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Survey on Emotion Recognition on Twitter using Python

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ABSTRACT: Emotion analysis of posts is still challenging because of the limited contextual information that they normally contain. In micro-blog environments, emoticons are frequently used and they have clear emotional meanings. They are important emotional signals for micro-blog emotion analysis. Existing studies typically use emoticons as noisy emotion labels or similar emotion indicators to effectively train classifier but overlook their emotional potentiality. I address this issue by constructing an emotional space as a feature representation matrix and projecting emoticons and words into the emotional space based on the semantic composition. To improve the performance of emotion analysis, I propose an Emotion Recognition on Twitter using Python based new Emotion-Semantic Enhanced Convolutional Neural Network (ECNN) Model. ECNN can use emoticon embedding as an emotional space projection operator. By projecting emoticons and words into an emoticon space, it can help identify subjectivity, polarity and emotion in micro-blog environments. It is more capable of capturing emotion semantic than other models, so it can improve the emotion analysis performance. This project provides insights on the design of ECNN for sentimental analysis in other natural language processing tasks.

Keywords: Emotion Recognition, Twitter, Text Mining, Natural Language Processing (NLP), Hashtags, Natural Language Processing, Sentiment Analysis, Convolution Neural Network, Emoticons

I.INTRODUCTION

Twitter is the most popular micro-blogging platform in the world. It is also the fastest growing social network platform and has a dominant position in the area of micro-blogging. More than 500 million registered users post 340 million twitter messages every day, sharing their opinions and daily activities. Compared with regular micro-blogging platforms, Twitter messages are much shorter. You are only allowed to post 140 characters or less in one Twitter message. This feature makes Twitter easier for people to get the main point from the massive amount of information available online. Depending on the need of the users, Twitter users can follow whichever people and information source they prefer. With all of the advantages mentioned above, Twitter thus has become a powerful platform with many kinds of information from worldwide breaking news to purchasing products at home.

In the last few years, the information streams on Twitter have experienced an unbelievable increase in the popularity of this social network. The users dispose a massive amount of information about different aspects. However, not all of the information is useful for users and each user has their own interests and preferences. There is urgency for users to have personalized services. Nowadays, more and more personalized services are provided to benefit the users. People need this personalized service to make their fast-paced lives more efficient. Every day, a large amount of information is published by users on the Twitter platform. These data relate to users behavior and many research studies therefore focus on Twitter and this data collection. One of the research studies in the field of Twitter is user modeling.

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II.LITERATURE SURVEY

A. Radford et al. [1] finds a single unit which performs sentiment analysis. These representations, learned in an unsupervised manner, achieve state of the art on the binary subset of the Stanford Sentiment Treebank. Authors also demonstrate the sentiment unit has a direct influence on the generative process of the model. Simply fixing its value to be positive or negative generates samples with the corresponding positive or negative sentiment.

B. Nejat et al. [2] describe Discourse Parsing and Sentiment Analysis is two fundamental tasks in Natural Language Processing that have been shown to be mutually beneficial. In this work, authors design and compare two neural models for jointly learning both tasks. In this approach, authors first create a vector representation for all the text segments in the input sentence. Next, it applies three different Recursive Neural Net models: one for discourse structure prediction, one for discourse relation prediction and one for sentiment analysis. Finally, authors combine these Neural Nets in two different joint models: Multi-tasking and Pre-training.

N. Nodarakis et al. [3] describe go one step further and develop a novel method for sentiment learning in the MapReduce framework. Their algorithm exploits the hash tags and emoticons inside a tweet, as sentiment labels, and proceeds to a classification procedure of diverse sentiment types in a parallel and distributed manner. Moreover, it utilizes Bloom filters to compact the storage size of intermediate data and boost the performance of the algorithm.

Y. Zhang et al. [4] describe it is currently unknown how sensitive model performance is to changes in these configurations for the task of sentence classification. Authors thus conduct a sensitivity analysis of one-layer CNNs to explore the effect of architecture components on model performance; the aim is to distinguish between important and comparatively inconsequential design decisions for sentence classification. Authors focus on one-layer CNNs (to the exclusion of more complex models) due to their comparative simplicity and strong empirical performance, which makes it a modern standard baseline method akin to Support Vector Machine (SVMs) and logistic regression.

III.GOALS & OBJECTIVES

- To detect emotion of users from Twitter.
- To improve the accuracy of recognition of sentiments and emotions from Twitter.
- To identify Twitter user mood.
- To implement the algorithm and test it for real time Twits datasets.

IV.MOTIVATION

Emotion analysis on tweets concerns the application of automatic methods for predicting the sentiment content and emotional state of a tweet, respectively. Even with huge capabilities of computation, understanding the sentiments and emotions embodied in the analyzed text has remained as one of the challenging tasks on Twitter. Hence this motivates to propose emotion prediction, using tweets dataset.

V.PROPOSED SYSTEM

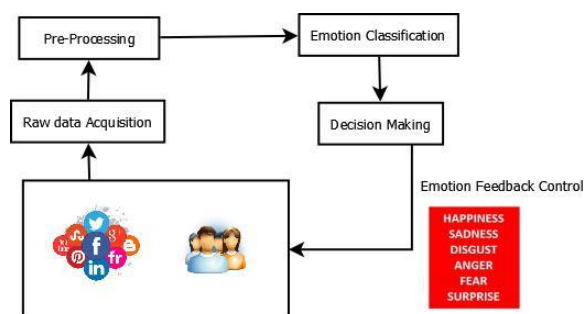


Fig 1: System Architecture



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Therefore, the goal of this work is to design some emotion-based user modeling strategies which exploit these emotional data. This work introduces and analyzes the approaches for detecting emotion on Twitter. First it evaluates and compares the performance of proposed approaches of emotion detection. Then use these approaches of emotion detection to analyze Twitter sample dataset for the purpose of user modeling. Also proposed set of emotion-based user modeling strategies on the Twitter platform based on these detected emotional data.

Furthermore, it evaluate emotion-based user modeling strategies and investigate their impacts on normal user profiles. Proposed system results show that emotion-based user profiles enhance the quality of user profiles and have a better performance.

VI.CONCLUSION

In this proposed system takes a shot at likely the biggest informational collection for feeling expectation, utilizing tweets from years. With the point of building up an all-inclusive feeling location calculation, I didn't limit ourselves just to one area, but instead tried its handiness for various characterizations of feelings.

Since the preparation information was commented on naturally and since I use character-based methodologies, our answer is language free and could undoubtedly be adjusted for different dialects. I trust this work is gainful for the client demonstrating on the Twitter stage and looks to join two hotspots, the feeling and client displaying.

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