AI HEALTH CARE BOT SYSTEM USING PYTHON

Project Report

Submitted for the partial fulfillment of the degree of

Bachelor of Technology

In

Internet of Things (IOT)

Submitted By

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UNDER THE SUPERVISION AND GUIDANCE OF

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माधव प्रौद्योगिकी एवं गवज्ञान संस्थान, ग्वागियर (म.प्र.), भारत
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June 2024

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I hereby declare that the work entitled "AI HEALTH CARE BOT SYSTEM USING PYTHON" is my work, conducted under the supervision of **Dr. Priyanka Garg, Assistant Professor,** during the session Jan-May 2024. The report submitted by me is a record of bonafide work carried out by me.

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This is to certify that the above statement made by the candidates is correct to the best of my knowledge and belief.

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ABSTRACT

This project aims to create an intelligent, health-aware robot using Python. The robot will provide reliable health information through intuitive knowledge, guide users through the process of evaluating symptoms (without diagnosis or medical advice), and improve health with personalized recommendations. It will also connect users to appropriate resources such as local medical centers or useful online information. To achieve this, the bot will use effective language processing and search engine learning capabilities to improve understanding and responses. Furthermore, ethical considerations regarding anonymity, data privacy, and bias reduction will be important in the development and deployment of AI screeners to check this condition. The effectiveness of the robot will be measured by user testing and user satisfaction analysis, accuracy of information provided, and effectiveness of the implementation of the type plan. Future work will include continuous development through ongoing training and updates based on user feedback and advances in clinical expertise. By combining these concepts and addressing cultural issues, the project seeks to provide the benefits of intelligent healthcare robots that encourage people to be knowledgeable about their own health and well-being when it comes to seeking advice from qualified doctors.

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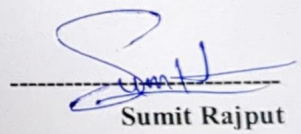

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CONTENT

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ACRONYMS

PEP. 'Python Enhancement Proposal'. This is how Python evolves. You propose an enhancement and if it gets approved that will be featured in the next release. (Actually, it gets more complex than that, see PEP 13). PEPs are a kind of document you need to get used to learn, think about them as special documentation (docs).

BDFL. 'Benevolent Dictator for Life'. A friendly way to refer to Guido van Rossum, creator of Python.

IDE. 'Integrated Development Environment'. A program that helps you gettin your (coding) job done. For R think RStudio. In Python think PyCharm, IDLE, Spyder. The last two are actually acronyms.

IDLE. Recursive acronym for 'Integrated Development and Learning Environment' with is Monty Python related as one oof the members is called Eric Idle. That's the IDE that comes distributed with the standard Python distribution.

Spyder. The anaconda IDE it itself an acronym: 'Scientific PYthon Development EnviRonment'. It will give you a lot of the scientific Python libraries.

Venv. 'Virtual ENVironments'. Isolation tools. It's were you build your programs to avoid any change it the outer environment screws your code without you being able to figure how and why.

CHAPTER 1: INTRODUCTION

1.1 Ways out of business:This is an automated chatbot system designed to answer frequently asked questions of users early, it is a language based tool that can be used to create these bots, but the accuracy of providing the correct answer is low Now as the accuracy of Deep learning algorithms in providing the correct answer is increasing, here we are creating a CHATBOT application using python learning In Depth that will answer these questions of users. To use this technology first, we train deep learning models using training data (answers to all possible questions) and when the user asks questions, the application uses these questions in a training model to predict the correct answers of certain questions. We can only answer the questions using this application.Chabot can be said to be a software that can use intelligence to talk to people. Chabots are generally used to give quick answers to users. Chabot is a well-known name of interactive software that provides new ways for people to interact with computer systems. Traditionally answering questions through a software program requires using a search engine or writing a form. Chabot allows users to ask questions that would only engage in human conversation. There are many popular voice cat boats on the market now: Google Assistant, Alexa and Siri. Chabot currently has a high adoption rate of interactive computers.

