

# Medical Chatbot

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**Abstract:** Healthcare is extremely vital to guide an honest life. However, it's terribly tough to get a consultation with the doctor for each unhealthiness. In associate emergency scenario, immediate facilitate must always be offered. The projected plan is to form associate application with a medical chatbot exploitation Machine Learning which will diagnose the malady and supply appropriate Medical instructions & precautions in case of Accidents. To reduce the value of consulting the doctor anytime and to boost the medical data of the patient, the chatbot is made. The patient's symptoms area unit foretold by pattern matching. The map works with facilitate of Google Maps API the doctors can even read and update the medication profile of the patient through this application so patient doesn't ought to carry the written prescription all the time.

**Keywords:** Chatbot, Health.

## 1. Introduction

A Chatbot could be a system that may move with human users with linguistic communication. The large quantity info data knowledge} that's obtainable on the web permits Chatbots to supply correct and economical information supported the user's necessities. The projected Medical Chatbot will move with the users, giving them a sensible expertise of chatting with a Medical skilled. It retrieves keywords from the initial messages to understand the doable medical issues that the user has, supported their input. There are a unit few Medical Chatbots that exist already, however they are doing not give users with medication for any malady however connect them with a Medical QA Forum and show them similar inquiries to their symptoms that doctors might have antecedental answered.

Many of the present systems have some limitations like there's no instant response given to the patients they need to attend for specialist's acknowledgment for a protracted time. some of the processes could charge the quantity to perform live chat or telecommunication communication with doctors on-line.

When the User Opens the project, he/she gets greeted by the bot, and the bot will send the user a form which will be filled by the user. The user when done filling up the form will be submitted to the bot. The bot will then confirm the details which are submitted by the form. The user will agree and proceed the medical query. Bot will then ask more questions regarding the patient's query.

User will reply to the bot's query appropriately, Bot will Generate the response and the user if he/she is satisfied with the solution.

Bot will also suggest doctors in the patients area using the googles api. Then the bot will ask if anymore help is needed and the process will continue.

## 2. Related Work

A lot of medical Chatbot prototypes have been introduced in the past years that aim to guide the person with medical recommendation after extracting the illness information from the user messages.

A related paper "Pharmabot: A Pediatric Generic Medicine Consultant Chatbot" proposed by Benilda Eleonor V. Comendador, Bien Michael B. Francisco, Jefferson S. Medenilla, Sharleen Mae T. Nacion, and Timothy Bryce E. Serac provides a style for a complete medical Chatbot that's enforced mistreatment MS Access and Visual C#. For mistreatment the planned style, the user has got to navigate mistreatment the four choices provided by the applying. This style aims to figure by changing the user input to SQL queries and executes it on MS Access to retrieve the answer to the unwellness.

Also a search paper "MedChatBot: An UMLS based Chatbot for Medical Students". proposed by Hameedullah Kazi, B.S. Chowdhry and Zeesha Memon concentrate on a design for associate AIML based mostly Medical Chatbot. This Chatbot style is enforced employing a JAVA-based AIML interpreter known as Chatter bean [3]. To use the projected style, the user should group A message that ought to contain the health problem name and it detects the health problem names exploitation AIML patterns. Once the health problem is detected, the Chatbot provides the user with the mandatory info regarding the matter.

However, the antecedental projected styles within the past failed to concentrate on understanding the intensity of the health problem that the user is suffering through. Our projected style aims to ask additional inquiries to the user till it gets assured regarding the probable health problem that the user is suffering through. Also, our Chatbot style has the conception of strength that helps it to find the intensity of the matter and connects the user on to the doctor if it feels that the matter is just too serious for the Chatbot to handle.

## 3. Literature Survey

Poor way represents a health risk issue and is that the leading reason behind morbidity and chronic conditions. The impact of

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a poor way may be considerably altered by individual behaviour amendment. though this shift in attention towards a durable modifiable behaviour, however, with increasing caregiver work and individuals' continuous desires of care, there's a desire to ease caregiver's work whereas guaranteeing continuous interaction with users. This document explains the planning and validation of CoachAI, an informal agent-assisted health coaching job system to support health intervention delivery to people and teams. CoachAI instantiates a text-based attention chatbot system that bridges the remote human coach and therefore the users. This analysis provides 3 main contributions to preventive attention and healthy way promotion: (1) it presents the informal agent to assist the caregiver; (2) it aims to decrease the caregiver's employment and enhance the care given to users, by handling (automating) repetitive caregiver tasks; and (3) it presents a domain-independent mobile health informal agent for health intervention delivery. we are going to discuss our approach and analyse the results of a one-month validation study on physical activity, healthy diet, and stress management.

