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Mood recognition emotion ontology with texts

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ABSTRACT

Emotion can be expressed in many ways where we can see recognition from speech, image or video frames, facial expression, gestures. Deep Learning has an increasing attention on its significant processing power. The rapid development and universal availability of Social Media analyzing these data using traditional tools and technologies is tough to examine the fundamental behavior of occurrence in networking sites. Emotion detection in text file is essentially content in social media. In this paper we are seeing emotion recognition based on textual data and the techniques are the basic operation of arithmetic such as addition and statements of for loop, else if condition with deep learning and its features.

Keywords: Text, Social Media, Emotion Ontology.

1. INTRODUCTION

Emotional state of a person by inspecting or studying a text file or messages in social media is directly used as emotions. Emotion is expressed as happy, sad, anger, depression, fear, surprise and so on. Social media has evolved drastically that is used for posting and sharing information, intension, thinking, sentiment and other forms of expressions. Data exhaust of data left by the activities during the online activity and transactions. Often raw data are created in the forms of temporary files, cookies, storage capacity, log files and so on. Even the social media has to play a key role in connecting people around the whole world as it offers a broad variety of knowledge taking out tasks as mentioned earlier. Pulling the information from the data and obtain knowledge from these information.

Machine learning techniques, go along with the advances in an existing computing power, plays an important role to purchase the hidden information in this data. However, its vast diversity gives a solution to the problem, which is better to depict the dubious information and knowledge from the data. It is active area for machine learning, where deep learning is a powerful tool to handle with social media analytics problems. Although together with other social media networking sites of applications, web-based applications are increasing day-to-day as most wanted hotspots throughout the globe. More often, it also includes the social computing such as online communities, reputation systems, question and answering systems, prediction systems, recommender systems, and Heterogeneous

Information Network Analysis (HINA). The structure of social media data which represents between the users as nodes and relationships among them as links.

Social media data are enormously increasing each and every day in which it requires a refined patterns, designs and feature extraction for knowledge to discovery them. Most of the conventional learning methods use shallow-structured method for all learning architectures. However, deep learning discusses about the supervised and unsupervised machine learning techniques in which they learn automatically to interpret the hierarchical representations for their classifications. Deep learning has the consideration of the research community team due to the inspiration from the biological observations on human brain processing system. They also are used for its performed various activities in numerous research areas where we get information such as digital image processing, speech to text, and all other filtering. The Deep learning technique has been applied in engineering fields and manufacturing fields of products where they are successfully getting the huge volume or content of digital data. The top most companies in the globe such as Google, Apple, Facebook and Twitter have to deal with the data on daily activities.

However, these companies now a day are waiting for an deep learning oriented for their projects. For an example, using a deep learning approach, Apple's Siri software is an application in the iPhone where it works as a virtual assistant for the iphone in which it proposes a widespread services for counting news related questions to answers to user's or customers questions, by getting reports for latest weather updates, and reminders. At the same time the Google Company applies Deep learning to the great large number of Google Translator's data. Where in contrast, the social media analytics is one of the most recent areas of study research areas. Most of the reviews show that deep learning is available and efficient to solve substantial big data problems. More over in the focus and the research area was based on the deep learning applications such as image classification and speech recognition. They deal with many application domains which including business, education, economics, health informatics etc. In this article, we have some application domains of social media such as user behavior analysis, business analytics, sentiment analysis, and ontology detection where deep learning has been playing a striking role for rich information and knowledge.

2. RELATED WORKS

Social Media Analysis is the web-based technologies that used to transform the communications which is carried over the virtual networks and communities into the interactive section. The interactive Web and the Internet-based applications are composed with the contents that are generated by the user, such as comments or text posts, videos, and data generated through all online communications. Which are accessed from different platforms, for instance, Facebook, Twitter, etc., then evaluate and analyze the data to make business decisions. The data is updating, expanding, and evolving, unceasingly customer experiences, intents, and sentiments. Users are linked together by a small group which makes a network of users at Facebook. In which the network carries to an increasing of several online activities, for instance, adding or removing the friends, liking or disliking the products, joining or leaving the groups.

People or the users are having both kinds of variations in sentiments against each other, which are the positive and negative comments or complements. The advancement of social media platforms refers to individuals who frequently prefer to express their sentiments using these platforms. Whereas, the sentiments such as friends, agreements or disagreements, like or dislikes, trust or distrust, group joining or departing can be into positive connections. Moreover, we see that the online friendship platforms include but they are not limited to Facebook and Twitter.

Video sharing applications and platforms help users to interact and share their videos online publicly or privately. These sites also allow the users to save, share, comment, and control viewership of their shared content.

