iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** IV **Month of publication:** April 2022

DOI: https://doi.org/10.22214/ijraset.2022.41856

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue IV Apr 2022- Available at www.ijraset.com

Doctor-Bot: AI Powered Conversational Chatbot for Delivering E-Health

Prof. Sneha A. Khaire[1], Vedang Shahane[2], Prathamesh Borse[3], Ashish Jundhare[4], Arvind Tatu[5]
[1]*Professor, Dept. of Information Technology, Sandip Institute of Technology and Research Centre., Savitribai Phule Pune University, Nashik (India)*
[2, 3, 4, 5]*Students of Information Technology, Sandip Institute of Technology and Research Centre., Savitribai Phule Pune University, Nashik (India)*

Abstract: ***Nowadays, making time for even the smallest of things has become quite difficult as everyone wants to save their time. Health suffers the most due to this. Due to the shortage of time people have developed a habit of seeing a doctor and having a proper checkup only when it's extremely important and there's no way around it could be postponed. And sometimes people are just way too nervous to visit their nearest medical clinic, especially, in the times of COVID, when there was a massive scarcity of any medical assistance, something that could give you information about your specific medical condition, and recommend you solutions and medication, without the need of you going out, could be a great deal.***
This project takes the same issue in consideration and aims to provide an easy and accessible solution to help people in dealing with their specific medical condition with the help of this AI modules and machine learning powered Health Care Bot. Having a service that can give you the solutions without participating in the activity of reaching out to a doctor for your minor issues not only just saves your time but also gives you the freedom and flexibility to choose any suitable time to take advantage of the mentioned services. The aim for creating this is to help people to have their minor medical problems sorted from the comfort of their home. And in case of something extremely serious that needs an expert assistance it will show the nearby medical facilities that the patient can reach out to with appropriate information. All the information is scraped using trustable sources and even after that refining the process by introducing AI modules to get the best possible solution.
Keywords: AI chatbot, Conversational bot, Digital health, Machine Learning, Natural Language Processing

I. INTRODUCTION

These days it becomes extremely difficult to make separate time even to have a proper care and regular checkups at your doctor's clinic due to the busy schedules. Hence, having a trustable source which can give us the information and solution needed can help us in taking care of our health and saving our time. Surveys done across different age groups showed that that people with their age ranging from 18- 60 have a very bad report of regularly going to their doctor's clinic for regular checkups, and majority of the reason points out to busy schedule for the given statistics. People tend to see their doctors only when it becomes extremely inescapable to avoid doing that. And in developing countries like India this issue is even predominant. Furthermore, these small skipped meetings and ignored checkup sessions become the reason of bigger problems that might harm people in ways they don't want to. This project focuses on providing people an outlet to take care of their health and it also encourages them to do it on a regular basis. Using Machine Learning literature review where different research works on fake news detection are discussed briefly. The proposed system application "Doctor-Bot" aims to reduce accidents occurred due to self-treatment done with use of internet. On google assistant, its easy to search for any medical term and get instant result but opting to experiment those home remedies or medicines as described on internet can be life threatening, our proposed system will not allow data from any website without checking credibility or verifying from experts. When we search any medical term like medicines, symptoms or details of any disease on Google in English, it displays results in knowledge panel with details presented and verified by "Apollo Hospitals" but there are over six thousand of languages in world and millions of searches happens for medical terms in these languages and we aim to provide verified and genuine information to provide e-health with 0%* chance of any mishap due to wrong or untrusted information. Nowadays, making time for even the smallest of things has become quite difficult as everyone wants to save their time. Health suffers the most due to this. Due to the shortage of time people have developed a habit of seeing a doctor and having a proper checkup only when it's extremely important and there's no way around it could be postponed. And sometimes people are just way too nervous to visit their nearest medical clinic, especially, in the times of COVID, when there was a massive scarcity of any medical assistance, something that could give you information about your specific medical condition, and recommend you solutions and medication, without the need of you going out,could be a great deal.

