

SENTIMENTS BASED STUDY AND ITS INFLUENCE IN MODELING ELECTION SCENARIO

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ABSTRACT

Social media has emerged as a platform where general public can freely express their opinions, views, sentiments, and thoughts about any political leader or political party. Often some news agencies manipulate the news and delivers it in such a manner that it favors one political party and goes against other. But the sentiments expressed by masses on social media is the true image of any political leader or political party. This research paper is focused on elaborating about sentiments and opinions along with their types. The paper also discusses about classifying the keywords in any post or tweet as positive, negative, or neutral sentiment.

Keywords – opinions, sentiments, sentiment analysis, social media.

I. INTRODUCTION

There is very common practice in India of people claiming that the news channel are always bias towards some political parties and have soft corner and favor other political parties. Different political parties accuse the mainstream news agencies of favoring their opposition, and to large extent it is true [1, 3]. Today, with the growth of internet access, general public is free to express their opinions related to elections and have a better understanding of prevailing political scenario. More and more people are posting their views, opinions, and sentiments about current political affairs through social networking sites, blogs, and microblogs. It was found that during Indian general election in the year 2014, in the time period of four months, the conversations having relevance with Indian elections were more than twice the conversations that took place during whole of the year 2013 and the twitter users account of Indians were also doubled. The detailed description of sentiments and opinions are discussed as under [2, 3].

A. Sentiments

Sentiment analysis involves categorizing opinions in text into categories like "positive" or "negative" often with an implied category of "neutral" as shown in Fig. 1. Sentiment analysis is also called opinion mining or voice of the customer. Sentiment analysis is the computational job of automatically determining what feelings a writer is expressing in text. Sentiment is often framed as a binary distinction (positive vs. negative), but it can

also be a more fine-grained, like identifying the specific emotion an author is expressing (like fear, joy or anger). Sentiment analysis is used for many applications, especially in business intelligence [3,4]. Some examples of applications for sentiment analysis include:

- Analyzing the social media discussion around a certain topic
- Evaluating survey responses
- Determining whether product reviews are positive or negative



Fig. 1 The figure depicts the classification of sentiments

Some key points to be considered in sentiment analysis are mentioned as under [3, 5].

- Create or find a list of words associated with strongly positive or negative sentiment.
- Count the number of positive and negative words in the text.
- Analyze the mix of positive to negative words. Many positive words and few negative words indicates positive sentiment, while many negative words and few positive words indicates negative sentiment.

The initial step of lexicon, i.e. creating a word list is a bit tedious task and is time consuming. Often there is a need to modify the lexicon if one is discussing on a specific topic. The meaning of the one same word changes as per the sentence or situation in which it is used. For example, the word “sick” can have both positive and negative sentiment. If one is talking about a pet store which sells a lot of sick animals, then surely here the word “sick” reflect a negative sentiment. But if the same “sick” word is used for talking about a skateboarding instructor who teaches a lot of sick flips, the word reflects a positive sentiment [3, 6, 7].

Usually, besides identifying the opinion, these systems extract attributes of the expression e.g.:

- *Polarity*: if the speaker express a *positive* or *negative* opinion.
- *Subject*: the thing that is being talked about.
- *Opinion holder*: the person, or entity that expresses the opinion.

Sentiment analysis is a much popular topic and of great interest in several applications. As information on internet is constantly growing, many text expressing opinions are available on social media. This sentiment analysis is prominently used in product reviews, marketing analysis, public relations, net promoter scoring, product feedback, and customer service [3, 8, 9].

Fig. 2 depicts the different approaches involved in sentiment analysis.

