DOI: http://dx.doi.org/10.26483/ijarcs.v15i6.7158

Volume 15, No. 6, November-December 2024

ISSN No. 0976-5697

International Journal of Advanced Research in Computer Science

REVIEW ARTICLE

Available Online at www.ijarcs.info

EXPLORATORY TOOLS FOR SENTIMENT ANALYSIS – AN OVER VIEW

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Abstract: Social media is usually very fast in delivering content of any different kinds of events. People share their opinions or sentiments on Products or text content or Apps. Generally, customer show more interest as what kinds of opinions gave for the products to know what existing user did. We can acquire data and can-do processing, and that processed data is sued for sentiment analysis. It is very useful for business analysis, production, quality, sales. Processing different multidimensional data is very challenging task. In this paper we have tried to explore what are the best tools in generating good output for sentiment analysis.

Keywords: Text mining, Sentiment analysis, Data mining

INTRODUCTION

Sentiment Analysis (SA) is a text mining tool used to extract the force of sentiment expressed by a tweet/opinion/review on a specified topic. Sentiment Analysis is used as a text classification tool for analysing incoming messages and tells whether the sentiment in the underlying message is positive, negative our neutral. In other words, the sentiment score is a numerical summary of the message that indicates the sentiment of the author/sender, which is not directly measurable. By using Machine Learning (ML) algorithms it is possible to understand the volume of positive and negative sentiments on a product in real time and take actionable steps. It is also possible to segregate the messages according to factors like gender, location, income groups etc.
Sentiment classified into two either positive or negative. There will be five-point scale to calculated the polarity score in making decision as very negative, negative, neutral, positive and very positive. This is known as fine-grained Sentiment Analysis.

What Is a Sentiment Analysis Tool?

Sentiment analysis tool is a method of analysing the text into easily understandable format, where a customer feels about the brand, product or service. These tools work automatically by detecting the emotions and urgency in any online conversations and assigning them based on polarity scores.

Benefits of Sentiment Analysis Tools

Sentiment analysis can make broad insights in identifying the hidden market opinions or sentiments. These are important in identifying

- Market gaps
- Retaining the customers and
- Increase the sales according to user request

Approaches of Sentiment Analysis

Sentiment Polarity Detection also known to be opinion mining is a method of extracting positive or negative opinions from unlabelled text. SA classification has several important characteristics like tasks, features, and techniques. Some important sentiment polarity tasks are

a) *Identifying the whether text is objective / subjective and*
b) *Text has a positive/negative orientation.*
c) *Defining the level of the classification)*
d) *Polarity classification of sentiment is classified into document-level, sentence-level and phrase level classification.*

Sentiment Analysis Features

Speed and Scale

The most important sentiment analysis features is speed. In Sentiment analysis, speed indicates velocity is a measure which can analyse pieces of content.

Accuracy

The other important criteria in calculating sentiment analysis is accuracy

Semantic attributes

These contain contextual features that represent the semantic orientation of surrounding text. Semantic attributes have been useful for sentence-level sentiment classification

Text tokenization and sentiment scores

"Sentimetr" is designed to quickly calculate text polarity and machine learning models. It is loaded into R-environment using install.packages ("sentimentr") and library(sentimentr). We can get dictionary of sentiment words that will be available with *install.packages("ndjson") and library(ndjson), and for* text tokenization we use *library (tidyverse)* and *library (tokenizers).*

In calculating the text for sentiment score, sometimes not all words will give polarity or sentiment like some may give Positive and some may give negative polarities given by experts and named as *lexicon.* For instance, the polarity of word in the context availing answers from several students is

different from the same word while evaluating a review on a cinema or a car model. Joker's lexicon is one such dictionary which is used by R software for evaluating the sentiments of general reviews. The words which are used in a lexicon are known as *polarity words* which carry a score of +1 for positive sentiment and -1 for negative sentiment.

Data Mining Tools for Sentiment Analysis

There were lot of sentiment tools that can be available in extracting several opinions from verticals. Using different kinds of tools for calculating sentiment scores based on customer insights. Data mining tools that were used in extracting different text features from different kinds of datasets. There are good data mining tools like Naïve Bayesian and K-NN classifiers Bahrawi (2019) which gives good accuracy in extracting the features of different sentiments. Random forest algorithm is another supervised classifier used to identify emotional analysis or Opinion mining from significant data in finding different feature extractions of text data processing.

Natural Language processing

To check whether the given data is either positive or negative, can be tested using NLP (Natural Language Processing)

Software Requirements for Sentiment Analysis

In calculating sentiment analysis, we need software tools for calculating polarity scores with good accuracy. Different software tools like "R – Studio", "Python", "Weka" "SPSS" and "Spreadsheets Solutions" which gives very nice solutions for different multidimensional data.

CONCLUSIONS

In this paper our intention is to explore different tools for calucalting polarity scores with different text messages to find out different sentiments or opinions.

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