

CATCHING THE ONLINE USERS AND PREDICTING THEIR EMOTIONS ON WEB: A SURVEY

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Abstract

The World Wide Web (WWW) is a huge collection of documents. It enables the user to search information on the web. Here the search process can be made easier by categorizing the documents on the web using emotion prediction and document classification. It makes the users to search information based on their emotional preferences. Affective text analysis is used to analyze the emotional content of the text. It is relevant for natural language processing (NLP), web and multi model dialogue application. One of the relevant concepts is sentiment analysis and opinion mining. In a recent development may focus on the reader such as multimedia content analysis through subtitles or news headlines analysis. This survey is concerned with emotion prediction and document categorization using Joint Emotion Topic Model and mining social emotions. The user comments, feedbacks are also taken into account in certain strategies so that the emotion of the documents can be more easily predicted and the documents are categorized accurately. This process makes the document retrieval as effectively.

Keywords/Index Terms: Text Mining, Emotions, Natural language processing (NLP), Support Vector Model (SVM), Joint-Emotion Topic Model, Mining Social Emotions.

I.INTRODUCTION

Affective text analysis is the process of analyzing the emotional content of the text. Its main attention is classification the emotion found on news captions gathered from the online news web pages. Text mining deals with extracting more efficient and high-quality information from the text. It also applied in scanning a huge set of natural language definition and models the information for predictive categorization of files in the data set. It Search the indexed information collected on web. Sentiment analysis and opinion mining is applicable in affective text Analysis. It identifies the emotions expressed in news stories, blogs, public forums and product reviews [1]. Based on the user generated social emotions, the documents are classified.

Discovering and mining connections between social emotions and online documents are the task of social affective text analysis [2]. Emotion classifications of web blogs from web blog posts are done using the support vector machine (SVM). The news captions are gathered from the news web pages such as Google news like that. It provides predefined set of six basic emotion categories such as anger, surprise, joy, disgust, fear, sadness [3]. Based on those emotions the documents are classified and retrieved [3].

LDA is a latent dirichlet allocation. It is used as an added layer for emotional modeling. LDA topic model consider the text concurrence information. In that, emotional word topic model allows to correlate the word terms and emotions by means of news topics. This is the most comfortable model for emotion prediction.

II.LITERATURE SURVEY

Title of the Paper: Distributional semantic models for affective text analysis [1]. **Author:** Alexandros Potamianos, Elias losif, Shrikanth Narayanan. Affective text represents the texual emotions of the word. Which analysis the emotional content of the text. Mainly it focus on the sentiment analysis and opinion mining. Sentiment analysis identifies the emotions expressed in news stories and blogs[1]. A set of informations are chosen from the digital media and initial set of processing is done using reader. Sentiwordnet describes itself as a database resource for opinion prediction and it gives group of word definition to the each word net [1].



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Every user has unique opinion about a word, it may be positive or negative. To decide whether a sentence is positive or negative the probability is calculated using the polarity values. These predicted values are matched with the predefined occured values and the sentence is categorized to be either positive or negative. Based on the emotion prediction, the documents are under categorised. It enable the user to retrive the relevant document.

It is flexible model. more accuracy is needed to retrieve the information and it separate only positive and negative type emotions.

Title of the Paper: Mining Social Emotions from Affective Text [2]. **Author:** Shenghua Bao, Shengliang Xu, Li Zhang, Rong Yan, Zhong Su, Dingyi Han, Yong Yu. Based on the user generated social media emotions, the documents are under classified. Emotions are used by the users to express our views and thoughts about a particular document or event. Document classification can be done based on the emotion predictions and it helps the user to fetch more accurate and relevant documents.

Find and mining correlation between the social media emotions and web documents is the main task of social affective text. It enables the user to view the documents and express their thought through the emotional content. Depends on the emotion prediction the documents are classified and retrieved.

In order to determine the social emotions such as touched, warmness, empathy, boredom, sadness, amusement, anger, surprise in the document [2]. These are the eight emotions which are automatically identified. The model of joint emotion topic is used to determine the emotion prediction classification with the combination of Latent Dirichlet Allocation model layer.

This additional layer is augmented to predict emotions from the documents. In this method when a keyword is given to search, a set of latent topics is easily generated. So the affective terms based on the topic is automatically calculated. It determines hidden topics that exhibit strong emotions. Reasonably good number of affective terms can be used for each emotion.

It improves the performance of emotion prediction. A good range of emotions are analyzed. It may suffer from over-fitting when more affective terms are used.

Title of the Paper: SemEval-2007 Task 14: Affective Text [3].**Author:** Carlo Strapparava, Rada Mihalcea. Affective text analysis is the process of analysing the emotional content of the text. The affective tasks focus on the categorisation of emotions and valence in the news caption [3]. Text categorisation is done based on the affective relevances and opinion exploration on the document. The news titles are extracted from the online news web sites, and then analysing the information depends on the particular emotions. Also it provides set of predefined six basic emotional labels such as anger, surprise, joy, disgust, fear, sadness based on that emotions the documents are classified.

Emotions were automatically analysed. Every user has unique opinion. So it makes the classification of emotion as difficult.

Title of the Paper: Measuring Emotions from online news and evaluating public models from Netizens comments: A text mining approach [4].**Author:** Simon Fong.Netizen is the most popular application which makes the user can read and express their views in emotion based opinion and also responsible for newly posted recent updates.