1.2 Software requirements

1. Good network speedâ
2. Programming language Pythonâ
3. Tensor flowâ
4. Keras
5. Numpy

1.3 Device must have RAM- At least 4GB/ above Processor- At least intel i5 core/ Windows7+

CHAPTER 2: LITERATURE SURVEY

In today's world, health is the key to growth in every field. Health also requires modern technology and its use for the betterment of this field. As we all know, it is most important for a country to have sufficient technological development. A lot of research has been done in this field to improve the path to health. Outdated diagnostics are still a major obstacle to progress in healthcare. The best way to solve this problem is to use medical chatbots with AI capabilities. It includes speech and text. Here, we use text from Mediots to connect with patients and teach the chatbot to process natural language, We discuss how to process natural language using Recurrent Neural Networks (RNN). Use long-term memory neural networks (LSTM) to train the model sequence by sequence. It also discusses the challenges of using RNN-based chatbots. A diagnostic system using multiple machine learning algorithms is proposed. The article also provides a detailed comparison of four machine learning algorithms for disease prediction based on symptoms. The chatbot will start asking the patient about the symptoms and problems he is experiencing and will suggest the best way to reduce the disease or administer medication based on the user's discomfort. Deep learning is a part of artificial intelligence where networks learn from unstructured or anonymous data without supervision. It is also called deep neural learning or deep neural networks. It uses the same parameters for each input, just as it does the same operation for each input or hidden operation to generate the output [8]. Here, algorithms can be created that will allow computers to analyze data and understand human language. Here, text recognition using deep learning is widely used. Deep learning algorithms are used to improve the capabilities of chatbots. The main focus of this review is the use of medibot using deep learning andneuralnetworks.

CHAPTER 3: METHODOLOGY

3.1 DataSets:

A dataset is a collection of data. For tabular data, the data corresponds to one or more tables of data, where each row of the table represents a variable and each row corresponds to a record of the data in the question. This file lists the values of all variables, such as the height and weight of an item, for each member of the file. All the values are called data. A file can also contain data or written information.

3.2 Requirements:

This section provides detailed information about the requirements-based analysis of the project, physical requirements, hardware requirements, software requirements and system requirements.

3.2.1 Project Scope:

This is an automated chatbot designed to provide early answers to users frequently asked questions using the tools used to create this bot, bu t now due to deep learning its correct answer is given with increased accuracy here using python deep. we are creating a CHATBOT application that will answer users questions by learning. When a question is asked th e application will use that question in the model trai n to predict the exact answer to the question

3.2.2 Existing System:

- Before exploring new technologies, you should review past projects and learn from past ideas (successful or not). This section describes some events from the past century that illustrate the ideas that shaped the current meaning of Chabot. It does not attempt to provide an overview of the history of computing, but rather to explain the concept of chatbots and the basis for interest in creating them.

Disadvantages of the current system:

1. No good support
2. Communication burden
3. High risk
4. Too many employee

3.2.3 Propsed System:

Chatbots can be defined as software that uses artificial intelligence to talk to people. Chatbots are often used to provide quick answers to users. Chatbots are popular names for interactive communication that provide new ways for people tointeract with computer systems. Traditionally, answering questions through a software program would require using a search engine or typing a form. Chatbots allow users to simply Ask the same questions you would ask a human. Currently, chatbots have a highadoptionrate on computerchat platforms. Chatbots can be used anywhere a human interacts with a computer. These are the areas with the fastest

adoption rates.

3.2.4 Functional requirements:

In software engineering, functional requirements describe the system or its components. They describe the tasks that the software must perform. An artifact is nothing more than its input, behavior, and output. It can be computing, data processing, business processes, user interaction, or other specific tasks that define the tasks that the system will perform. Functional requirements software helps you capture the desired behavior of your system. This behavior may indicate what function, service or function or system should be performed.

CHAPTER 4: RESULT AND DISCUSSION

Model evaluation is an important part of the design process. It helps in finding the best model to represent the data and how the selected model will perform in the future. Evaluating the performance of the model using the data used for training is unacceptable in data science because it can produce the best and most efficient models.

4.1 Evaluation Metrics and Result

To evaluate the effectiveness of the model, test models must be available. The choice of measurement model depends on the given machine learning task. The indicators in this project are:

1) Accuracy

2)Loss

4.2 Building the Model

We have prepared the training data, now we will build a 3-layer deep neural network. For this we use the Keras sequential API. After training the model 200 times, our model reached 100% accuracy. Let's save the model as "chatbot_model.h5".

4.3 Predict the response (Graphical User Interface)

Let's create a new " chatapp.py" file to predict the sentence and get the response from the user. We will load the training model and then use the GUI to predict the robot's perception.

The model only tells us the class it belongs to, so we will use some functions to identify the class and then get a random answer from the response.

We re-import the appropriate packages and load the "words. pkl" and "classes. pkl" pickle files that we created while training the model:

CHAPTER 5: CONCLUSION

The purpose of this article is to make people aware of health. Nowadays, many people have a lazy attitude and do not go to the doctor when they are sick, so the use of chatbots will help people diagnose diseases without consulting a doctor. Chatbots will act as virtual doctors. Users will describe the symptoms of the disease and the chatbot will identify the disease and recommend the necessary treatment. The database contains information about diseases and medical procedures.

5.2 FUTURE WORK:

Depending on the development and widespread use of this system, voice and face will be visible in the future, providing benefits to users and allowing them to interact with doctors for the treatment of patients in emergency situations

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