

Emotion Correlation Mining Through Deep Learning Models on Natural Language Text

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Abstract— *Emotion analysis from text is one of the hot topics in modern natural language understanding. Embedding and attention mechanisms help a lot with emotion recognition in deep learning methods. Emotion analysis has been attracting researchers' attention. Most previous works in the artificial-intelligence field focus on recognizing emotion rather than mining the reason why emotions are not or wrongly recognized. The correlation among emotions contributes to the failure of emotion recognition. To mine emotion correlation from emotion recognition through text, three kinds of features and two deep neural-network models are presented. The emotion confusion law is extracted through an orthogonal basis. Emotion analysis, as an important traditional branch of knowledge mining, is categorized into three levels, namely: word level, sentence level, and document level.*

I. INTRODUCTION

Misunderstanding occurs when individuals communicate. The understanding of the context varies as individual prior backgrounds differ. The opinion of an individual becomes more profound when obtaining more knowledge on target events. The misunderstanding of initial emotion happens when there is a prior knowledge gap between the information sender and the receiver. Individual emotion turbulence exists. The turbulence is affected by external instant negative or positive mood. Emotion changes along with instant conditions for the same event. For most individuals, it is a common phenomenon in daily life that external conditions influence internal emotions. For example, a sweet-sounding tweet can also be disturbing when one's work performance is judged negatively. On the one hand, the emotion of individuals is complex due to individualized long-term social experiences, interpersonal misunderstandings, and external instant mood influence

II. LITERATURE SURVEY

Kwon, S., Cha, K., Jung, W.C., and Wang, Y et. al. [1] had published Aspects of Rumour Spreading on a Micro blog Network Rumours have been studied for several decades in social and psychological fields, where most studies were theory-driven and relied on surveys due to difficulties in gathering data. Rumour research is now gaining new perspectives, because online social media enable researchers to examine closely various kinds of information dissemination on the Internet. In this paper, we review social psychology literature on rumours and try to identify the key differences in the dissemination of rumours and non-rumours. The insights from this study can shed light on improving automatic classification of rumours and better comprehending Rumour theories in online social media.

Kwon, S., Cha, K., Jung, W.C., and Wang, Y et. al. [2] had published Prominent Features of Rumour Propagation in Online Social Media The problem of identifying rumours is of practical importance especially in online social networks, since information can diffuse more rapidly and widely than the offline counterpart. In this paper, we identify characteristics of rumours by examining the following three aspects of diffusion: temporal, structural, and linguistic. For the temporal characteristics, we propose a new periodic time series model that considers daily and external shock cycles, where the model demonstrates that rumour likely have fluctuations over time. We also identify key structural and linguistic differences in the spread of rumours and non-rumours. Our selected features classify rumours with high precision and recall in the range of 87% to 92%, that is higher than other states of the arts on rumour classification.

Oazvinian,VB.Rosengren,E., and Radev, R et. al. [3] had published Rumour has it: Identifying Misinformation in Micro blogs rumour is commonly defined as a statement whose true value is unverifiable. Rumours may spread misinformation (false information) or disinformation (deliberately false information) on a network of people. Identifying rumours is crucial in online social media where large amounts of information are easily spread across a large network by sources with unverified authority. In this paper, we address the problem of rumour detection in micro blogs and explore the effectiveness of 3 categories of features: content-based, network-based, and micro blog-specific memes for correctly identifying rumours. Moreover, we show how these features are also effective in identifying dis informers, users who endorse a rumour and further help it to spread. We perform our experiments on more than 10,000 manually annotated tweets collected from Twitter and show how our retrieval

model achieves more than 0.95 in Mean Average Precision (MAP). Finally, we believe that our dataset is the first large-scale dataset on rumour detection. It can open new dimensions in analysing online misinformation and other aspects of micro blog conversations.

Castillo, C., Mendoza, M., and Poblete, P et. al. [4] had published a “Information Credibility on Twitter” We analyse the information credibility of news propagated through Twitter, a popular micro blogging service. Previous research has shown that most of the messages posted on Twitter are truthful, but the service is also used to spread misinformation and false rumours, often unintentionally. On this paper we focus on automatic methods for assessing the credibility of a given set of tweets. Specifically, we analyse micro blog postings related to “trending” topics, and classify them as credible or not credible, based on features extracted from them. We use features from users’ posting and re-posting (“re-tweeting”) behaviour, from the text of the posts, and from citations to external sources. We evaluate our methods using a significant number of human assessments about the credibility of items on a recent sample of Twitter postings. Our results shows that there are measurable differences in the way messages propagate, that can be used to classify them automatically as credible or not credible, with precision and recall in the range of 70% to 80%.

Mendoza, M., Poblete, B, and Castillo, C et. al. [5] had published a “Twitter under Crisis: Can we Trust. In this article we explore the behaviour of Twitter users under an emergency situation. In particular, we analyse the activity related to the 2010 earthquake in Chile and characterize Twitter in the hours and days following this disaster. Furthermore, we perform a preliminary study of certain social phenomenon’s, such as the dissemination of false rumours and confirmed news. We analyse how this information propagated through the Twitter network, with the purpose of assessing the reliability of Twitter as an information source under extreme circumstances. Our analysis shows that the propagation of tweets that correspond to rumours differs from tweets that spread news because rumours tend to be questioned more than news by the Twitter community. This result shows that it is possible to detect rumours by using aggregate analysis on tweets.

