



Peace Pal – AI Chat Bot To Treat Mental Illness

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Abstract: The most important healthcare questions affecting present-day human people are those related to mental health. Young adults and individuals of working age are more inclined to experience these troubles that have a detrimental effect on the person, his or her family, job, society, and economy. Nowadays mental health services are doing well but struggle to keep up with the increasing number of people who need help. Chat bots are like talking robots that have been made to help with mental health issues. They're new but really good at giving basic support to people who need it. Compared to face-to-face consultations, people are more forthcoming in online chats. Nowadays, sentiment analysis and consoling may not be effective with adolescents because they are often reluctant to express their negative emotions in personal interactions. As a result, this project places a firm attention on utilizing virtual programs to recognize depressing or anxious symptoms in individuals and control their stress. The goal of our work is to raise awareness about tools that can help people manage their overall mental wellness and to provide a straightforward and readily available platform where individuals can quickly reach out for support if they are distressed or need to talk about their intrusive and negative thoughts. The platform will have many features which will engage the user to know about various mental disorders as well as users will also get the tips and advice from the chat bot and blogs. Our platform is dedicated to helping people identify their depressive or anxious symptoms, manage their stress, and prevent the onset of mental illness. So on this platform users can chat with our AI agent and read up on various articles designed to help them navigate their emotional and psychological state. It is developed from scratch with the intention of helping people in regulating their moods and eliminating distorted and negative thinking. We will also provide a facility to book an appointment to the nearest psychologist so they can get professional help.

Keywords - Chat bots, mental health care, Anxiety, Depression, Stress management, Emotional wellbeing, mental disease understanding, Professional consultations, Emotional regulation, Negative thought patterns.

I. INTRODUCTION

In recent researches, according to the World Health Organization, there are around 264 million people who suffer from depression and in the worst-case scenario, it tends to suicide. Many cases of stress and anxiety are among the people aged between 15 - 29 years and the source of depression can be diverse among these age groups. The number of people suffering from mental illness is immense but the issue is, many of them consider to be a phase and continue to be stressed without knowing how it affects their brain cells. Stress release is something that should be practiced by every individual. Another issue is about 76-85% of people in the low-middle income countries don't have proper resources or lack trained health care providers. The national health services struggle to keep up with the growing need of resources. While developed countries have 9 mental health providers out of 100,000 people and low-income countries have as little as 0.1 for every 100,000 people. Chat bots could be a real-time savior for such people and the only requirement is network connectivity and you have your bot therapist ready. One of the greatest advantages of the internet is that it shares all its information and provides services to all users. Likewise, chat bot could address short

comings of mental health professional in any area. Even when people have access to health assistance but may delay using the service for many reasons such as thinking that their feelings are not enough to visit a psychiatrist or afraid of the judgment of people around them. Chat bots are always available which will benefit humans as they will not have to wait for an appointment. These tools are not for replacing human health practitioners, but they are helping them to do their jobs better. Chat bots are user friendly and have an interactive platform. There are even non-depressed people who genuinely have a bad day and require motivation to boost their energy. Such individuals can also make use of the chat bot therapist and have a clear idea about their thoughts. Students in need of mental help face a lot of trouble regarding money, location, availability, etc. Studies have proven that the chat bot therapist is a more efficient and cost-effective method of treating depression. Therefore, we have these self-mental healthcare techniques using chat bot for stress reduction and user motivation. The therapist chat bot is the advanced method for therapy. It contains different modules that perform together to make a chat bot functional. The inputs are provided to the chat bot based on which it identifies the level of stress according to which it gives a response to the user by providing constructive thoughts and offers self-help techniques. Using NLP (Natural language processing), the program detects how the user is feeling and then the system shows the content based on his current mood. In this study we have conducted an analysis about the conversational agents (chat bot) that are available and the cognitive behavioral method used in chat bot.

II. EXISTING SYSTEM

Existing systems can't recall what was said in previous conversations, which could lead to inappropriate reactions. To solve this problem, information about the user's mental state must be obtained and stored for use in subsequent conversations with the bot. A chat bot response may upset or dissatisfy a user due to a lack of understanding or emotional intelligence. Existing virtual assistants for psychological health have generic skills that are frequently repetitious, and their interactions frequently resemble reading a self-help book, overall this may cause discomfort and reduce user adherence to such applications. Another critical consideration for the creation of AI-based chat bots is the fact that algorithms are typically trained on enormous data sets. Furthermore trained models can become biased towards specific population groups when the underlying training data is insufficiently sampled or data for some sub-groups is unavailable.

III. PROPOSED SOLUTION

The goal of our work is to raise awareness about tools that can help people manage their overall mental wellness and to provide a straightforward and readily available platform where individuals can quickly reach out for support if they are distressed or need to talk about their intrusive and negative thoughts. The platform will have many features which will engage the user to know about various mental disorders as well as users will also get the tips and advice from the chat bot and blogs. Our platform is dedicated to helping people identify their depressive or anxious symptoms, manage their stress, and prevent the onset of mental illness. So on this platform users can chat with our AI agent and read up on various articles designed to help them navigate their emotional and psychological state. It is developed from scratch with the intention of helping people in regulating their moods and eliminating distorted and negative thinking. We will also provide a facility to book an appointment to the nearest psychologist so they can get professional help.