II. SURVEY ANALYSIS

The proposed concept of this research paper is to create an AI-powered medical chatbot that will detect the ailment and provide basic information about it before contacting a doctor. The medical chatbot was created to reduce healthcare expenses and enhance access to medical knowledge. A few chatbots serve as reference books, assisting patients in learning more about their illnesses and increasing their overall well-being. The user can take use of a chatbot's main benefit, which is that it can diagnose any condition and provide relevant information. A text-to-text diagnosis bot connects patients with medical experts and provides a personalised diagnosis to help them understand their symptoms. As a result, people will think about their health and take the necessary precautions. The model proposed will use various Machine Learning and Natural Language Processing (NLP) techniques to achieve maximum accuracy.

Chatbots are increasingly being used in the medical industry to help patients gain access to information while also reducing physician workload. For connecting with patients, many commercial chatbot solutions have been developed as web or mobile applications.

For a variety of reasons, it's critical to be aware of the present state of various methodologies and strategies used in the development of chatbots in the medical field. Conducting such a survey will assist researchers in identifying the many strategies that have been employed in the future, as well as building on existing approaches to produce more intelligent chatbots that deliver a more natural experience for users. It's also crucial to assess the present state of chatbot development in terms of creating chatbots for various applications.

As a result, we did a scoping assessment of the literature on chatbot creation in the medical profession for this study. It built and defined the major components of chatbot development, as well as an explanation of the methodologies utilised to produce each of the recognised components The major goal of this research was to look at the technical aspects and development processes linked with chatbots used in the medical profession, in order to explain the best development methods and assist chatbot developers in their future work.

In reality, plain text is the most predominant form of data available today. Text analysis applies analysis of word frequency distributions, pattern recognition, tagging, link and association analysis, sentiment analysis, and visualization. Natural Language Processing is abroad topic, Machine Translation, summarizing texts, spam detection, sentiment analysis are real big field. Python is readable, fast for prototypes, it has rich library for reading and writing data, running calculations on the information and creating graphical representations of data sets and list support, it includes a lot of NLP-related libraries viz. NLTK, text blob, scipy, pandas... also it has great parsing libraries viz. Beautiful Soup, scrapy. Natural Language Toolkit (NLTK) is a Python API for the analysis of texts written in natural languages, such as English. NLTK is a very popular and old library which comes with a collection of sample texts called corpora (collection of text documents).

NLTK is a popular Python programming language for working with human language data (Natural Language Processing). NLTK is designed to aid research and education in natural language processing (NLP) and closely related fields such as empirical linguistics, cognitive science, artificialintelligence, information retrieval, and machine learning.

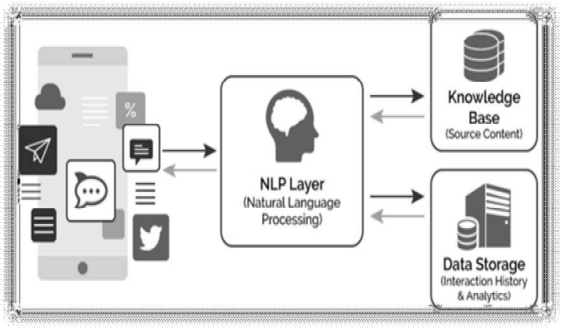


Fig.1 NLP

This web application's goal is to help people solve minor medical problems from the comfort of their own homes. In the event that something extremely serious occurs that demands expert assistance, the app will highlight nearby medical institutions and provide contact information to the patient. The data is scraped from reputable sources, and the process is fine-tuned by including AI modules to produce the best potential outcome.

III. DESIGN

The proposed concept is to create an AI-powered medical chatbot that will detect the ailment and provide basic information about it before contacting a doctor. The medical chatbot was created to reduce healthcare expenses and enhance access to medical knowledge. A few chatbots serve as reference books, assisting patients in learning more about their illnesses and increasing their overall well-being. The user can take use of a chatbot's main benefit, which is that it can diagnose any condition and provide relevant information. A text-to-text diagnosis bot connects patients with medical experts and provides a personalised diagnosis to help them understand their symptoms. As a result, people will think about their health and take the necessary precautions. The model proposed will use various Machine Learning and Natural Language Processing (NLP) techniques to achieve maximum accuracy.