III. EXISTING SYSTEM:

The use of social networks for political participation and demonstrations is a new and evolving phenomenon occurring in events. Most previous works in the artificial-intelligence field focus on recognizing emotion rather than mining the reason why emotions are not or wrongly recognized. The correlation among emotions contributes to the failure of emotion recognition. The latest is a research domain that is catching the attention of the academic community, and refers to the misuse of hashtags for a different purpose than the one that was originally set, generating confusion to users interested in the topic associated to the original hashtag.

Disadvantage:

1. An approach to classify each of a user’s hashtags and tweets as being either hijacked this may result in group of interest to which the user belongs and the content of the tweets.
2. The evaluation of this approach on real-world Twitter data using both quantitative and qualitative experiments that validate the effectiveness of this proposal.

IV. PROPOSAL SYSTEM:

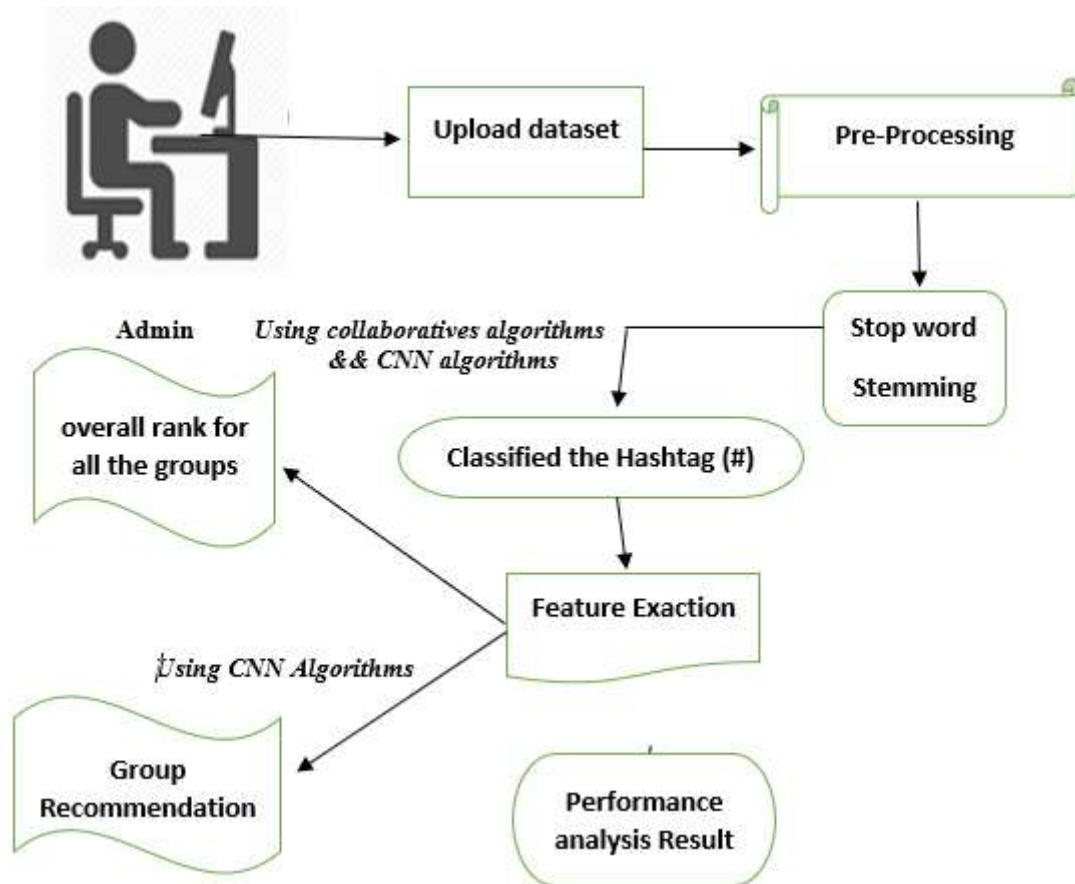
To mine emotion correlation from emotion recognition through text, three kinds of features and two deep neural-network models are presented. The emotion confusion law is extracted through an orthogonal basis.

The emotion evolution law is evaluated from three perspectives: one-step shift, limited-step shifts, and shortest path transfer. The method is validated using three datasets:

- 1) the titles
- 2) the bodies;
- 3) the comments of news articles, covering both objective and subjective texts in varying lengths (long and short). The experimental results show that in subjective comments, emotions are easily mistaken as anger. Comments tend to arouse emotion circulations of love–anger and sadness–anger. In objective news, it is easy to recognize text emotion as love and cause fear–joy circulation

Advantage:

1. A semi-supervised method of classifying hashtags based on the context in which they appear.
2. An approach to automatically detect groups of interest in a given event, based on a semantic analysis of the tweets they post.



V. CONCLUSION

This article mines the correlation of emotions based on the emotion recognition result of state-of-the-art deep learning models. The errors caused by the dataset and models are cut down by designing three kinds of features and two deep neural-network models. The emotion correlation is mined through an emotion confusion law, which is undirected, and an emotion evolution law, which is directed.

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