



Interactive Healthcare Advisor Model AI Chatbot

¹Dr.S.Brindha, ²Ms.K.Sudha, ³Mr.M.Pranav, ⁴Mr.R.Gokulakannan, ⁵ Mr.N.Noufal

¹HeadoftheDepartment, ²Lecturer, ^{3,4,5}Students

^{1,2,3,4,5}Department of Computer Networking

^{1,2,3,4,5}PSG Polytechnic College, Coimbatore, India

Abstract— The Artificial Intelligence keeps growing, new technologies will keep coming in the market which will impact our day-to-day activities, and one such technology is Virtual Assistant Bots or simply Chatbot. Chatbot have evolved from being Menu/Button based, to Keywords based and now Contextual based. The most advanced among all of the above is contextual based because it uses Machine Learning and Artificial Intelligence techniques to store and process the training models which help the chatbot to give better and appropriate response when user asks domain specific questions to the bot. The idea is to create a medical chatbot that can diagnose the disease and provide basic details about the disease before consulting a doctor. This will help to reduce healthcare costs and improve accessibility to medical knowledge through medical chatbot. The chatbot are computer programs that use natural language to interact with users. Our project focuses on providing the users immediate and accurate prediction of the diseases based on their symptoms. Chatbot can play a major role in reshaping the healthcare industry by providing predictive diagnosis. The appointment system that allows patients or any user to easily book appointments online with doctors. It is a web-based application that overcomes the problems of managing and scheduling appointments as per the patients need. The task of manually assigning appointments to patients based on their availability can sometimes become quite tedious for the compiler or the doctor themselves. Thus, the project provides an efficient solution where the user can see different available booking slots, select the preferred date and time. Spaces already reserved will be marked in yellow and will not be available to anyone else for the duration specified. The system also allows users to cancel reservations at any time.

Keywords—Chatbot, Healthcare, Artificial Intelligence, Appointment system, Virtual Assistant.

1.INTRODUCTION

The aid of Artificial Intelligence, we can now provide health care services to individuals at their convenience at reasonable prices. One of the biggest blessings we possess is a healthy body. A healthy body and enhanced quality of life is something each one of us looks up to. The primary focus of this paper is to provide these services to fulfill the above mentioned purpose.

It is difficult to imagine our lives without high tech gadgets because they have become an essential part of our lives. Therefore the field of Artificial Intelligence is prospering due to the various applications of it in the research field. Disease prediction is one of the main goals of the researchers based on the facts of big data analysis which in turn improves the accuracy of risk classification based on the data of a large volume.

E-healthcare facilities in general, are a vital resource to developing countries but are often difficult to establish because of the lack of awareness and development of infrastructure. A number of internet users depend on the internet for clearing their healthcare based queries. We have designed a platform for providing online medical services to patients with a goal to provide assistance to healthcare professionals.

The user can also seek medical guidance in an easier way and get exposure to various diseases and diagnosis available for it. In order to make communication more effective, we have implemented a chatbot for disease prediction. Chatbot are the human version of software that is based on AI and uses Natural language processing to interpret and accordingly respond to the user. This study proposes the disease prediction chatbot using the concepts of Natural language processing algorithms. The prediction is carried out using the Stochastic Gradient Descent with Nesterov Accelerated Gradient.

For a doctor checkup, he/she must go to the hospital and wait for doctor to become available. Patients also have to wait in line when making an appointment. If a doctor cancels an appointment for an urgent reason, the patient has no way of knowing that the appointment has been canceled unless or until they show up at the hospital. With the rapid development of mobile communication technology, mobile phone applications can be used to overcome such problems as and the inconvenience caused to patients.

Android based online medical appointment app contains two modules. A module is an application designed for patients that includes a login screen. Patients must register with before logging into the app. Once logged in, patients can select a hospital and view hospital details. Patients have the possibility to select a doctor from the list of doctors and can consult the doctor's contact details. A patient can request an appointment at the date/time of their choice. The selected date/time slot will be retained and the patient will be notified that has been added successfully.

II. LITERATURE REVIEW

An application of counseling chatbot, which provides conversational service for mental health care based on emotions recognition methods and chat assistant platform. This application doesn't consider the user's psychiatric status through continuous user monitoring. In this text-based healthcare chatbot can be designed to effectively support patients and health professionals in therapeutic settings beyond on side consultations. It does not have face to face care and where THCB are likely to fail. This paper reports a primary care chatbot system created to assist healthcare staff by automating the patients intake process.

In this paper they did not include more disease and also a symptom synonym thesauri also should be produced. This provides a text-to-text conversational age that asks the user about their health issue. The user can chat as if chatting with a human. The bot then asks the user a series of questions about their symptoms to diagnose and gives suggestions about the different symptoms to clarify the disease. Doesn't give detailed information No features such as duration, intensity of symptoms etc.,

Proposing a new system where patients can easily book appointments online and doctors can consult and manage them. Here, patients book appointments online based on the availability of doctors and their time availability. Doctors, on the other hand, can extend or reduce their working hours depending on the number of patients arriving that day.

Patients can easily access hospital server nodes. Here, patients can communicate with doctors about their symptoms. Physicians can list and track their patients who are geographically dispersed and provide diagnoses as needed.

III. PROPOSED SYSTEM

In our system the user can interact with the chatbot through text and chat bot will interact using voice and text manner. With respect to the users queries, the bot identifies the Query if user chatting with the chatbot. According to the diseases of the user, bot gives suggestions for the disease and also prescribe specialist doctors. This system can be used by multiple users at a time without any lagging using Stochastic Gradient Descent (SGD) with Nesterov Accelerated Gradient.