#### 4. Problem Statement

The problem statements area unit as follows:

Users don't seem to be aware of all the treatment or symptoms concerning the particular disease. For tiny downside user needs to go in person to the hospital for check-up that is longer overwhelming. Additionally, handling the telephonic demand, the complaints area unit is quite agitated. Such a drag may be resolved by introducing a medical chatbot by giving correct steering concerning healthy living.

#### 5. Methodology

Android User Interface, Chatbot Module, Google Voice API, Chatbot API, MYSQL.

##### 1) User Login to System

User registers on Chatbot application. Then ask queries concerning to the health care and medical details.

##### 2) Ask some Questions

You can ask some regarding some healthcare. And its related to voice-text and text-voice conversation. The Google API has been used for inter conversion of text-voice and vice-versa.

##### 3) Age based Medicine dosage details

You can seek medicine dosage and related queries in this app in voice, and the system gives output for the medicine API and speak out and display all data. Provide data related to your age, area, gender and more. Enter the age and then predict the possible disease by using the SVM Algorithm.

##### 4) Get Medicine Details on medicine name

You can ask about medicine related details on the basis of medicine names.

##### 5) Disease Prediction

Based on the symptoms of the disease, SVM algorithm can predict what disease the person is suffering from.

##### 6) Online API

Using the Google API for voice to text conversion and vice versa. The Chatbot API sends question to chatbot and obtain

connected answer and refer this answer analysis thereon and show answer on humanoid app. Get drugs connected information like drugs name, drugs end details so on from drugs API. once user raise question to the theme, logic of the grievance is recognized by applying information processing. Sense of the words is found victimisation a part of speech tagging and WordNet lexicon by victimisation this sentiment analysis.

## 6. System Architecture

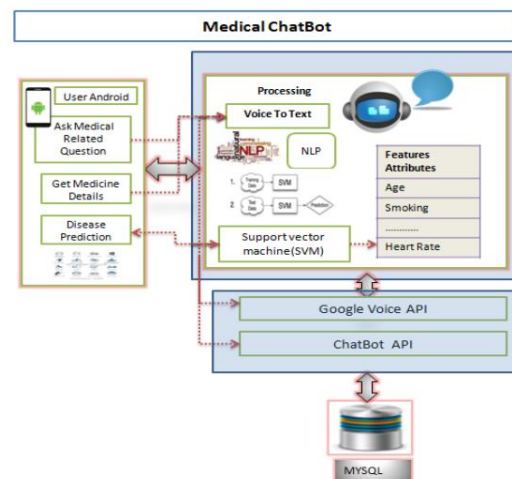


Fig. 1. Overview of system architecture

#### A. Technology Stack

Front End:

HTML 5

CSS 3

Bootstrap 4

JavaScript

Server: Django Framework □ Database

MySQL/SQL

Algorithm for NLP:

Multinomial Naive Bayes Classification Libraries: Python

1. NLTK (Natural Language Toolkit)

2. Django

3. Sklearn

4. Scikit Dependency:

As it's a Webapp it requires Active Internet Connection to Work

#### B. Project Workflow

In the first part of step 1 the user will be asked to register if he/she is a new user, and if already registered then will be asked for login.

In the Second part of the of step 2 the user will use the bot to post his / her questions.

Provide data related to the users age, gender, area and so on. That will predict diseases that are common around the users age by using the SVM algorithm.

User can ask about medicine related details on the basis of medicine names.

Depending on the disease symptoms SVM can predict the

disease.

When user ask questions to the scheme logic of the complaint is recognized by applying NLP.

## 7. Analysis

Since AI in tending continues to be a replacement innovation, these tools cannot be utterly accountable once it involves patients' engagement on the far side consumer service and different elementary jobs.

Here a unit some use cases of chatbots that describe what attainable blessings they promise to patients, medical service suppliers, and doctors:

### 1) *Client Service or Administration*

Log in to just about each web site lately and there's a chatbot watching for serving to you in web site navigation of resolution a minor issue. Hence, chatbots can still facilitate users navigate services regarding their health care. during this regard, chatbots is also within the future can issue reminders, schedule appointments, or facilitate refill prescription medicines.

There will be some HIPAA and privacy difficulties for jumping before school like that becomes a usual place. doubtless these varieties of consumer and body service functions square measure merely on the horizon.

### 2) *Health tracking*

Patients World Health Organization want tending support frequently will benefit from chatbots conjointly. as an example, medical suppliers will utilize bots for creating an association between patients and doctors.

Such bots can give elaborated health conditions' account and facilitate analyze the impacts of the prescribed management medication.