Chatbots are increasingly being used in the medical industry to help patients gain access to information while also reducing physician workload. For connecting with patients, many commercial chatbot solutions have been developed as web or mobile applications.

For a variety of reasons, it's critical to be aware of the present state of various methodologies and strategies used in the development of chatbots in the medical field. Conducting such a survey will assist researchers in identifying the many strategies that have been employed in the future, as well as building on existing approaches to produce more intelligent chatbots that deliver a more natural experience for users. It's also crucial to assess the present state of chatbot development in terms of creating chatbots for various applications.

As a result, we did a scoping assessment of the literature on chatbot creation in the medical profession for this study. It built and defined the major components of chatbot development, as well as an explanation of the methodologies utilised to produce each of the recognised components The major goal of this research was to look at the technical aspects and development processes linked with chatbots used in the medical profession, in order to explain the best development methods and assist chatbot developers in their future work.

In reality, plain text is the most predominant form of data available today. Text analysis applies analysis of word frequency distributions, pattern recognition, tagging, link and association analysis, sentiment analysis, and visualization. Natural Language Processing is abroad topic, Machine Translation, summarizing texts, spam detection, sentiment analysis are real big field. Python is readable, fast for prototypes, it has rich library for reading and writing data, running calculations on the information and creating graphical representations of data sets and list support, it includes a lot of NLP-related libraries viz. NLTK, text blob, scipy, pandas... also it has great parsing libraries viz. Beautiful Soup, scrapy. Natural Language Toolkit (NLTK) is a Python API for the analysis of texts written in natural languages, such as English. NLTK is a very popular and old library which comes with a collection of sample texts called corpora (collection of text documents).

This web application's goal is to help people solve minor medical problems from the comfort of their own homes. In the event that something extremely serious occurs that demands expert assistance, the app will highlight nearby medical institutions and provide contact information to the patient. The data is scraped from reputable sources, and the process is fine-tuned by including AI modules to produce the best potential outcome.

