SMART CHATBOT FOR COVID-19 USING RASA

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ABSTRACT

In today’s time, our immunity is being challenged a lot many times. It’s the only thing we are depending upon as no other cure is found yet. Also, we have experienced a lot of difficulty in finding the correct information about the plague. The correct knowledge about the plague, methods to boost our immunity, and last but not least an emergency support at the time of crisis is something we look forward to. Chatbot for COVID-19 being a platform-independent technology will be accessible from not only the mobile application but also from a web application giving people easy access to it. It even consists of a self-assessment test to monitor our health on a day-to-day basis. The voice assistance in the mobile application will bring a significant change from the existing applications to date. Moreover, existing platforms are spreading more negativity than general awareness. To bring a change in the public’s mind our health technology will focus even on the prevention side of the plague. Also, as there are very few facilities available in every area for the Covid patients. We propose to introduce a new feature in which the user could check for the availability of a bed in his/her area and rush to the nearest available location without any delay.

Keywords: Plague, COVID-19, Immunity, Chatbot, Platform independent, general awareness, Voice Assistance.

I. INTRODUCTION

The spread of CORONA-VIRUS across the world has created a sense of panic and fear amongst the people. They lack the correct and updated knowledge about the pandemic taking place all over the world. Furthermore, rumors, myths, and misinformation about the pandemic have spread as quickly as the virus itself. There is a huge gap between the demand and the availability of public healthcare facilities. There is a need to automate the public healthcare system for dealing with the complicated but crucial problems in the fight against this pandemic. The technology in today’s time should be availed to spread the correct information and measures for the masses. For this purpose, a smart chatbot built for COVID-19 and other contagious viruses in the future, to accumulate all the possible features for the betterment of society. The existing platforms are

More platform-dependent and thus lack availability and easy access as they cannot be accessed from everywhere. The chatbot being a platform-independent technology can be deployed via multiple channels like web, mobile, and desktop. Also, no major application to date has an AI voice assistant provided in it which will be a great development and upgrade to this chatbot as compared to the competition technology. In today’s time when our immunity has become the foremost defense against this pandemic, no COVID applications help the general public to get the correct knowledge about the immunity boosters. All the existing platforms are featuring the negativity caused and generating fear, anxiety, depression, and other non-helping feelings inside the public. Through this technology, we would not only display the correct and up-to-date information regarding the pandemic issues throughout the world to the public but also make them aware of exercises, medications, and diet which would eventually lead to a decrease in the negativity and make people more ready and strong, mentally as well as physically, for the time ahead.

In short, we can define this chatbot as our latest technology tool in the department of health services which could simplify as well as modify the present way of dealing with this new plague. Also, not only for the COVID-19, this...
technology could be used to detect numerous other health-related issues in the future which would ultimately lead to the advancement of our approach in dealing with our health problems.

II. METHODS

There is no doubt that Artificial Intelligence is affecting medical care. As indicated by a report from Accenture, over 40% of medical care heads consider AI the innovation that will have the best effect on their associations inside the following three years.

Medical care suppliers are now utilizing different sorts of AI technologies, for example, prescient investigation to address different issues. Today, an expanding number of them are investigating chatbots.

In the healthcare area, AI-controlled chatbots can be utilized to emergency patients and guide them to get the proper assistance. Chatbots are viewed as a more dependable and exact option in contrast to online quests patients complete when they're attempting to comprehend the reason for their side effects.

Medical care suppliers accept that chatbots may help patients who aren't sure where they should go to get a cure. Numerous individuals don't have a clue when their condition requires a visit to the ER and when it's sufficient to contact their doctors through telemedicine. Toward the end of the day, normal individuals aren't prepared medicinally to comprehend the seriousness of their diseases. That's the place where chatbots can help. They gather fundamental data from the patients furthermore, in light of the information, they furnish patients with more data about their conditions and propose the following stages.

Chatbots can uphold clinical groups by helping their everyday caseloads. In the wake of dissecting the patient information, bots can propose an online conversation with a clinician as opposed to a visit to their actual office. In its embodiment, the chatbot innovation utilized in the clinical area helps to facilitate to ease a load of cases on clinical experts.

This is especially important in the present circumstance, where the spread of COVID-19 puts an uncommon weight on medical care suppliers. With the help of this innovation, clinical focuses could facilitate the tension on their frameworks essentially.

Besides, AI chatbots can improve the supplier's capacity to analyze reliably and precisely. That way, suppliers will likewise have the option to provide care to more patients.