The article of affective computing in the year 1997 by Since Picard proposed that plays an important role of emotions in human computer interaction. This research domain of deep learning attracted many researchers from computer science, biotechnology, psychology, and cognitive science and so on. In the research field of emotion detection from textual data emerged a huge activity to determine human emotions. Whereas the other side, often now a days there are no standard classifications of "all human emotions" because of the complex nature of human minds. In the year 2001, author named as W. Gerrod Parrot, published a book and made a research on "Emotions In Social Psychology", where it is fully explained about the emotion system and their feelings which are formally classifies following the categories the human emotions through an emotion.

Emotion recognition from speech uses both segment level features likewise as Mel-frequency cepstral coefficients, harmonic to noise ratio, highness then the utterance level features. They also use emotional dyadic motion capture database in the experiments. Emotion recognition from image or video frames with the transfer of learning the images to recognize emotions from static images. The challenge of this is static facial expression and it has obtained accuracy of 56% in database. A deep neural network is an approach to recognize emotion was proposed in the raw face image. It was also found using the CK+ database; component analyses and linear discriminate analyses were used in an emotion recognition system. Emotion recognition from speech and video is an emotion recognition system using both the speech and video, this database contains face images with a facial markers. An audio- visual recognition system was in a multidirectional

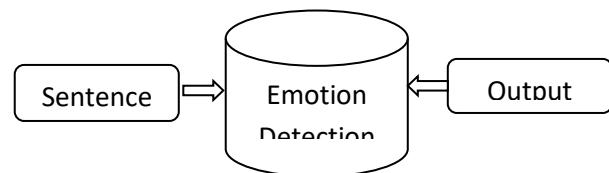
regression ridge let transform based features were utilized for an emotion recognition using prosody and format the features for audio and image matrix features for images was introduced.

The emotions are to be expressed in two modes, and then one will be the vocabulary of the emotional words and the other some of the affective items. The vocabulary mode just simply consists of choosing an emotional word from the database of emotion terms likewise sad, love, hate etc. The other modes uses some interjections like ugh, eww, yuhuu, ahhh, to evaluate ones emotions. In addition to the emotional words have some effects associated with them that they help to define the emotions more accurately. However the emotional subdivisions follow the approach of dividing the emotions into emotion labels, The Ekman's theory of basic emotion model and the Plutchik's bipolar basic emotion model convey this emotion categories. Ekman in this model has divided the emotions into six and they are types of ANGER, DISGUST, FEAR, HAPPINESS, SADNESS and SURPRISE. Plutchik's model is based on the other hand and this is the super set of Ekman's model with two additional categories of classes that is TRUST and ANTICIPATION.

3. EXPERIMENTAL RESULTS

3.1 Proposed Architecture

For emotion recognition it consists of keywords that generate the feeling of a person. Then by its emotion a proposed structure is given that is used for simple and easy understanding.



This model exactly explains by using the keywords, which is entered manually and gives the solution for the emotion in percentage. Whereas the emotion entered in that are given by text analyzes the words which are given in the keyword declaration. The group of words forming a sentence to express the emotion of a person.

3.2 Packages

A package is basically defined as a directory with Python files and a file with the name Finalkeywordmood.py. This is that every directory has a Python path, which contains main directory of the file named Finalkeywordmood.py, will be treated as a package by Python. It is possible to add several modules into a Package data.

Packages are a way of assembling the Python's module with the namespace by using "dotted module names" A package is imported and acted like a "normal" module. Where the packages helps to run the file.

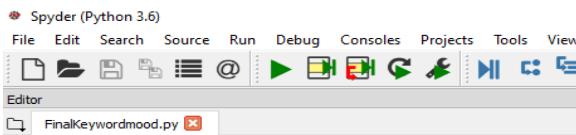
3.3 Keyword Declaration

Keywords are declared to use the reserved keywords in Python. Where we are not able to use a keyword as a variable name, function name or any other identifier. They are also used to define or state the syntax and structure of the Python language in a program. In Python, keywords are most case sensitive.

3.4 Addition

Addition plays a several important role in this day today life and makes a routine work in our essential life. It makes a

communication process and gives an order that does not matter, and it has an associative, meaning that when one adds more than two numbers, the order in which addition is performed does not matter to run this addition. Repeated addition of the same words is equal to same as counting, addition of the sentence does not change any number. Addition also has its own predictable rules concerning for its related operations on numerical tasks such as subtraction and multiplication.



```

Spyder (Python 3.6)
File Edit Search Source Run Debug Consoles Projects Tools View
Editor
FinalKeywordmood.py
1
2 import urllib.request
3 #keywords declaration
4 Happy = ("happy, accidental, advantageous, appropriate, apt,
5 Lucky = ("lucky, advantageous, bright, favorable, felicitous
6 Sad = ("sad, bad, calamitous, dark, dejecting, deplorable, di
7 Angry = ("angry, affronted, annoyed, antagonized, bitter, chi
8 Tired = ("tired, annoy, bore, burn out, bush, collapse, craw
9 Unhappy = ("bleak, bleeding, blue, bummed out, cheerless, cri
10 Fuck = ("fuck, motherfucker, asshole, assfuck, shit, shithole
11 stressed = ("stress, accent, belabor, dwell, feature, harp, i
12 pleasure = ("pleasure, amusement, bliss, comfort, contentmen
13 #(").split(", ")
14

total = hs + ss + angs + tirs
print("Happy Percentage: ",end="")
print(int((hs/total) * 100),end=" %\n")
print("Sad Percentage: ",end="")
print(int((ss/total) * 100),end=" %\n")
print("Angry Percentage: ",end="")
print(int((angs/total) * 100),end=" %\n")
print("Tired Percentage: ",end="")
print(int((tirs/total) * 100),end=" %\n")
...

