

MediBot For Symptoms-Driven Disease Prediction and Treatment Suggestions

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Abstract: To promote awareness regarding healthcare for underprivileged and inactive individuals globally, post-pandemic scenarios such as COVID-19 have led to hesitancy in seeking medical attention for minor ailments like fever and cold. This study presents a groundbreaking solution: the Medibot, which offers disease prediction based on symptoms and provides treatment recommendations through text and audio input and output. The Medibot assists users anytime, anywhere with its 24/7 services, saving time. Utilizing Deep Learning, it is capable of making decisions akin to humans and is also cost-effective for users.

Keywords— “Health care”, “MediBot”, “Diseases prediction”, “Treatment recommendations”, “Deep learning”, “Cost-efficient”

1. INTRODUCTION

Traditional methods of managing Health care can be managed by the MediBot, MediBot is an automated chat robot design to answer users frequently asked questions, earlier natural language processing techniques were using to design this robot but its accuracy of giving correct answer was less and now due to Deep Learning algorithms accuracy of giving correct answer increase, so here using python deep learning project we are building CHATBOT application to answer users' questions. To implement this technique first we train deep learning models with the train data (all possible question's answers) and whenever users give any question then application will apply this test question on train model to predict exact answer for given question.

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 [6]. E-health: The use of electronic information and communication technology to offer health care when health care practitioners and patients are not in direct touch and their engagement is mediated by electronic means [3,5]. This

emerging trend of the society warrants leveraging chatbot-based technology in the health sector too. Hence, our study proposes the use of a medical chatbot also referred to as a "virtual doctor" which is employed using a suite of machine learning algorithms and data mining techniques [1].

Medical chatbot has a high impact on the health culture of the state. It has improved reliability and is less prone to human errors. Today's people are more likely addicted to internet but they are not concerned about their personal health. They avoid hospital treatment for small issues which may become a major disease in future. This proposed idea solves this problem. This idea focuses on creating a chatbot which is free of cost and available throughout the day. The facts that the chatbot is free and can be accessed wherever the user is, be it their working environment, prompt the user to have it and use it. It saves the overhead involved in consulting specialized doctors [6]. The Medibot can help users by text or voice input of symptoms it will predict disease and suggest treatment by text and voice output.

2. LITERATURE SURVEY

In the research paper titled "Health Assistant Bot a Personal Health Assistant for The Italian Language" by Marco Polignano, F. Nardacci, Andrea Iovine, Cataldo Musto, Marco De Gemmis, Giovanni Semmeraro (2020). proposed a system to create a Telegram bot assists sufferers by recognizing the patient's situation, locating the right surgeon to and in the supervision of medication and breath metrics and raising the patient's awareness of pertinent symptoms and ailments. The techniques used are Natural Language Processing, Machine Learning (Random Forest, Naive Bayes, Logistic Regression and Multilayer Perceptron) and PostgreSQL database [3,5].

Innovations in healthcare and education have been sparked by the emergence of artificial intelligence (AI) and natural language processing (NLP) technology. Various studies have explored the potential of chatbots, powered by AI, to revolutionize medical consultation, education, and healthcare management [2].

Repetitive Neural Arrange (RNN) are a sort of Neural Arrange where the output from the past step is bolstered as input to the current step. Its employments the same parameters for each input because it performs the same assignment on all the inputs or covered up layers to create the yield. In this may construct calculations to create the computer naturally analyze the given information conjointly make it get it human dialect. In this, basically utilize content acknowledgment utilizing profound learning. Profound learning calculations are used to improve the capability of a chatbot. The most center of the survey is to execute Medi bot utilizing both deep learning and neural systems [4].

The limitations include enhancement of the database by adding more data, recognition of the images sent by the user, inclusion of voice recognition, sentiment analysis of the patient. The conclusion states that unlike previous chatbots that focused on areas other than cancer the said chatbot entirely focused on cancer. Patients could acquire cancer-related knowledge by participating in an interaction with just this cancer bot [3,7].

The chatbot will begin addressing the patients with respect to their side effects and problems they are enduring and suggest an effective method to decrease the malady or give the medication concurring to the malady client suffering. Deep learning could be a subset of machine learning in artificial insights that has systems able of learning

unsupervised from information that's unstructured or unlabeled. Moreover, known as deep neural learning (or) deep neural network.