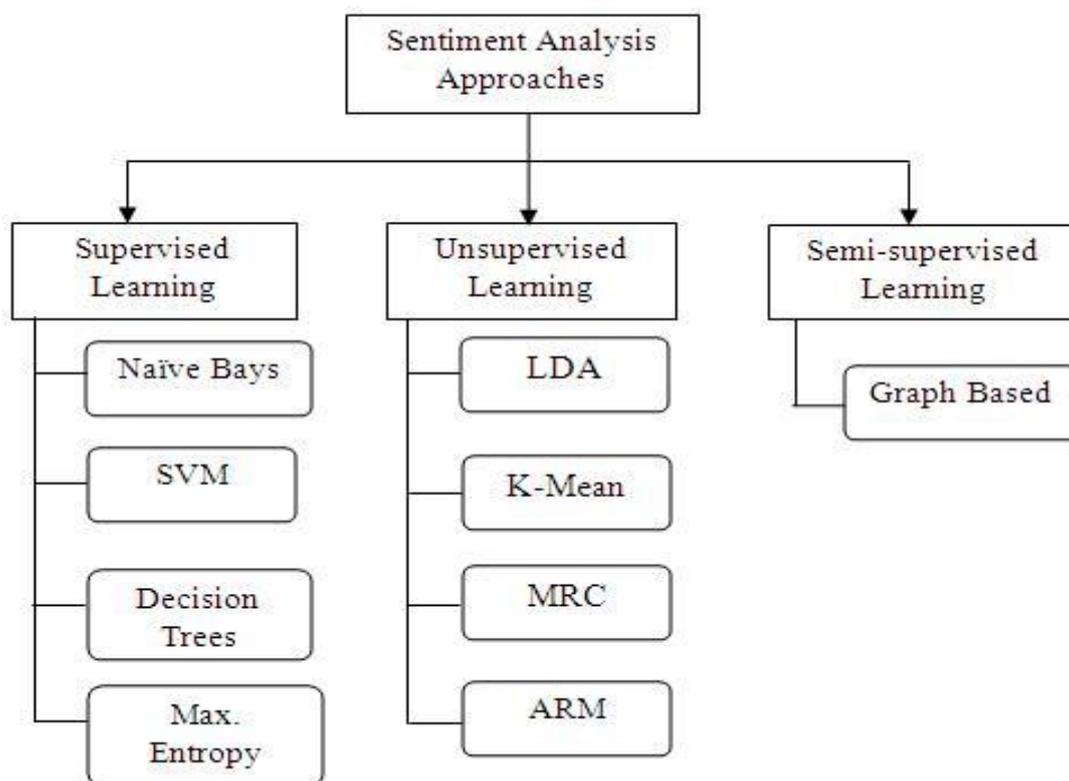


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B. Opinions

Broadly text information is divided into two categories, facts and opinions. Facts are objective expressions and opinions are usually subjective expressions relevant to people appraisals, sentiments, and feelings towards an subject of interest. When one classifies a sentence as subjective or objective, it is referred as subjectivity classification [3, 10]. When sentence is classified as positive, negative or neutral opinion, it is referred as polarity classification.

Types of opinions

The opinions are broadly classified into below mentioned categories [3, 11, 12].

Direct opinion Vs. Comparative opinions

- Direct opinion provides an opinion directly about an entity. For instance: “The picture quality of camera X is poor”. This sentence directly gives a negative opinion about camera X.
- In case of comparative opinion, the opinion is conveyed by performing comparison of entity with another. For instance: “The picture quality of camera X is better than that of camera Y”. The comparative opinion conveys differences or similarities between two or more entities by making use of superlative form of an

adverb or an adjective. The sentence under study establishes a positive opinion about camera X and negative opinion about camera Y.

Explicit vs. Implicit opinions

- An opinion explicitly expressed in a subjective sentence is referred as explicit opinion. For instance, the below mentioned sentence expresses an explicit positive opinion.

“The voice quality of this phone is amazing”.

- An opinion implied or indirect in an objective sentence is called an implicit opinion. For instance, the below mentioned sentence expresses an implicit negative opinion.

“The earphone broke in two days.”

II. INFLUENCE OF SOCIAL MEDIA ON ELECTIONS

The impact of social media on general public in regard with elections is very deep. Fig. 3 shows the logos of the famous social media platforms [3, 16, 17].



