Text Emotion Detection

Experimental Learning
On
Machine Learning

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Introduction

- Emotion Detection will play a promising role in the field of Artificial Intelligence, especially in the case of Human-Machine Interface development. For Emotion Detection from an artificial intelligence different parameter should be taken into consideration. Various types of techniques are used to detect emotions from a human being like facial expressions, body movements, blood pressure, heart beat and textual information.

What is Emotion?

- A strong Feeling deriving from one's circumstances , mood or relationships with others.
- Emotions are complex , According to some theories ,they are state of feeling that results in physical and phychological changes that influences our behavior.

Types Of Emotion:

- Generally we use 3 types of emotion model to detect emotion from test.
- These are
- Ekman(anger, disgust, fear, joy, sadness and surprise)
- Izard(anger, contempt ,disgust ,distress ,guilt)
- Plutchik (anger, anticipation surprise and test)

Challenges

- Collection of Data: what data should be used for feature extraction? And how to cope up with the continuous changes or evolution of textual expressions used in everyday exchanges?
- Features Choices: which type of emotion indicators can be present in a speech? How contextual data can be extracted? How to combine those features to get a good result?
- Labeling of Emotions: what emotions are going to be assigned in a piece of text? Especially in the case of multiple word combination. And what categories of emotions to be used forthe training dataset?

Emotion Detection Methods

- Keyword-based Methods
- Vector Space Model
- Learning-based Method

Procedure

- Word-based Approach : In the Word-based approach we have used nltk (natural Language Toolkit) package, as it is best to use for human language data. In this first we assign all the Emotion Labels (joy, fear, anger, sadness , happiness) we are going to detect from the text, and also it is important to assign negation words to detect the negative emotions. After this we take the textual input and remove the unnecessary characters from the sentences, which are present there in the textual data from which detection is to be done.

Learning-based Approach: In the Learning-based approach we have used twitter GRAPH API to extract tweets. Extracted tweets will be saved in a excel file, there will be 2 columns, one contains the author another tweet. And we made the dataset for training and testing our machine, which will contain one more column that will be containing emotions that we have predefined. In that we divide the training dataset and testing dataset in the 3:1 ratio. After that we train the machine using the training dataset and we test it.

Conclusion

- we presented our work on text-based emotion classifications using different methods. The advantage of our system is that it is not only based on the single word in the sentence, but it also takes in to the surrounding words and then depicts the result. Moreover it considers users' experiences thanks to the historical data component. Future will consist in comforting the efficiency of the proposed textual emotion deduction modality to existing system. And also to add more emotions other than those features we have used .
- The best feature extraction techniques may improve the classification performance.

References

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THANK YOU