The proposed strategy can utilize profound learning calculations to extend the capabilities of computers and by improving it can get it what people can do, which incorporates discourse and content acknowledgment. In this will utilize text-text in Medi bots to contact the patients and educate the chatbots to prepare common dialect content It examines around preparing common dialect utilizing Repetitive Neural Arrange (RNN).

3. METHODOLOGY

We chose the deep learning as the systematic review methodology. A total of four databases were searched, including Acm library, Jetir, SpringerLink and the IEEE Xplore Digital Library. Healthcare Importance: Access to healthcare is crucial for a good quality of life, yet consulting a doctor for health issues can often be challenging and time-consuming.

Proposed Solution: This proposes the development of a healthcare chatbot utilizing Natural Language Processing (NLP) techniques, a subset of Artificial Intelligence (AI), Deep learning, The chatbot aims to diagnose diseases and provide basic medical information to users.

Cost Reduction and Knowledge Accessibility: The primary goals of the proposed healthcare chatbot are to reduce healthcare costs and improve accessibility to medical knowledge. Similar to a medical reference book, the chatbot empowers users to better understand their diseases and improve their health.

User-Friendly Interface: The system offers (text or voice) assistance, allowing users to interact in their preferred language. By analyzing user symptoms, the chatbot provides disease diagnosis, suggests suitable doctors, and offers food recommendations tailored to the user's condition.

Chatbot's are generally used to respond quickly to users. Chatbot's, a common name for automated conversational interfaces, present a new way for individuals to interact with computer systems. Traditionally, obtaining an answer to a question from a software program involves using a search engine or completing a form. A chatbot enables users to ask questions as if they were conversing with a human. There are many well-known voice-based chatbots currently available in the market: Google Assistant, Alexa and Siri.

Technological Foundations: Developed using Python, with the support of tools like NLTK, TensorFlow, Kera's, and Django, the healthcare chatbot harnesses the capabilities of NLP, deep learning to understand user queries and deliver human-like responses efficiently.

Our Proposed System:

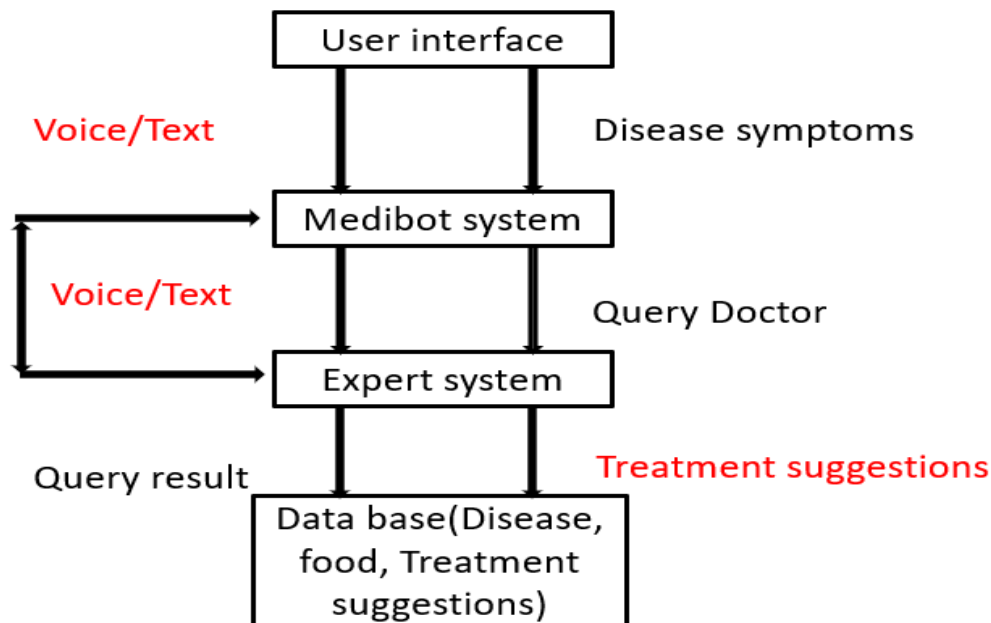


Fig1: block diagram for proposed system

Chatbot can be depicted as computer program that can chat with individuals utilizing manufactured insights. Chatbots are for the most part utilized to reply rapidly to clients. Chatbots, a common title for mechanized conversational interfaces, display another way for people to connected with computer frameworks. Customarily, to urge an address replied by a computer program includes employing a look motor or filling out a shape. A chatbot permits a client to basically inquire questions within the same way that they would address a human. There are numerous well-known voice-based chatbots as of now accessible within the advertise:

Google Collaborator, Alexa and Siri. Chatbots are as of now being embraced at a tall rate on computer chat platforms. Expert Guidance, Voice assistance, Accurint Infection Identification-Deep learning (DL), Scalability and User-Friendly Interface-Django, ML, Time Savings, Cost-Effective Healthcare.

