ISSN(Online): 2320-9801
ISSN (Print) : 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 7, Issue 3, March 2019

Multi-Strategy Sentiment Analysis of Consumer Reviews Based on Semantic Fuzziness

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ABSTRACT: In this paper, we define each of those aspects as a dimension of product, and present a multi-dimensional sentiment analysis approach for E-commerce reviews. In particular, we employ a sentiment lexicon expanding mechanism to remove the word ambiguity among different dimensions, and propose an algorithm for sentiment analysis on E-commerce reviews based on rules and a dimensional sentiment lexicon. Create word net dictionary: In this type of document, all positive words are written out separately and all negative words are written out at one place. Extraction of dataset: First dataset of publicly available product reviews were downloaded from the internet and then the passage extraction framework identifies important sections of the text which is most representative of the content of the document. More specifically, this step involves identifying and extracting those specific product features and the opinions on them.

KEYWORDS: Intermittently connected network; routing; context aware; delivery probability; environmental context aware; historical context aware; personal context aware.

I.INTRODUCTION

Social media website is defined as “a website that facilitates meeting people, finding like minds, communicating and sharing content, and building community”; this kind of website allows or encourages various types of activities, such as commercial, social, or a combination of the two. Social media categories include digital library, e-commerce, entertainment, forum, geolocation, social bookmark, social review, social game, and social network. Social network is the subcategory of social media, which is the social structure of people who are joined by common interest. Social media are social channels of communication using web-based technologies, desktop computers, and mobile technologies. These technologies create highly interactive platforms through which individuals, communities, and organizations can share information, discuss, rate, comment, and modify user-generated and online contents. These advancements enable communication among businesses, organizations, communities, and individuals. Social media technologies change the way individuals and large organizations communicate, and they are increasingly being developed.

Wide range of applications in business and public policy uses sentiment analysis. Sentimental analysis is now being used from specific product marketing to antisocial behaviour recognition. Businesses and organizations have always been concerned about how they are perceived by the public. This concern results from a variety of motivations, including marketing and public relations. Before the era of Internet, the only way for an organization to track its reputation in the media was to hire someone for the specific task of reading newspapers and manually compiling lists of positive, negative and neutral references to the organization, it could undertake expensive surveys of uncertain validity. Today, many newspapers are published online. Some of them publish

dedicated online editions, while others publish the pages of their print edition in PDF. In addition to newspapers, there are a wide range of opinionated articles posted online in blogs and other social media. This opens up the possibility of automatically detecting positive or negative mentions of an organization in articles published online,

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thereby dramatically reducing the effort required to collect this type of information. To this end, Organizations are becoming increasingly interested in acquiring fine sentiment analysis from news articles. Fine-grained sentiment analysis is an extremely challenging problem because of the variety of ways in which opinions can be expressed. News articles present an even greater challenge, as they usually avoid overt indicators of attitudes. However, despite their apparent neutrality, news articles can still bear polarity if they describe events that are objectively positive or negative. Many techniques used for sentiment analysis involve naïve approaches based on spotting certain keywords which reveal the author or speaker's emotions. We use naïve performs fine-grained sentiment analysis to classify sentences as positive, negative or neutral.

II.EXISTING SYSTEM

- E-commerce reviews reveal the customers' attitudes on the products, which are very helpful for customers to know other people's opinions on interested products. Meanwhile, producers are able to learn the public sentiment on their products being sold in E-commerce platforms.
- Generally, E-commerce reviews involve many aspects of products, e.g., appearance, quality, price, logistics, and so on.
- Therefore, sentiment analysis on E-commerce reviews has to cope with those different aspects.
- The problem with public auction is that the participation of the general public is very limited.

DISADVANTAGES OF EXISTING SYSTEM

- Cyber Bullying
- Higher Risk of Fraud and identity Theft
- Privacy issues

III.PROPOSED SYSTEM

- Recommender System (RS): Special type of information filtering system that provides a prediction that assists the user in evaluating items from a large collection that the user is likely to find interesting or useful.
- Status update (micropost): Short message, shared in an online social platform, expressing an activity, state of mind or opinion.
- Folksonomy: Whole set of tags that constitutes an unstructured collaborative knowledge classification scheme in a social tagging system.
- This step involves identifying and extracting those specific product features and the opinions on them.
- The aim of the project is to socialize the auction so that people from far & wide and even across the continent can participate in it.

ADVANTAGES OF PROPOSED SYSTEM

- Collaborative Filtering
- Content Based Filtering
- Clustering
- Categorization

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IV.SYSTEM ANALYSIS AND DESIGN