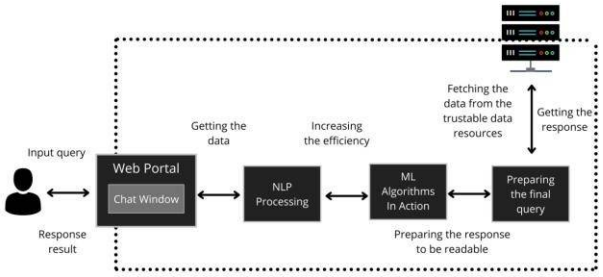


Fig 2. Processing

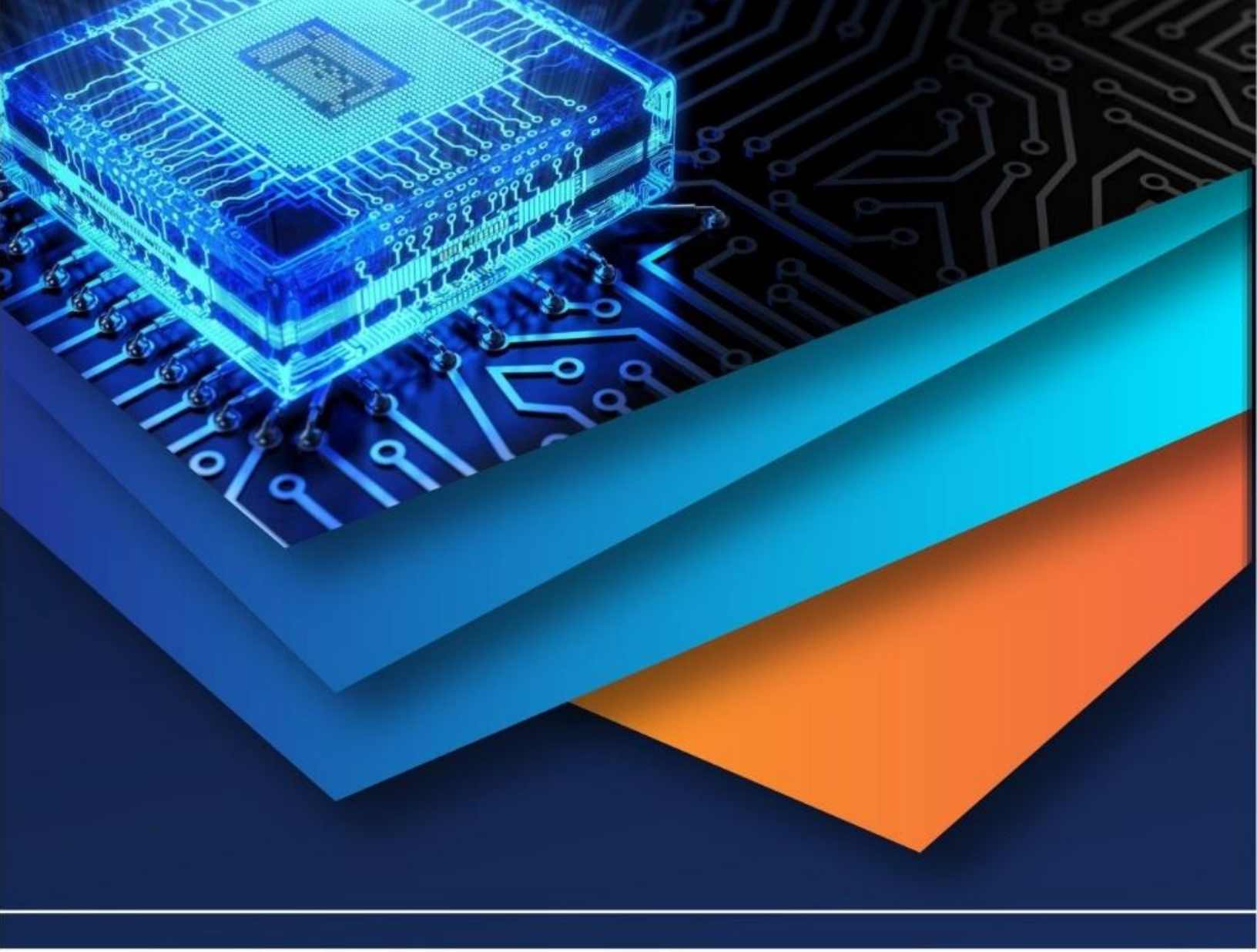
IV. CONCLUSION

Providing medical health experts verified e-health for any health issues or remedies which can be done at home and to help in severe or non-server health complications with 0% mishap chances due to verification done by medical expert verification will help providing e- health in any corner of world on finger tips. Also, saving your time becomes quintessential in today's world but so does taking care of your health and making sure you are medically fit, and in case you are facing even the smallest of the medical issues, seeing a doctor is a must.

But since people have busy schedules and they generally couldn't afford visiting their nearest medical clinic on a regular basis, a Health Care Doctor Bot can be extremely helpful. With digitalization if everything, this provides us an option to have a checkup and ask for medications, suggestions, and other medical related queries at the comfort of our home. This developed version of this project, which is a web application will be easily accessible by anyone, easy to use, and it will allow people to take care of their health in a better way.

REFERENCES

[1] Weizenbaum J. ELIZA—a computer program for the study of natural language communication between man and machine. Commun.ACM.1966,doi: 10.1145/365153.365168.
[2] Rida Sara Khan, Asad Ali Zardar, Zeeshan Bhatti,"AI based Smart Doctor using Decision Tree Algorithm" , 2019.
[3] Palanica A, Flaschner P, Thommandram A, Li M, Fossat Y, "Physicians' Perceptions of Chatbots in Health Care: Cross-Sectional Web-Based Survey", J Med Internet Res 2019;21(4):e12887
[4] Ayanouz Soufyane, Boudhir Anouar Abdelhakim, Mohamed Ben Ahmed, "An Intelligent Chatbot Using NLP and TF-IDF Algorithm for Text Understanding Applied to the Medical Field"2017, November)



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY