Chatbot For Covid Vaccine Using Deep Learning

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Abstract- Experts believe that getting a COVID-19 vaccine helps keep you from getting seriously ill even if you do become COVID-19 positive patient. If you get vaccinated, then you can also protect other people around you, and you can save your and other's life as well as reduce risk. particularly people who have weak immunity are at bigger risk for serious illness from COVID-19.Experts and doctors are continued to conduct the studies to learn more about the vaccination and how the COVID-19 vaccination may reduce spread of the virus that causes COVID-19.our chatbot covi-help is able to give information about co - vaccine.we make chatbot with the help of NLP and deep learning.we can easily get information about covid and co - vaccine from this chatbot.Use graphical user interface with TKinter we have define a function that get message as parameters and then return response.

Keywords – Chatboat,Co-Vaccine,Deep learning

I. INTRODUCTION:

Chatbots, if properly built and implemented, could assist us by swiftly disseminating up-to-date information, e.g. In India, free vaccination against COVID-19 will begin on January 16, 2021, and the government is asking all residents to get vaccinated as part of what is likely to be the world's largest vaccination programme. In india there were 8 covid vaccine is currently going to clinical trial [5]. Covishield and Covaxin, made by Bharat Biotech, have been approved for limited emergency use by India's medicines regulator. Manufacturers in India have said that they will be able to meet the country's future COVID-19 vaccination needs. The workforce and cold-chain infrastructure in place prior to the pandemic are sufficient to vaccinate 30 million healthcare workers in the first instance. The Indian government has taken immediate steps to increase the country's vaccine manufacturing capacity, as well as a computerised system to address and monitor all elements of vaccine administration.[5]

During the first year of this novel coronavirus infections, efforts focused on preventing and slowing down the spread of the disease in China's Wuhan province. [5]COVID-19 vaccinations that are effective are urgently needed, according to a global review of herd immunity. Currently, some of the leading vaccine candidates have demonstrated promising outcomes in the prevention of clinical disease, indicating that vaccine development efforts are beginning to bear fruit.

Despite the fact that the vaccination is not necessary, India, which has a population of 1380 million people (as of 2020), plans to give it to all of its residents who want it. Because of its large population, vaccine importation may not be the ideal solution for India. Thousands of aircraft would be required to transport the vaccine, according to the International Air Transport Association (IATA). Transporting the vaccine from production sites in other countries to distribution zones will necessitate thousands of flights.

India, which has a sophisticated vaccine development programme, intends to manufacture COVID-19 vaccine domestically as well as distribute it to countries that cannot afford to acquire expensive vaccines from the West. [5]Even though some of the final details are not yet available, data from clinical studies of many vaccines in India supports their eligibility for emergency authorization. The focus today is on quality control, production quality, and cost management for these vaccinations in order to make them accessible to even the world's poorest countries.

II. RELATED WORK

(I) WhatsApp Chabot is implemented for the vaccination registration and slot booking in kolkatta.It has traversed the seventy-five thousand reservation bookings since May 15. Aroud seventy-five thousand registrations are successfully done on the WhatsApp bot.And still it's going. Installation Vaccination was introduced through this WhatsApp bot. It also serving the senior citizen four-wheelers solely.once a triple-crown vaccination drive for the second dose, the slots were opened for 1st dose vaccination for forty-five or above. The Chabot helped to appointment booking for jab and reduced waiting time for people at vaccination centres. The bot has zero manual intervention to urge a jab slot.[7]

(II) For the elders WhatsApp has launched a new chatbot which is used in the COVID-19 vaccine process like information regarding it,booking for the vaccine,etc. WhatsApp chatbot that help senior for vaccinations process , it was introduced by the zero-fund volunteer organisation Robin Hood Army [4]. People who want to join the organisation, distribute leftover food, or volunteer to assist older persons with their COVID-19 vaccine can use the chatbot. Senior person have to send a WhatsApp message saying "Hi" to +91-8971966164 and then press with "3" to get a volunteer to assist them with the immunisation process. It's worth noting that the Robin Hood Army currently only assists senior persons who are living alone. Individuals can also communicate with the Chabot to volunteer for the COVID-19 immunisation drive or other humanitarian initiatives done by the organisation. There's also the option of giving surplus food to those in need. Yellow Messenger, a company that specialises in artificial intelligence (AI), created the Chabot. CoWIN Vaccine Alert Bots Provided Unanticipated Growth for Telegram In a statement, Neel Ghose, Founder of Robin Hood Army, said, They are really thrilled to launch the #SeniorPatrol campaign on WhatsApp to help needy senior with t vaccination in them they booking slots . [4]

We believe that this initiative of vaccinaton process for senior citizens will helpful for them and needy one. Seniors can now simply seek aid by sending a simple WhatsApp message. Volunteers for the Robin Hood Army may be found in 186 cities across India, in 21 states. During the protracted lockdown, the #SeniorPatrol campaign was started to assist vulnerable older individuals in receiving COVID-19 immunizations.It is said that to helped thousands of senior citizens across the one hundred fifty five cities to get registered on the CoWIN portal.