The proposed system consists of two panels: Doctor and Patient. Users will first need to download the app and install on your mobile devices. After installation, this application will remain permanently on the device until the user deletes it or it will uninstall it. The patient will have to register in the application for the first time. During registration, the patient receives a user name and password. The patient can use this username and password to log into the app each time they use it. After logging in, the patient will have to choose the type of filtration. Filtering is done on two bases: Regional and Special. After selection filter type, a list of doctors will be displayed.

The patient can choose a specific doctor and view his profile. So can the patient view the doctor's schedule and search for an appointment at his convenience. The patient then submits a request for appointment. The doctor can either accept or decline the appointment. The database will be updated accordingly and the patient will get a confirmation message. The complement of this system is that the patient receives a notification 2 hours before his own appointment. This will be very useful if the patient tends to forget the appointment.

The duration a patient waits from the given time of their schedule to the time that they must actually receive the service is known as direct waiting time. The patients use this technique and waste much waiting time just by standing in queue at the registration counter to make sure a successful registration of the appointment has been made with a certain doctor.

IV. SYSTEM ARCHITECTURE

Initially the chatbot ask How can I help, one major Query that they are facing and period of facing that symptom, or description. In the next step the chatbot ask the specific symptom the user is facing. for example, type fever given exact solution. Next the bot Data Set Query extract from user chat User I/P text Compare the Query with Dataset Stochastic Gradient Descent (SGD) Predict Detail or Description are give will ask some series of symptoms, and user have to answer in " ; Firstname & " ; or " ; Lastname & " ; manner.

Stochastic Gradient Descent (SGD) is a Supervised learning technique that can be used for both classification and Regression problems, but mostly it is preferred for solving Classification problems. It is a tree-structured classifier where, internal nodes represent the features of a data set branches represent the decision rules and each leaf node represents the outcome.

In a Decision tree, there are two nodes, which are the Stochastic Gradient Descent (SGD). SGD Neurons are used to make any decision and have multiple branches, whereas neuron are the output of those decisions and do not contain any further branches. The decisions or the test are performed on the basis of features of the given data set. Algorithm asks set of question to user and accordingly it arrives at a solution. It predicts the disease and gives necessary precautions based on it.

Decision nodes are used to make any decision and have multiple branches, whereas Leaf nodes are the output of those decisions and do not contain any further branches. The decisions or the test are performed on the basis of features of the given data set. Algorithm asks set of question to user and accordingly it arrives at a solution. It predicts the disease and gives necessary precautions based on it.

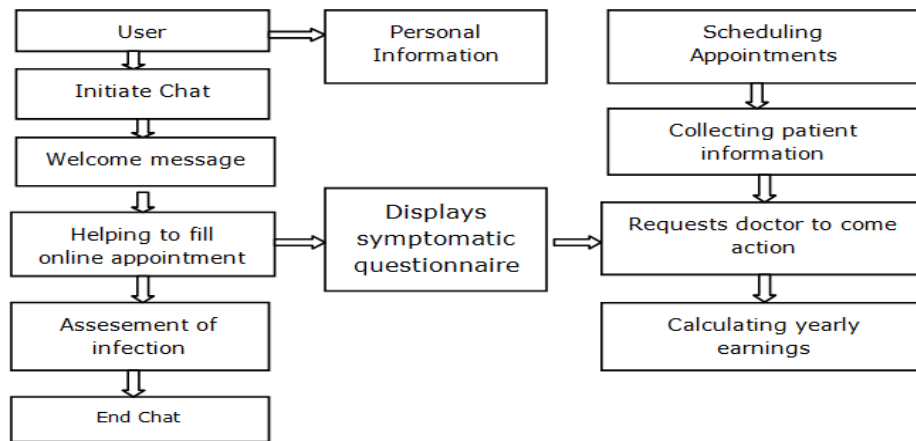


Figure1:Block diagram of AI chatbot

The architecture is structured to allow users to use a laptop computer system, a desktop computer system, and a mobile phone as a web browser to access the reservation system. A client-server architecture was used and we used a thin client-server. The medical appointment booking system has two components: server and client, which run in the browser. In the client approach, almost all the processing work was done on demand on the server side, and the client's job was to display data and information on the screen. In a thin client-server architecture, the client is a web browser. This architecture was used because with it, users will not need to install any software on their computers, they expect a standard web browser, which often comes with most PC operating systems and almost all current standard mobile phones. Clients would also not need any powerful PCs; users can use any computer with a web browser such as laptop/notebook, mobile phone and desktop computer.

V. CONCLUSION

A Chatbot 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 AI, virtual assistant 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 the questions.

VI. REFERENCE

- [1] K. Oh, D. Lee, B. Ko and H. Choi, "A Chatbot for Psychiatric Counseling in Mental Healthcare Service Based on Emotional Dialogue Analysis and Sentence Generation," 2017 18th IEEE International Conference on Mobile Data Management (MDM), Daejeon, 2017, pp. 371-375. doi: 10.1109/MDM.2017.64
- [2] Du Preez, S.J. & Lall, Manoj & Sinha, S. (2009). An intelligent webbased voice chat bot. 386 - 391.10.1109/EURCON.2009.5167660
- [3] Bayu Setiaji, Ferry Wahyu Wibowo, "Chatbot Using a Knowledge in Database: Human-to- Machine Conversation Modeling", Intelligent Systems Modelling and Simulation (ISMS) 2016 7th International Conference on, pp. 72-77, 2016.
- [4] Dahiya, Menal. (2017). A Tool of Conversation: Chatbot. INTERNATIONAL JOURNAL OF COMPUTER SCIENCES AND ENGINEERING. 5. 158-161.2017.