is User friendly and store the data in the database. First of all user can give input to the chatbot via various ways such as voice or text user gives text input to the bot that text input is processed with NLP(natural language processing).In NLP for text, some techniques and algorithms used are Tokenization ,stop word ,TF-IDF etc. After this process the input which is in text format it should be convert into a structure format for computers to understand the text and this can be done using NLU(natural language Understanding). If the user gives input via Voice or speech then here ASR is used by chatbot to understand the input .Here when user speak to the device the ASR(Automatic Voice Recognition) create a wave file of that words then it can clean the wave file by removing background noise and normalizing the volume. Further by analyzing it the filtered wave is broken down into words and arrange them into a sequence and uses statical probability to determine the whole word and make complete sentences .here ASR understood user words and respond back in meaningful way. next dialog manager accepts the input from the ASR and NLU and interact with external sources.it can control the flow of dialogs. The chatbot will clarify the users symptoms with some of questions and then symptoms will be confirmed .If the disease is major it can suggest doctor near by you and if disease is minor it display the disease based on symptoms and also provides food suggestions that means which food you have to take more to recover the disease. This can be done using NLG(natural Language Generation) as it work reverse of NLU it can generate logical response which converts into natural language so that human can easily understand. If the input is in voice message then it can gives response in voice message and if it is in text format it respond in text format.



IV. RESULT (EXPECTED OUTCOME)

A healthcare chatbot using NLP can improve patient engagement, provide instant responses to medical queries, offer personalized health advice, and streamline administrative tasks, ultimately enhancing overall healthcare efficiency and patient satisfaction.

V. CONCLUSION

Chatbot is great tool for conversation language between human and machine. The application is developed for obtaining a fast response from the bot which implies with none delay it provides the correct result to the user. Chatbot provides personalized diagnosis supported symptoms. This project is developed for the user to save the user time in consulting the doctors or experts for the healthcare solution. Here we developed the chatbot using Natural Language Processing which will give answers of users question in their understandable language.

ACKNOWLEDGEMENT

The authors thank Trinity Academy of Engineering for their support and guidance.

REFERENCES

1. [https://www.ijraset.com/research-paper/healthcare chatbot using artificial intelligence.](https://www.ijraset.com/research-paper/healthcare-chatbot-using-artificial-intelligence)
2. <https://ieeexplore.ieee.org/document/9197833>
3. <https://www.researchgate.net/publication/340678278> A Smart Chatbot Architecture based NLP and Machine Learning for Health Care Assistance
4. Building a chatbot for healthcare using NLP Bruce Kevin, Brikesh Vikin, Manju C Nair
5. Mrs Rashmi Dharwadkar1, Dr.Mrs. Neeta A. Deshpande, A Medical ChatBot,
6. International Journal of Computer Trends and Technology (IJCTT) – Volume 60 Issue 1 June 2018
7. <https://www.researchgate.net/publication/344983576> Chatbot for Healthcare System Using Artificial Intelligence
8. https://ijirt.org/master/publishedpaper/IJIRT151926_PAPER.pdf



INNO SPACE
SJIF Scientific Journal Impact Factor
Impact Factor: 8.423



ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

9940 572 462 **6381 907 438** **ijirset@gmail.com**



www.ijirset.com

Scan to save the contact details