3.1 DATA COLLECTION

It is a dataset with different tags, and each tag has patterns and responses. These patterns and responses take Question and Answer form. The dataset has a dictionary mapping of dictionaries. First, intents are mapped with tags, patterns, context, and responses, and then each of them is mapped with their queries and keywords. This is a small dataset, and training it over deep neural networks model leads to over fitting the model, to find the optimal learning rate appropriate precautions must be taken while building the model.

3.2 PRE PROCESSING

Pre-processing refers to the transformations applied to our data before providing the data to the algorithm. Data pre-processing technique is used to convert the raw data into an understandable data set. In other words, whenever the information is gathered from various sources it is collected in raw format that isn't possible for the analysis.

3.3 TRAINING DATA AND TEST DATS

- Here data's are split into 3:1 ratio
- For choosing a model we split our data set into train and test
- Training data having 70 percent and testing data having 30 percent
- In this split process preforming based on train_test_split model
- After splitting we get xtrain xtest and ytrain ytest.

3.4 MODULE PREDICTION

The training data is produced in which the input and the output data is provided. The input will be the pattern, and output will be the class the input pattern. The input is first divided into small parts called tokens then they are all lemmatized so that strings can be compared from the chat bot database, this database contains all the responses, and an appropriate message is given as a response to the user.

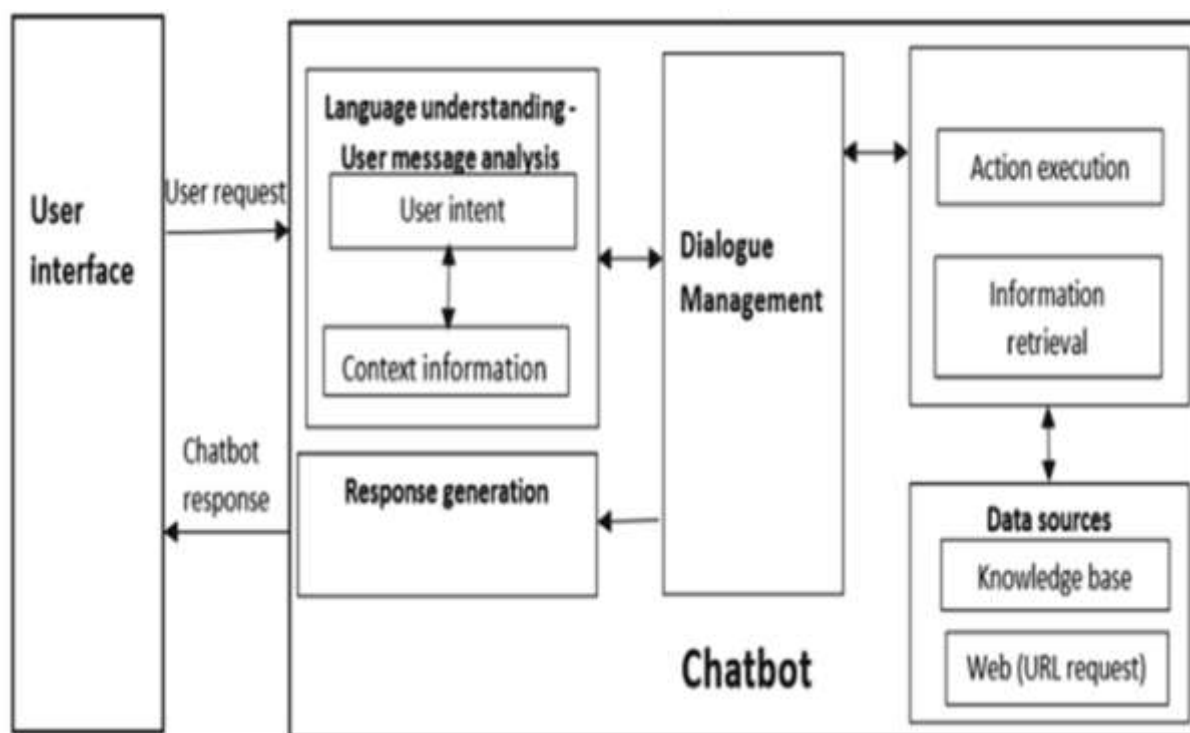


Fig 1: Workflow of the System

IV CONCLUSION

In Conclusion, we have attempted to build a method which will allow the users to talk about their issues without thinking about the societal taboo and from the comfort of their home. It will be very useful for the people who need urgent care and do not have a trustworthy person around them. This will provide a one-step platform where users can find relevant information to help them in their journey. The users will also get the information related to stress management tips and other useful exercises. The user can talk to our chat bot anytime, anywhere from the application.

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