Fig. 3 The figure shows the logos of popular social media sources

The influence made by social media are briefed as follows:

i. Voter Behavior Will be Better Predicted

The social networks has proved highly valuable for general voters when it comes to gain information about any political leader or political party. The user's post act as source to gain knowledge about voter's preferences, the issues influencing decision making. The voting pool can be better understood by the user's news feed [13].

ii. Candidates Using Social Media More Personally

The political leaders have started using their accounts for creating one-on-one connection. The political territory has caught up with this. The political leaders can use this as a tool for creating powerful connections between them and their voters to initiate interest and positively affect voter turnout.

iii. Diversified Social Media Channels

An evaluation of Facebook data during the campaign showed that more than 95% of buzz around a candidate were determined by posts outside of that candidate's primary campaign page. This cycle saw the rise of a more distributed social media presence for both sides. Each candidate had their own primary Facebook page, but many other pages were also formed and sustained for family members, campaign substitutes, and the National Committees of both parties [3, 18, 19]. In the future, we should see more of this expanded but interrelated approach to social media campaigning. Fig. 4 shows the glimpse of the news channel depicting sentiment comparison of different political leader among masses on twitter [3, 14, 15].



Fig. 4 The figure shows the glimpse of the news channel depicting sentiment comparison of different political leader among masses on twitter

III. CLASSIFICATION OF SENTIMENT RELEVANT WORDS

Fig. 5 shows the flowchart describing the process followed for creating the dictionaries having positive, negative, and neutral sentiments.

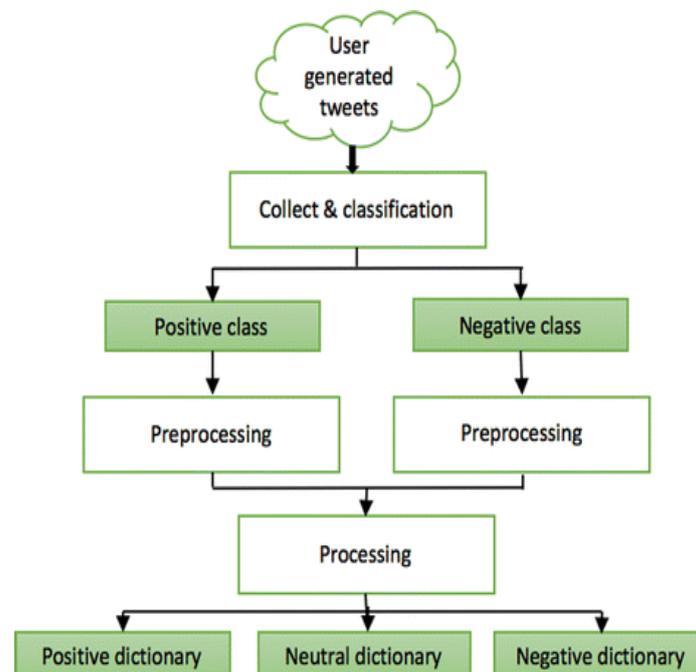


Fig. 5 The figure shows the flowchart describing the process followed for creating the dictionaries having positive, negative, and neutral sentiments

Algorithm for dictionaries creation

- Firstly, the user tweets are generated.
- These tweets are then collected and classified broadly into positive class and negative class.
- This step is followed by performing the preprocessing of both the classes and obtaining processed and relevant data.
- Finally, the processed data is further classified into three separate dictionaries: positive dictionary, negative dictionary, and neutral dictionary.

IV. CONCLUSION

Social media has evolved as a major source for general public to express their opinions and sentiments. Election results can be fairly predicted by analyzing and studying the people posts, sentiments, and chats on social networking sites like Facebook and Twitter. The research paper discussed the about sentiments and its type. The paper also elaborated about opinions and its types. The classification of sentiments done in the paper can be effectively used to create appropriate dictionaries and further analyzing the posts and tweets of general public to know about their views regarding any upcoming elections.

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