```

Performing the addition is one of the simplest numerical tasks where we can use it anywhere for basic simple tasks where research on the most efficient implementations of addition continues to this day.

3.5 For Loop

FOR loops are traditionally used when we have a block of codes which is repeatedly running in-between in a fixed number of times. In this the Python for statement recapitulate over the code or words in a sequence of order, executing the block of codes each time. The for statement with using the "while" loop, used whenever a condition needs to be checked each iteration, or in addition to repeat a block of codes.

```

5 def ExactIn(array, item):
6     for i in range(0,len(array)):
7         if array[i] == item:
8             return True
9     return False

```

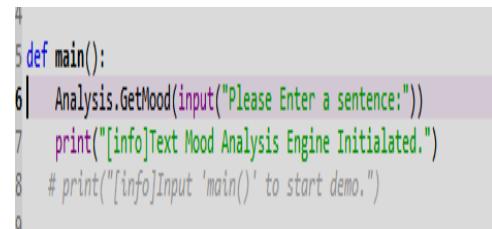
Many languages have conditions in their own syntax of their for loop iteration, such as a relational expression to control if the loop has done, and an increment expression is used to decide the next loop value in the next iteration. In Python this is only controlled generating the appropriate numbers in sequence.

Any object or a sentence with an alterable method can be used in a for loop. Even strings are not having an alterable repeat method. Having a repeat method means that the data can be presented in list form and whereas there are multiple values in an orderly manner. We can define our own iterables by

creating an object with next() and iter() methods. That deals with raw numbers when it comes to for loops in Python.

3.6 Main Method

Some programming languages have a special function or a command called main() function which is used for the execution point in a program file. In this python interpreter, however, it runs each line in an orderly manner from the top of the file to the bottom of the file and has no explicit main() function to run.



```

4
5 def main():
6     Analysis.GetMood(input("Please Enter a sentence:"))
7     print("[info]Text Mood Analysis Engine Initialized.")
8     # print("[info]Input 'main()' to start demo.")
9

```

Suppose if we have a Python file called Finalkeywordmood.py it runs with the following command

Print (name)

If we run the file according to the command given as Finalkeywordmood.py from the command line, then it runs as a Python script. When we run the program as a script, the value of the variable name is set to main function. So the output of the following program will be main.

- **Running python file as a module:** We can also run the Python file as a module. First we have to import this file into another Python program. Where we have a Python file called main.py in the same directory of the program as the Finalkeywordmood.py file
- **Import urllib.request:** Here, we can see that importing a module also runs all the code in the module file. Therefore I can see that instead of displaying main, the program displays the name of the module
- **Please enter a sentence:** The context of running a Python file as a module, then the name of the module itself is assigned to the name variable. However, when we run the program it has a module by importing it in the main.py file. This is the way to define the main() function in Python Programming file.

4. CONCLUSION

Therefore by reviewing the previous works and research works in the domain of the deep learning, I conclude that much of the work has been done in the field especially in the field and domain of textual datasets. This experiment result some of the works with various fields of computational models with their overall system accuracy has been shown below. Hereby I note that there has been a significant improvement in the system accuracies over the time with the improvement or modification of traditional computational approaches with the percentage with the resources and the features generated

Emotion Detection is seen as an important field of research and field to work in human-computer interaction. Therefore, a sufficient amount of work has been done by the researchers to detect emotion from facial to audio information whereas the other recognizing emotions from textual data is still a fresh and hot field in the research area. In this paper, the methods, which are currently being used to detect emotion from text, are seen along with their limitations and here by a new system

architecture is proposed, which would perform efficiently with the accuracy of percentage.

```
(C:\ProgramData\Anaconda3) C:\Users\Administrator\Desktop\phase -2>Finalkeywordmood.py
Please Enter a sentence: Hi i am glad to meet you
Happy Percentage: 100 %
Sad Percentage: 0 %
Angry Percentage: 0 %
Tired Percentage: 0 %
[info]Text Mood Analysis Engine Initiated.

(C:\ProgramData\Anaconda3) C:\Users\Administrator\Desktop\phase -2>
```

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