World news such as any unpredictable events and attacks are occurred on any incident. That data is collected and upload on web sites that make the people would attract them by sharing each other messages. The Informations are collected from the internet, in that the specific topic alone to be analysed. So easily the emotions are predicted.



Training dataset is maintained for store the user comments after reading the event on internet. So the Emotion classification can be done easily by using user giving opinion or comments. Artificial neural network process is used to build a mood prediction engine, which gives mood categorisation facility for a given set of news articles. It is a simple process for predict more accuracy. But it analyse only the limited category of topics.

Title of the Paper: Affective text based emotion mining in social media [5].**Author:** D.jennifer, G.saranya. Emotion based document categorisation is the efficient task in social media. The content of the document is analysed based on the predicted emotion from the social media. For each and every emotion in the content of the document is taken to analyse the various category of emotion in the text document for document categorisation.

The relationship between the emotions and the words are also taken to predict the feel of the smiley for identify the accurate emotional feel and measure the term frequency. Various sampling models are used to sample the emotional content of the text document which improves the effectiveness of the document categorisation on the web.

Whenever the user is given query to the server as an emotion based text. It will examine the emotion and categorise the document based on the predicted emotion then it display the set of related document to the user. To improve the concept of emotion mining it gave the advanced concept of emotion prediction in music media such as predicting emotion in the various songs.

It predicts the emotion not only in the text document also in music media like audio songs, videos etc. It is Difficulty in storage of large number of document.

Title Of The Paper: Upar7: A Knowledge based system for headlines sentiment tagging [6].**Author:** F.R. Chaumartin. The word based emotions and the valence are evaluated in the news headlines. The valance is preceded as a discussion of emotion, which is intrinsic attractiveness or aversiveness of the situation. In that parsing technique is used for measure the head word of the title. It also detects the positive and negative contraction between the words.

Then, the de-capitalization process is used to solve the problem of unwanted capitalized words in the news title. So the improper capitalization words are converted into de-capitalized words and it count the emotion and valance frequency value of the word. This detected value calculation is done using senti word net and word net affect process. Based on this process, the emotions are predicted from the news headlines.

Successfully it develops a linguistic rule based system for provide more accuracy result. Detection of valance accuracy is lower when compare with the prediction of emotion annotation.

Title of the Paper: Simple text mining for sentiment analysis of political figure using naive bayes classifier method [7].**Author:** Yustinus Eko Soelistio, Martinus Raditia Sigit Surendra. The sentiment analysis analyze the emotional content which is expressed in the news article. It determines the contraction emotion between the news content. Which is positive one or negative one. Here the naive bayes classifier model is used to detect whether the article is potive or negative opinion about the particular politician.

The set of information about the article is collected from the digital media. After collecting the information the analysis processing is done followed by these step such as reader, parser, cleanser, analyser and display [7]. To classify the sentence which is positive or negative, the probability of each word is calculated using polarity value calculation.

It provides the variation between the calculation so it facilitate to predict and categorise the sentence which is positive or negative. This prediction makes high accuracy rate. It achieves high accuracy rate. Emotions are classified into either positive or negative. So other emotions are cant able to predict.



Title of the Paper: Emotion Classification Using Web Blog Corpora[8].**Author:** Changhua Yang, Kevin Hsin-Yih Lin, Hsin-His Chen. The emotions are expressed by the user using emotional content of the text. In the web blogs, the emotions were posted by the user using emotional based text content. In that each web user as unique opinion about the particular information so it makes the process as easier to classify the documents. For better categorisation of documents it requires support vector machine technique.

It gives efficient categorisation of document based on emotions. It has ability to classify the exact categorisation of the documents. But previous sentence were not consider to make prediction of emotion.

No.	Symbol	Emotion	Meaning
1.	:-)	Нарру	Home, friends, vacation, function
2.	:-(Anger	Judgement, hurt, harassment, disappointment
3.	:,-(Crying	Death, emotion, pain.
4.	:0	Surprise	Increment, gift, award, bonus.
5.	%-)	Confused	Unpleasant, confusing, annoying, unfair
6.	:-\$	Embarrassed	Insult, inexperienced, attacks, criticism.
7.	<3	Love	Affection, friendship, marriage.
8.	;-)	Winking	Please, cheer, kidding.
9.	:(Sadness	Suicide, incident, injure, accident
10.	:-P	Tongue sticking	Foolishness, joke, ineptness

Table1: Sample Symbol, Emotion and Their Meaning

III. CONCLUSION

This survey is more concerned about identifying the web users, using the concept of emotion prediction for online news collections. Limited no of emotions used and predicted the web users. To look for more in depth level, more no of emotion can be used to predict the web user with accuracy. Sentiment analysis determines only the positive and negative sentiments from digital media. But the opinion of viewers helps efficient categorisation of emotions. So the collection of online news information from the news websites makes the process of retrieving the relevant content using emotion expressed by the web users. SVM classifiers are used in emotion classification at sentence level whereas LDA topic model consider the text concurrences in the document level. The joint-emotion topic model is an enhanced model that analyse many emotions and also it makes the document categorization as very effectively.

The future studies concentrates on studying about developed methods to enhance the document categorization using a better way of emotion prediction. In addition, to add more number of smileys's to predict the relevant web users on the web and also would have idea to include generation of smiley's and group of smiley's to make advanced technique of predicting emotions expressed by the web users.

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