(III) As per a PTI report, Reliance Industries' Jio platform has begun giving information regarding coronavirus vaccine on WhatsApp through chatbot, Jio users now use the Jio chatbot on WhatsApp. They can recharge, make payments, receive answers to questions,etc. It also provides information on COVID-19 vaccination availability.The new service enables people to look for coronavirus vaccine availability, without the hassle of the one-time password to refresh the session.The service available on this number 7000770007, it responds by just typing "Hi".

The chatbot works for users on other mobile networks as well For vaccine-related any information and recharging a Jio account,etc. Unlike other official online portals,In this chatbot the Covid-19 vaccine centre and availability search can be refreshed by putting the 'pin code' in the chat and then typing the area's pin code facility is avalible. The jio users can opt for mobile number portability service, support for Jio SIM, JioFiber, JioMart and international roaming on the chatbot[9].

III PROCUDURE

Covi-help chatbot is built with pytorch it also used Natural Language processing and feed forward neural network.This bot is trained on json file. In this we have different intents and each of this intents have tag greetings.We have class labels,patterns and responses,and we can change this as per our need.

We are using NLTK, It is popular library for NLP.NLP Pipeline that we have used is as follows, we first get the sentences on which we apply tokenization. We also exclude punctuation and based on this we calculated bag of words.We load json file in read mode.Then we create empty list.We have imported tokenization from nltk. So we have training data and for this we have to continue creating bag of words. From x-train and y-train we have created a pytorch dataset.After that we have imported and save model. Our deep learning model that is feed forwared neural network with 2 hidden layers.We have bag of words as a input and 2 fully connected hidden layers and no of different patterns as input and output size is no of classes.we have RelU activation function.We use TKinter GUI for our chatbot.

This chatbot is easily gave information about vaccination,how much it is important ,why it is needed,Which types of vaccine available etc.
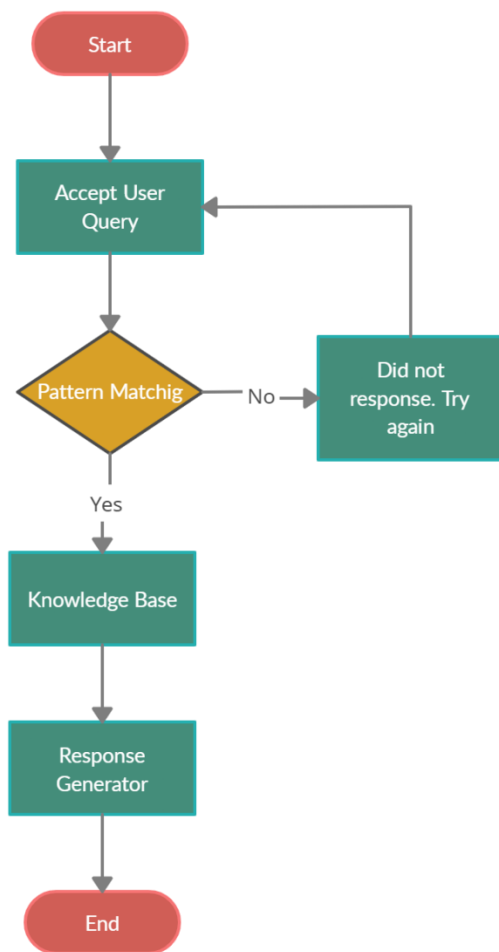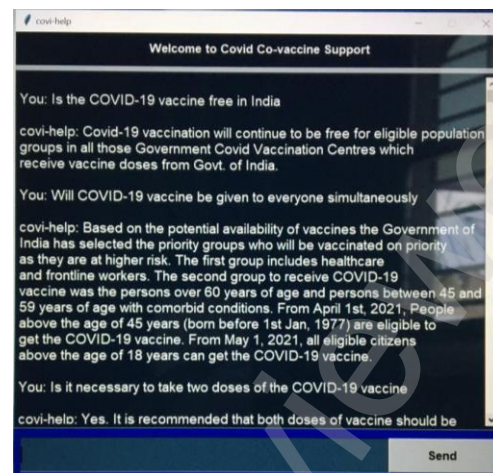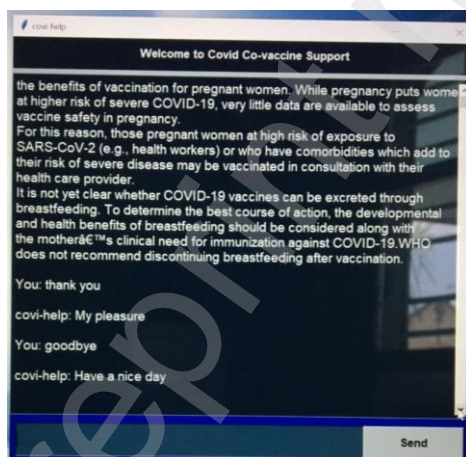
Figure 1: System Work Flow

Here, some chatbot working images. We cover lots of information regarding vaccine and vaccination. So that one can easily understand about it.