Chatbots can likewise address explicit issues. For instance, Northwell Health dispatched a chatbot to diminish the number of flake-outs for the colonoscopy strategy, which is basic for diagnosing colorectal cancer. The personalized chatbot supports patients by handling the worries or misconstruing about the methodology and conveys data responsively and conversationally. By using the app, researchers can monitor patient satisfaction, cancellations, and completed clinical observation.

III. RESULTS & DISCUSSION

The proposals of different types of systems for the implementation of Chatbots in the field of the healthcare industry is being advantageous in their way. Where one system uses the majority for the updated information and in other-regarding diet chart for immunity, our very own chatbot would bring all these earlier existing concepts together with the ease of Virtual Assistant, availability of beds at the time of crisis, and access from different platforms.

The use of RASA technology in building the chatbot also resulted in saving a lot of time.

RASA is a framework for developing AI-powered, industrial-grade chatbots. It's incredibly powerful and is used by developers worldwide to create chatbots and contextual assistants. Rasa Open Source is a framework for NLP understanding, discourse the executives, and mixes. Rasa X is a free toolset used to improve logical collaborators manufactured utilizing Rasa Open Source.

Together, they incorporate all the highlights to make incredible content and voice-based assistants and chatbots. Building relevant collaborators and chatbots that truly help clients is hard. Rasa gives foundation and apparatuses
important to high-performing, strong, restrictive relevant associates that work. With Rasa, every designer can make better content and voice-based assistants.

As we know, chatbots for healthcare industries are yet to improve upon the opportunities, to provide a better interaction in every potential scenario. Our work provides a great step towards this goal. We have identified and researched the existing systems which have opened a great number of opportunities we can look forward to with the help of this chatbot in the future.

The research of ours helped us to know about how the different AI-powered chatbots are working even in the real-time environment and in which context they are being implemented.

By looking at these many publications, our idea with this chatbot is upgraded and will lead us a huge step forward from the existing systems to date. The user will have a chat method with the chatbot to get the desired result in the form of messages. The answer received shall be deep as well as easy to understand by the general public.

To improve the performance of our technology, we will be including an AI-driven Voice assistant. It will help to have voice-to-voice communication with the chatbot. Not to forget, our bot will be a very crucial technology to look upon at the time of emergency as it would be letting us know the availability of beds in the COVID assigned hospitals which would prevent delay by a significant margin. It will be available for 24*7 hours and will be ready to use anytime and from anywhere. The performance of the chatbot would depend largely on the database. Thus, the data bank would be rich in questions and would be able to answer the maximum number of questions being asked from the field of healthcare and especially COVID related.

The tedious task for this technology was not only the development but also the implementation of data sets that would train the chatbot to answer questions in a real-time environment. Also, here we apply voice input through a mic and compare it with the content stored in the database in raspberry pi, and answer from it. If the answer related to the query won't be available in the database, the query shall be answered with the help of the google search engine.

IV. CONCLUSION

In today's time immunity has become the foremost defense against this pandemic. For their safety, people are taking whatever possible measures they can, be it immunity boosters, not going into any crowded public places, wearing a mask everywhere, keeping track of certain applications, and whatnot. We already came across some very popular initiatives like AarogyaSetu but they lack the proper information one may need immediately at the time of crisis. These previous applications are just for providing the updated information regarding the pandemic but they don't help the people know how to prevent them and where to head at the time of emergency. The chatbot could bring this whole health-care system to a whole new level by benefiting the public at this point and even after this pandemic gets over. The chatbot will be able to display the updated data of COVID-19 patients. The data can be displayed state-wise with the number of active cases. A graphical representation of the data in terms of active cases and recovered cases with the help of a pie chart or other graphs can make the data easier to understand. There would also be a self-health assessment test so that the users can test themselves if they think they have got any symptoms because it's not at all wise to visit hospitals and doctors at this point in time. All the tests which would be added should be answered truly by the users for their own as well as a public benefit. Furthermore, the chatbot would find out the number of active cases in a radius of 2kms. The chatbot would be deployed in a mobile application i.e. both for iOS and Android as well as for web applications and also as a desktop application. The new feature which is not found in the already built applications is that they don't let us know the availability of beds in hospitals for the patient which is a major issue that’s why our chatbot would be able to show the beds availability for a patient in all the nearby hospitals and wards so that the user doesn't have to search here and there for the availability of beds. A voice assistant shall be provided to the user with the chatbot so that he/she can talk to it for their queries. This would make chatbots more user-friendly. We all know that our immunity is the only way till now by which we can protect ourselves from this pandemic. Users would get a diet plan for boosting their immunity. All these features will be added one at a time starting with the basic chatbot with the symptoms detecting test. With proper design, development, deployment, and ongoing monitoring, the chatbot would be of great help to this society.
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REFERENCE