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Corona Safety Guidelines Chatbot using AI & Ml

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ABSTRACT: The huge number of deaths caused by the novel pandemic COVID-19, which can affect anyone of any sex, age and socio-demographic status in the world, presents a serious threat for humanity and society. At this point, there are two types of citizens, those oblivious of this contagious disaster's danger that could be one of the causes of its spread, and those who show erratic or even turbulent behavior since fear and anxiety invades our surroundings because of confinement and panic of being affected. In this paper we aim at developing a smart ubiquitous chatbot, called COVID-Chatbot, for COVID-19 assistance during and after quarantine that communicates with a citizen to increase his/her consciousness towards the real danger of this outbreak. Furthermore, COVID-Chatbot is able to recognize and manage stress, during and after lockdown and quarantine period, using natural language processing (NLP). The robust messages delivered from COVID-Chatbot and its way of communication could possibly help to slow the COVID-19 spread.

I. INTRODUCTION

Recently, an outbreak caused by the virus named SARS-CoV-2 has impacted the lives of humans very badly across the globe. The very first occurrence of COVID-19 was enlisted in December 2019 in China. The infection may outspread from bats to people through another median host and cause extreme respiratory disorder, described by strong man-to-man transferal through the air [4]. From that particular day, there's a rapid growth in the number of cases being registered daily. And the many countries were under lockdown for almost 3-4 months. During this period, people face many problems financially, medically.

This global pandemic has even made a negative impact on the economy of most of the countries. This global pandemic has made a devastating impact on several domains like education, business, et al. . There are many problems that folks face during this situation. The medical staff is facing problems in providing medical assistance to the people in need, providing awareness among the people has become difficult, many of us need financial help and therefore the list goes on. we'd like tosolve the COVID19 crisis and help people using technology. As a collective solution to all or any the issues , we are proposing a userfriendly, reliable web application that has a COVID19 tracker, COVID19 prediction, a Chatbot, and lots of other features which are solutions to some problems faced by people. We try to integrate an efficiently developed Chatbot, which may assist people to surf the web site and also accurately answer the COVID19 related queries they need

II. LITERATURE SURVEY

The authors of [1], developed a manmade intelligence method to to diagnose and predict COVID19. This method is designated for the clinical use, in order that ordinary citizens couldn't take advantage of it.
Also [2] proposed to use AI and mobilephone simultaneously so as to enhance possible case identifications of COVID-19 in populations under quarantine .
More over in [3], AI is including an universal data sharing standards to manage and monitor urban health in smart cities, also it revealed the urgent need of the standardization of protocols for enhanced smart city communication to supply more possible cooperation within the case of disasters like the recent novel pathogen COVID19. On the opposite hand,

[7] developed a manmade intelligence based automated thoracic CT image analysis tools for detection, quantification, and tracking of COVID19 positive patients,

while [5] presented a manmade intelligence framework that reads the smartphone sensors' signal measurement to predict the severity of the pneumonia and therefore the results of the COVID19. it's designed for the experts (doctor or radiologists).

Chatbots prove their potential to surmount obstacles like geographical problems that would be effective in our confinement period to curb inperson medical consultations. Meanwhile, communication becomes a necessity to convince and reassure people of the present plight, that's why, a Japanese based Bespoke company took advantage of AI to launch a web chatbot called Bebot that gives uptodate information of the COVID19 and preventative actions with an opportunity to see symptom [6].

[7] proposes a telemedicine service which can be accessed and used by the people in all locations. Using services like this can reduce the number of people coming out of homes and that directly impacts the outbreak of COVID19. For the disease diagnosis, virtual checkups and care authors used AI. System helps to transport the medicine to the particular patient at immediate from online booking but the transportation time may be large for some remote areas, which makes the patients into danger.

[8] proposes a model for anticipating COVID-19 threatening movement with AI methods. The proposed model can be viably utilized for discovering the mellow patients who are anything but difficult to weaken into extreme/basic cases, so such patients get convenient therapies while reducing the restrictions of clinical assets. There's a scope for wrong predictions and this leads to the wastage of medical facilities.

In [10], authors proposed a forecasting model which can predict number of confirmations, recoveries and deaths registered because of COVID-19. Prediction models such as the PA, ARIMA, and LSTM algorithms were used to predict the number of COVID-19 confirmations, recoveries, & deaths over the next 7 days and acquired prediction accuracies of 99.94%, 90.29%, and 94.18%, respectively. Under this paper they also propose a diagnosis model using VGG-16 to detect COVID-19 utilizing chest X-ray images. The model allows the rapid & reliable detection of COVID-19, enabling it to achieve an Fmeasure of 99% using an augmented dataset.

[11] proposes a system that works for limiting the COVID-19 transmission, increase health care providers capability and capacity; prevent/predict the future outbreaks. For this system they used telemedicine, tele-critical care, tiered tele-mentoring. This system makes sure that the patient gets convenient healthcare from the comfort of their own home. This might be good for treating patients with small diseases like flu or general fever but are not efficient to treat people with some serious health issues.

Lately, social media is considered as one platform to share information to have maximum reach. To make use of this fact the authors have come up with an idea of bringing awareness and social control in the public using social media [12].

The authors [13] propose a system that cando disease diagnosis using the radiology images. AI & deep learning are some of the techniques that they preferred to use in building this system. This system helps in decreasing the exposure of patient to radiation and it requires no preparation but it is more expensive compared to the radiography and provides basic anatomic information for only a few tissue densities.

[15] proposes a system that predicts the patient's health condition using XGBoost classifier, machine learning based CT radiomics models. The predictions are made based on the patient health records submitted. Having access to the health records helps in studying the case properly and treat them in the best way possible. Besides the advantages this model also has its disadvantages as the system requires large amount of private data

III. PROBLEM DEFINITION

The proposed system provides a texttotext conversational agent to simulate a person's conversation; the chatbot architecture integrates an NLP carpenter's kit to extract and understand the user input, an ontology as a Knowledgebase, a finite state machine because the engine of the chatbot. IV. METHODOLOGY It uses a neural network with two hidden layers(enough for these QnA) that predicts which pattern matches with the user's question and sends toward that node. More patterns are often added from user's inquiries to train it for more improved results and add more info about coronavirus within the JSON file. The more you train this chatbot the more it gets precise. The advantage of using deep learning is that you simply don't need to ask an equivalent question as written in JSON file cause stemmed words from the pattern Page 1 are matched with user question.

IV. MODULE DESCRIPTION

User login: To log in to the system, the user will enter the username and password, if the entered information is correct the system will redirect him to the house page or it'll show a mistake message.

Registration: User will register within the system with standard information.During registration, the password are going to be automatically created and provided by the user's post.

Chatbot system: These are thus far the foremost advanced chatbots. they're a mixture of best from rulebased and keyword chatbots. These chatbots use NLP to know the context and intent in users' requests and thus act accordingly. These chatbots can handle multiple requests from an equivalent user comfortable .

V. CONCLUSION

The advancement of the online technologies and techniques are utilized in this website. The planned requirements and functions are achieved within the development of this project. This project helps the user in getting most of the information's majorly needed during this pandemic situation. The proposed systems are mostly one major feature application, but we combined everything together and made it work it as a lightweight weight application

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