A chatbot can be utilized anyplace a human is collaboration with a computer framework. These are the ranges where the quickest appropriation is occurring. In our proposed framework the client can chat with the bot with respect to the inquiry through (voice or content). The framework employments an expert system to reply the inquiries. Client can to see the accessible specialists for that specific illness. This framework can be utilized by the different clients to urge the guiding sessions online. The information of the chatbot put away within the database within the frame of pattern-template. Bot will give analgesics and food suggestions which means which nourishment you have got to require based on the infection. Moved forward Openness to Restorative Information.

ADVANTAGES OF PROPOSED SYSTEM:

- Reducing wellbeing care taken a toll
- Save the client time
- Do not go to clinic for even any little issue
- Offers 24/7 Benefit
- Upgrades Client Encounter
- Taken a toll Productive
- Made strides Openness to Therapeutic Information.
- Master Direction.
- Voice help.
- Accurint Malady Distinguishing proof.
- Versatility and User-Friendly Interface.
- Cost-Effective Healthcare.

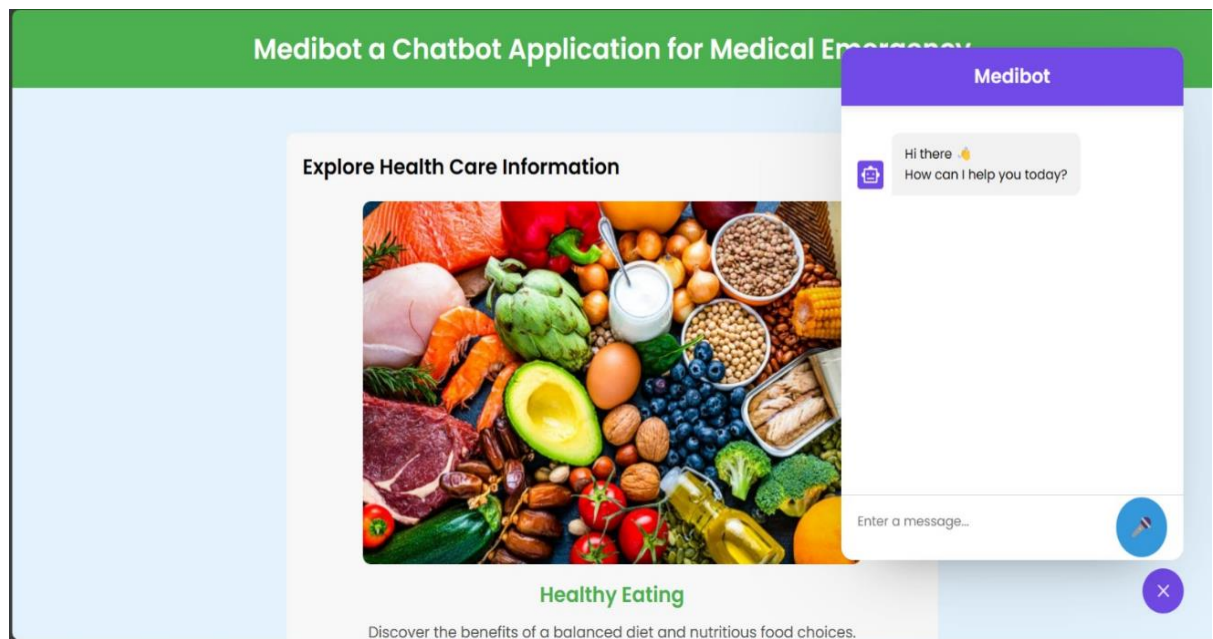


Fig 2:Medibot

Fig 2: represents the interface of the Medibot it can be help user by text/voice assistance.