### 3) *Mental health*

Different bots give users a humanized expertise to create users feel that they're lecture a true individual. for varied people, solely being capable of talking concerning however they feel and therefore the anxiety they will be having is very helpful in making higher psychological state.

For patients like this, they'll utilize an informal health larva as AN outlet for discussing their feelings. just in case their necessities transcend the bot's capacities, an attention skilled will merely take over and step in whereas being capable of referencing the interactions between the chatbot and therefore the patient.

### 4) *Employing and Training*

Large tending agencies square measure unceasingly using and onboarding new workers. For process these applications, they often find yourself manufacturing legion work that ought to be stuffed out and credentials that ought to be double-checked. The task of hour departments can become easier by connecting chatbots to those facilities.

For example, new hires may subscribe to the chatbots and integrate into the onboarding procedure for a new employee or receive data regarding the organization.

An organization can make use of chatbots to send data to new employees wherever needed, reminding new employees automatically to finish their forms, and automating multiple other tasks like requests for leave, vacation period, and

maternity break.

### 5) *Patient involvement*

Chatbots area unit created to not solely capture actively however additionally grab patients' interest in their care calls into queries just in case the technology will any involve patients for enhancing results.

Despite the healthy analysis current, the matter, the correct technology can create that bond between the patient and supplier stronger, not break it.

Sometimes doctors direct patients to journal so come back every week later. But, tech-savvy folks won't anticipate one thing to be mentioned in a very week.

Nevertheless, if you'll be able to create it easier by providing them one thing handy, relatable, and fun, folks can bonk. Patients have variant attention expectations during this on-demand world. Hence, attention suppliers ought to settle for always-on accessibility steam-powered by AI.

### 6) *Research or Treatment*

Harnessing the strength information is another scope – particularly machine learning – to assess data and studies faster than ever. With the continual outflow of recent cancer analysis, it's tough to stay records of the experimental resolutions.

Although a doctor doesn't have the information measure for reading and staying previous every new piece of analysis, a tool will. Associate in Nursing AI-enabled device will search through all the data and provide solid suggestions for patients and doctors.

This use case maybe more regarding the headway for arrival from machine learning, but the extraction of data may be in automated kinds of support. It is rather possible to doubt that there is a relation between the auto uncovering of relevant data and conveying it, with an approach to provide more personalized treatment.

### 7) *FAQs (Frequently Asked Questions)*

The list phase is one among the foremost commonplace components in sites. currently many supplier's amendment this phase into associate degree interactive chatbot feature on their homepage dedicated to responsive basic queries. Hospitals and clinics do that for creating knowledge discovery easier for users.

For instance, chatbots will answer queries like what the payment tariffs area unit, that documents area unit vital to urge treatment, what the business hours area unit, and the way a lot of the insurance covers.

This is the way a chatbot works, like the one-stop-shop to respond to basic questions in few seconds. Patients don't need business the clinic or defrayal time on the location navigation for locating the info they need.

### 8) *Billing and Claims*

Nobody needs to handle medical bills, insurance agencies, and claims. Luckily, aid AI bots will facilitate with these jobs. Health bots will check gift coverage, facilitate file claims, and track those claims' standing. Moreover, these bots will facilitate doctors within the charge inquiries and therefore the pre-authorization procedure.

## 8. Conclusion

By assessing the literature, we conclude that this system gives the appropriate result. As we are using large datasets which we ensure for better performance compared as earlier.

Thus, we build up a system which is useful for medical institute or hospitals to help the users to freely ask medical dosage related to queries by voice.

The system gets the result for medicine API and conveys output through voice for medication. We make use of NLP as we need a computer to communicate with the user in his terms. So by using SVM algorithm and disease symptoms systems can predict disease. User can get related answer displayed on

android app. And refer this answer for analysis.

## References

- [1] <https://docs.microsoft.com/en-us/healthbot/>
- [2] <https://en.wikipedia.org/wiki/Chatbot>
- [3] <https://www.youtube.com/watch?v=pv8Dk7L5Vn0>
- [4] [https://www.w3schools.com/howto/howto\\_css\\_chat.as](https://www.w3schools.com/howto/howto_css_chat.as)
- [5] S. B Shweta Dhanu, and Afsana Shaikh, "Anti-Theft Application for Android Based Devices," in International Journal of Advanced Research in Computer and Communication.
- [6] Shrina Sachin, Monika Kar, Swapnali Shewale, "Machine Learning Approach to Classify News Articles Based on Location," in International Journal of Scientific Research & Engineering Trends.
- [7] Vishwa Jagtap, Neha Khandagale, Deepak Rathod, "Chat-bot for college information system using AI," International Research Journal of Engineering and Technology.