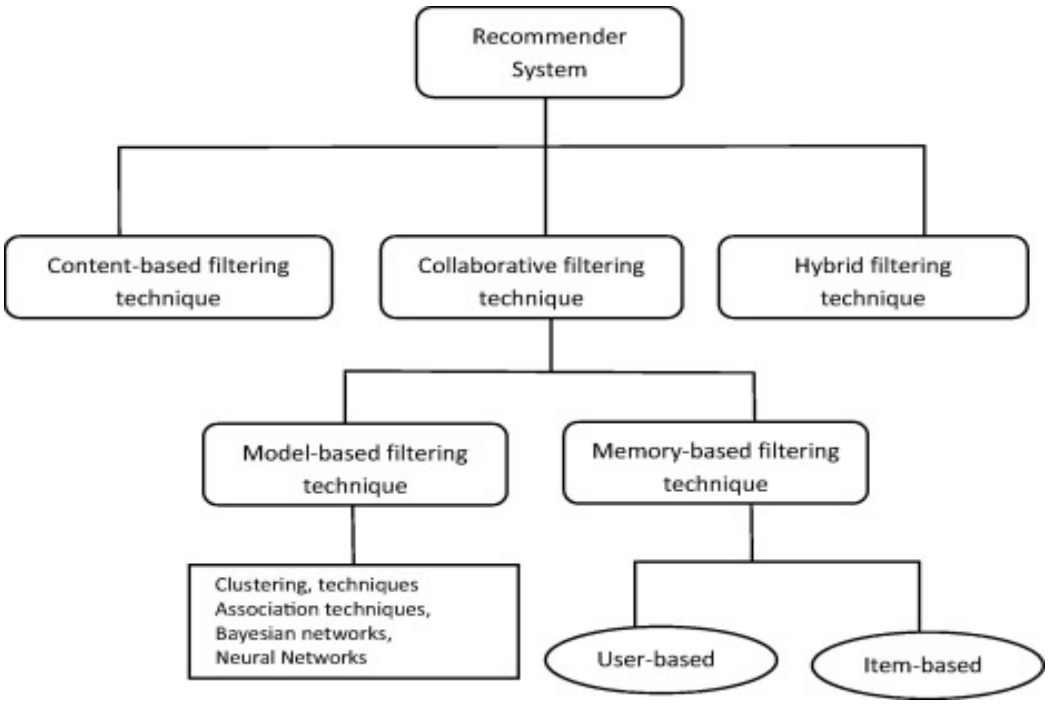

Fig: Architecture Diagram

V.MODULES

Used Modules:

- Collection of User's Reviews
- Pre-Processing
- Feature Selection
- Sentiment Word Identification
- Sentiment Polarity Identification
- Sentiment Classification
- Analysis of Reviews

V.1. Modules Description

i.Collection of User's Reviews

Reviews are necessary for doing the Sentiment Analysis Task. For the Collection of reviews there are different techniques which are used in this survey. The reviews can be a structured, semi-structured and unstructured type. Sentiment Analysis research, there are open source framework where researcher can get their data for the research purpose. R is one of the programming language and software environment for statistical computing and graphics supported by the R Foundation for Statistical Computing. By installing required packages and authentication process of

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social website, to crawl the reviews from that site is easy task. Once we have our text data with us then we can use that data for Pre-processing purpose.

ii.Pre-Processing

In pre-processing following are some tasks:

• Removing URLs, Special characters, Numbers, Punctuations etc.

• Removing Stop words

• Removal of Retweets (in case of twitter dataset)

• Stemming

• Tokenization

iii.Feature Selection

Feature selection from pre-processed text is the difficult task in sentiment analysis. The main goal of the feature selection is to decrease the dimensionality of the feature space and thus computational cost. Feature selection will reduce the over fitting of the learning scheme to the training data. In different machine learning algorithms were analysed on a news review dataset with different feature selection techniques features are usually unigrams, bigrams and grams. POS tagging is used in feature selection techniques.

iv.Sentiment Word Identification

Sentiment word identification is a fundamental work in numerous applications of sentiment analysis and opinion mining, such as review mining, opinion holder finding, and review classification. Sentiment words can be classified into positive, negative and neutral words.

v.Sentiment Polarity Identification

The basic task in SA is classifying the polarity of a given text at the document, sentence, or feature. The polarity is in three category i.e. Positive, Negative and Neutral. Polarity identification is done by using different lexicons which help to calculate sentiment score, sentiment strength etc.

vi.Sentiment Classification

Sentiment classification of news review dataset and product review dataset is done using supervised machine learning approaches like naïve Bayes, SVM, Maximum Entropy etc. Accuracy is depends on which dataset is used for which classification methods. In the case of Supervised machine learning approaches Training dataset is used to train the classification model which then help to classify the test data.

vii.Analysis of Reviews

Finally Analysis of result is important to make decision to individual and industry. In case of news reviews if more result is positive then user can decide to go that news event.Analysis is used in business intelligence.

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VI.CONCLUSION

In this proposed work, we used Twitter API using R tool which is open source. Tweets from twitter has been collected and gives to pre-processing task in that tool. R open source tool is used in text mining and also to crawl streaming data from social media like twitter and Facebook etc. Movie reviews data also pre-processed in R tool for sentiment analysis and opinion mining. There are different supervised and unsupervised approaches and different lexicons, dictionaries and corpus based methods which are very helpful in Sentiment Analysis. Different dataset are available for movie review, product review, Epinions dataset etc. In this method sentiment score has been calculated and counted number of positive, negative and neutral tweets for given Hashtag and can predict the public opinion of particular event. As per above analysis of different #Hashtags tweets for sentiment analysis, individual and industry can find the public opinion behind that event.

VII.FUTURE ENHANCEMENT

Future work about product review sentiment analysis is find out aspects and their polarity of the product which helps for consumer to take decision to buy online products on e-commerce site. Aspect level sentiment analysis gives detail information about that product and about movie review, director of that movie should know what exactly user know from particular movie which is possible in aspect based sentiment analysis. In Hotel reviews same like movie, hotel owner should know what items people like from their hotel and what other items need for customers.

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