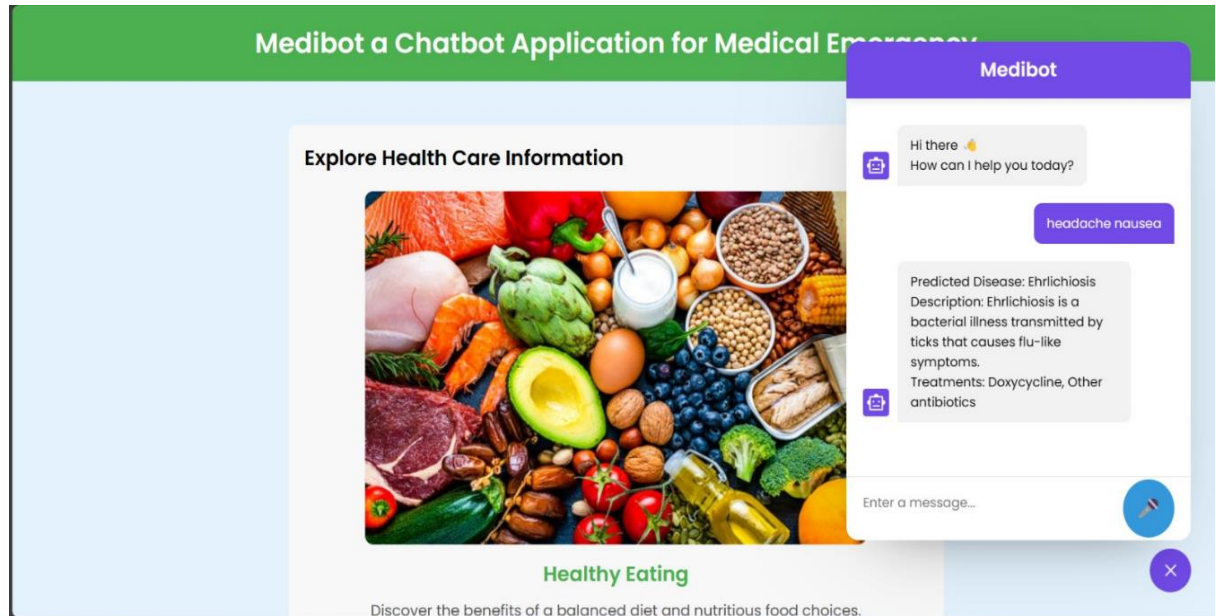


Fig 3:Medibot output

Fig 3: represents the Medibot responding to user symptoms by predicting disease and suggesting treatment to user.

4.CONCLUSION AND FUTURE SCOPE:

CONCLUSION:

The core objective of this Project is to raise awareness about health among individuals. In today's fast-paced world, many people exhibit a tendency to neglect their health and avoid consulting doctors when they fall ill. This behavior underscores the critical need for innovative solutions to empower individuals to assess their health status independently. Thus, the implementation of a chatbot serves as a revolutionary tool, offering individuals the ability to diagnose illnesses without the need for a doctor's consultation. Acting as a virtual doctor, the chatbot allows users to input their symptoms, which are then analyzed to provide personalized healthcare recommendations. The dataset underpinning the system contains extensive information on diseases and corresponding healthcare protocols, ensuring accurate and reliable guidance.

Integrating audio chat functionality into the chatbot system presents several distinct advantages. Firstly, it enhances accessibility for individuals with visual impairments or limited literacy levels, ensuring inclusivity and broadening the user base. Additionally, audio chat streamlines the interaction process, particularly in scenarios where users may find it challenging to articulate their symptoms through text input. By enabling users to verbally express their concerns, the chatbot facilitates a more natural and efficient communication channel, potentially expediting the diagnosis and treatment process.

Furthermore, audio chat fosters a more engaging and intuitive user experience, closely resembling human-to-human interaction. This human-like interaction promotes user trust and confidence in the chatbot's recommendations, ultimately contributing to better health outcomes. Overall, the incorporation of audio chat functionality not only enhances accessibility and convenience but also enriches the user experience, reinforcing the overarching goal of promoting health awareness and empowering. It is vital for individuals to take proactive steps toward their well-being.

FUTURE SCOPE:

Based on the system development and extensibility in future can also implement face recognition to users and also interact with doctors in case of a patient's emergency for treatment.

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