VI. ADVATAGES AND DISADVANTAGES

ADVANTAGES:

1. 24/7 Availability
2. Instant Response where chatbots handle the thousands of customer's queries and acknowdlge them,this is a business factor.And reduce time also.
3. Consistency in Answers – Chatbots can maintain a great level of consistency in answers as well as when answers are consistent, this always improves customer experience.
4. Reduce Customer Service Costs, Implementing chatbots is great help dor the businesses to optimize customer service costs. So if we investing in chatbots,it saves extra costs of adding more agents s we an reduce time and cost.
5. Chatbots can help you gather valuable data from your customers by interacting with them. This includes getting insights about their activities, preferences, problems etc.
6. covi-help chatbot help to gain knowdleg about covid and vaccination.

DISADVANTAGES:

1. Chatbots have no feelings and emotions, it can become critical for them to effectively interact with humans in some scenario.
2. Difficult to Create
3. Made to Handle First-Level Questions - They might not be able to answer complicated questions. As a result, you must educate them in the proper manner. In addition, you must organise and optimise your knowledge base in a bot-friendly

manner. This will enable your chatbot to properly scan the text and find relevant solutions for each client request.

4. Require Maintenance is also one drawback of chatbot.

5. Poor memory, Because chatbots are unable to remember previous conversations, the user is forced to repeatedly type the same thing. This might be inconvenient for the client and inconvenient because of the work involved.

VI. CONCLUSION

This is very easy and user friendly chatbot.GUI feature is good for easily to talk with the bot.This covi-help bot has enugh information to know about vaccine and vaccination.With using NLP and Neural network it became easy and helpful to the people who don't know about vaccination.

VIII.REFERENCES

[1]Adam S. Miner , Liliana Laranjo and A. Baki Kocaballi. "Chatbots in the fight against the COVID-19 pandemic"

[2]https://www.cdc.gov/coronavirus/2019-ncov/vaccines/vaccine-benefits.html

[3]Sacha Altay,Anne-Sophie Hacquin,Coralie Chevallier,Hugo Mercier. "Information Delivered by a Chatbot Has a Positive Impact on COVID-19 Vaccines Attitudes and Intentions"

[4] https://gadgets.ndtv.com/apps/news/whatsapp-coronavirus-chatbot-robin-hood-army-covid-19-vaccine-senior-citizens-india-cowin-24448869.

[5]Velayudhan Mohan Kumar, Seithikurippu R. Pandi-Perumal, IlyaTrakht and Sadras Panchatcharam Thyagarajan. "Strategy for COVID-19 vaccination in India: the country with the second highest population and number of cases"

[6]https://www.who.int/news-room/q-a-detail/coronavirus-disease-(covid-19)-vaccine-research-and-development

[7]https://www.businessstandard.com/article/current-affairs/kmc-whatsapp-chatbot-for-covid-vaccination-crosses-75-000-bookings-121061200448_1.html

[8]Tung Thanh Le, Zacharias Andreadakis, Arun Kumar, Raúl Gómez Román, Stig Tollefsen, Melanie Saville and Stephen Mayhew. "The COVID-19 vaccine development landscape"

[9]https://www.livemint.com/technology/tech-news/reliance-jio-starts-providing-covid-vaccine-availability-info-to-users-via-whatsapp-11623240564505.html

[10] S Kadam, R Ige, A Jadhav, M Marathe, S Desai, "Neural Network Chatbot With Advanced Voice Recognition For Banking Industry In Native Language" - Available at SSRN Elsevier 3863853, 2021.

[11] Agrawal, M., Ainapure, R., Agrawal, S., Bhosale, S., Desai, S., "Models for Hand Gesture Recognition using Deep Learning"2020 IEEE 5th International Conference on Computing Communication and Automation, ICCCA 2020, 2020, pp. 589–594, 9250846.

[12] Desai, S., Patil, S.T., "Boosting decision trees for prediction of market trends"Journal of Engineering and Applied Sciences, 2018, 13(3), pp. 552–556.

[13] Swati Avad, Dr. Sharmishta Desai, "A research review on Indian Sign Language Recognition Using Machine Learning", Journal of Computer Science Engineering and Software Testing (e-ISSN: 2581-6969) Volume 6 Issue 2 Year 2020.

[14] Dr. Sharmishta Desai,"Dynamic Induction Model for Student's Behavior Analysis",International Journal of System and Software Engineering,7(1) 13-19 June 2019.

[15],Desai, S., Roy, S., Patel, B., Purandare, S., Kucheria, M., "Very fast decision tree (VFDT) algorithm on hadoop" Proceedings - 2nd International Conference on Computing, Communication, Control and Automation, ICCUBEA 2016, 2017, 7860037.

[16]Desai, S., Patil, S.T., "Efficient regression algorithms for classification of social media data" 2015 International Conference on Pervasive Computing: Advance Communication Technology and Application for Society, ICPC 2015, 2015, 7087040.