BDI using NLP for Efficient Depression Identification

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Abstract:- Mental disorder leads to difficulties in occupational, educational, social and marital relations. Failure to detect mental disorder denies patients effective treatment. This study aimed to assess the prevalence and nature of mental disorders by attending the physicians. So the main aim of our projects is to analyses the symptoms of individuals and applies each permutation to the situation to detect the disordered person. In our project, the input will be given in the form of speech. The speech will be converted to text using Google API. Then by applying NLP to text, sentiment analysis will do using BDI questions from the person will be asked. The result generated will be stored. From that response whether the person is normal or in depressed state is find out. If the result generated are negative that is the person is found in depresses state, then we will suggest that person some measures to come out that state. The measure suggested can be like visiting a physician, doing exercise or doing things of interest.

***Key Words*: Beck Depression Inventory (BDI), Natural Language Processing (NLP), Depression, Machine Learning.**

1. INTRODUCTION

Depression is the leading cause of disability. The Beck Depression Inventory (BDI) is one of the most world-widely used tools for depression screening and assessment. This inventory is a self-report questionnaire consisting of 21 items, each of which could be scored from 0 to 3 in terms of intensity. Since the BDI was first described by Beck et al.

Emotion can be expressed as happiness, sadness, anger, disgust, fear, surprise and so forth. While board topic of emotion has been studied in psychology for decades, very little effort has been spent on attempting to detect emotion from text. In this work, we assume that emotion reaction of an input sentence is essentially represented by its word appearance.

1.1 Natural Language Processing (NLP)

Natural Language Processing (NLP) is an region of research and application that explores how computers can be used to understand and operate natural language text or speech to do useful things. NLP researcher's goal to gather knowledge on how human beings understand and use language so that appropriate implement and techniques can be developed to make computer systems understand and operate natural languages to executes the desired tasks. Natural language processing (NLP) is the computerized approach to analyze text that is based on both a set of theories and a set of technologies. It is concerned with the interactions between computers and human (natural) languages.

NLP is presenting naturally arising texts at one or more level of linguistic analysis for the motive of achieving human-like language processing for a range of tasks or applications. Applications of NLP include a number of regions of studies, such as machine translation, natural language text processing and characterization, user interfaces, speech recognition, artificial intelligence and expert systems, and so on.

1.2 Beck Depression Inventory

The Beck Depression Inventory (BDI), a self-report questionnaire which consisting of 21 question items, has been the most extensively used for depression assessment. Mental disorder leads to difficulties in occupational, educational, social and marital relations. So the most important goal of our projects is to analyses the symptoms of individuals and applies each permutation to the situation to detect the disordered people.

In our project, the input will be given in the form of speech. The speech will be converted to text by using Google API. Then by applying NLP to text, sentiment analysis will do using BDI questions from the person will be asked. The answer generated will be stored. From that response whether the person is normal or in depressed state is find out.

2. PROPOSED SYSTEM

In this project the user will give the answer of question in the form of speech. This speech is converted into text using Google API. Then by applying NLP to text, sentiment analysis will do using BDI questions. The question is present on system the person answer that question this answer is store in the system.

Using Google API this speech is converted into text. According that answer the person is in depression or normal state is show. The result in the forms of percentage Orin the form of number. From that result suggestion give like visiting a physician, doing exercise or doing things of interest.
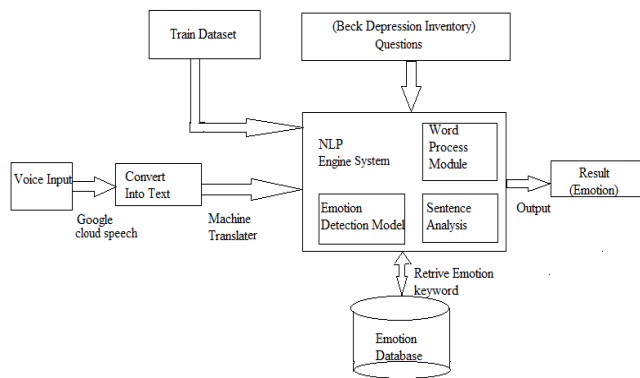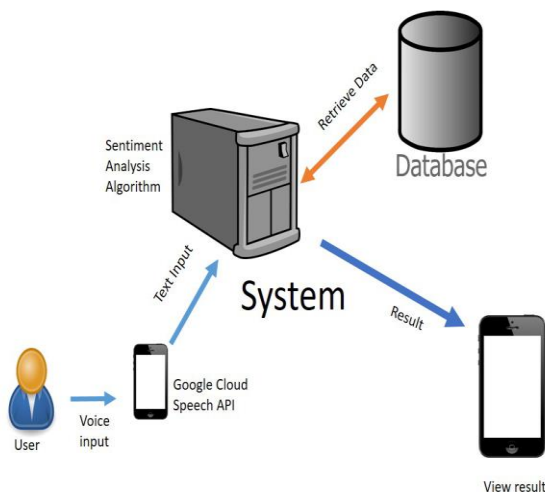
Fig -1: Block Diagram

Architecture Diagram:

Fig -2: Architecture Diagram

3. CONCLUSION

In our project, we propose three emotion identification methods to extract emotion from text input. Both the keywords and Affect Bearing Word (ABW) are the important topic of our project to identify emotion from text. Experiments proved that human motion was deeply depended on the content word of the sentence. As we know that, it is still difficult to do the semantic parsing with machine learning method. Nevertheless, some part of the semantic information and emotional keywords such as exclamatory keywords & direct emotional keywords has been work out of in the system. The output shows that we have got relatively good results for emotion detection from text input.

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