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Sentiment Analysis Of Movie Reviews Using Advanced Techniques

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ABSTRACT:

An increasing number of internet users are providing detailed analyses of various films on various review sites, often highlighting the differences and similarities between them. Customers may express themselves via positive, negative, or neutral comments and reviews using the form. Having a website like this is crucial. We use sentiment analysis to evaluate the movie reviews in this study so that people may make educated selections.It was also evaluated in comparison to another ML classifier. A machine learning method is an example of a Random Forest with Gini Index-based Feature Selection SVM.The Gini Index method in conjunction with the Random Forest classifier yields better results in terms of Accuracy, RMSE, Precision, and Recall..

INTRODUCTION

The Internet has evolved into a really practical platform for the seamless sharing of ideas, online education, product reviews, and movie trailers, all made possible by the incredible advancements in technology. With millions of reviews available online for services or goods, it becomes challenging to understand and convey the user's sentiments [1]. An individual's sentiments may be described as their positive, negative, neutral, or neutral emotions towards many things, including products, services, events, and issues. Using online input, "feeling analysis" examines people's reactions and feelings. Subjectivity analysis, opinion mining, sentiment mining, opinion extraction, effect analyses, review mining, and emotion analyses are all synonyms for sensitivity analysis [2]. Figure 1 displays the Flow Chart for Sentiment Analysis. Research in the new area of sentiment analytics involves extracting subjective information from source materials by means of computer processing, linguistics, text analysis, natural language processing, and the polarity of emotions or opinions. The goal of sentiment analysis, a branch of language processing, is to identify user opinions and feelings via the use of statisticalmethods.classify them as neutral, positive, or negative. Finding out how someone feels about a topic is the main goal of sentiment analysis.

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A writer's attitude might reflect their evaluation, their emotional condition, or the intended emotional impact they want their readers to feel. Opinion mining helps us distinguish between high-quality and low-quality information.The study of attitudes and views could be useful for both consumers and businesses. Consumers may find a plethora of user evaluations to help them decide if a product is good quality or not, but reading and analyzing all of them can be a time-consuming ordeal. A company has to communicate with a lot of people to find out what people think of its products, market them, predict how sales will be, and keep its reputation intact. As a result, sentiment analysis has the potential to help the business and its customers achieve their goals.

Opinion mining is often carried out at three different levels. Here they are:

A. Analyzing the emotion of documents.

B. Research on sentiment at the sentence level.

Section C: Sentiment analysis using aspects.

SUBJECTIVE WORK

In their presentation of a novel classification approach, Cagatay CATAL et al.[4] set out to investigate the potential benefits of using several classifiers for Turkish sentiment categorization. Combining the Vote Algorithm with Naive Bayes, SVM, and Bagging was the approach used. Its use as a standalone classifier increased SVM parameters. According to the results of the experiments conducted on Turkish sentiment classification datasets, the use of meta classifiers increases the power of many classifier systems, which in turn improve the performance of individual classifiers. The proposed approach outperformed both Vector Support Machines and Naive Bayes, the latter of which was shown to be the most effective individual classification system for the aforementioned datasets. When building prediction systems based on multiple classifier systems (MCS), it is important to consider individual classifier optimization parameters. MCS is an excellent approach for sentiment categorization. An experimental research on sentimental analysis at the aspect level of film reviews was published by Rajesh Piryani et al. [5]. User reviews of films often include a wide range of topics, including but not limited to: direction, acting, choreography, films themselves, etc. Their rule-based approach can parse movie reviews for their constituent parts, identify opposing viewpoints, and catalogue the emotional extremes associated with each. A summary of the system's opinion is generated at the aspect level. On two film datasets, the experimental design is evaluated. The results have great potential for use in a comprehensive opinion profiling system, since they are accurate. In this study, Asha S. Manek et al. [6] used several feature selection methods including naïve bays and SVM and movie watching. A number of processes are used in the project, including the collection of film reviews, pre-processing, feature selection, and classification techniques. The gini index method enhances SVM classification performance on large datasets and SVM correlation selection on small datasets, according to the results.

Project Proposal

Inputting Data (A) You may feed the film review analyzer in two different ways. The first is to provide a list of reviewers for the JSON file format. You may also use the TMDB ID for the movie's title. For instances when the TMDB ID is used to access and save TMDB [27] JSON API reviews in the MySQL database. Following the review process, the system applies sentiment analysis to the top ten reviews of a given book.

Datasets	No. of Reviews
IMDb movie reviews (http://www.imdb.com/)	1100
IMDb movie reviews (http://www.imdb.com/)	2300
Cornell Polarity Data set v1.0 (http://www.cs.cornell.edu/people/pabo/movie-review-data/)	3400
Cornell Polarity Data set v1.0+ IMDb movie reviews (http://www.cs.cornell.edu/people/pabo/movie-review-data/ http://www.imdb.com/)	4500

Part of Speech Tagging POS is used to dispel a sentence to obtain characteristics from a sentence[2]. Each word is tagged in POS tagging. It is used to identify the location of the word inside the grammar context. POS tags assist identify nouns, sentences, verbs

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and
adjectives in a sentence. After POS Taging, a chosen word is eliminated for function selection and opinion words.
Features and Opinion Words Extraction All opinions are chosen from the phrase. The algorithm collects all the names, sentences, verbal terms and adjectives from the film review and compares them with the current word list. These words are categorised according to their polarity. For example, the word "good" is positive. On the other hand, the characteristics are chosen on the basis of the number of opinions expressed. If a review word is greater above the threshold value, then the list of characteristics is appended. The API is trained for film reviews exclusively using keywords and words, which include "good performance,""strong narrative" and "fantastic performance."
Identify Sentence Polarity After all the characteristics and opinions have been extracted, finding the polarity of the phrase is fairly simple. The polarity ofsentence follows the same principles as the arithmetic. A negative feeling includes all negative words of opinion and a good feeling contains all positive words of opinion. A bad feeling may include a good term for opinion. For example, in a film review, "This film storey is not excellent" phrase. In this phrase "good" is a positive polarity, while "not" is a negative word. The total polarity of this phrase is thus negative.
Identify Review Polarity The whole polarity of the review relies on a number of positive or negative phrases contained in the review. If the overall number of positive statements exceeds the total number of negative words, then the polarity of the examination is positive. Similarly, if the total negative sentence is more than the entire number of positive sentences, the review polarity will be negative.
Classification of Review Once, the polarity of the review is computed. Review categorised polarity and polarity (Positive or Negative) [28] and stored for future study. Further analysis can forecast the box office collection and can also anticipate the total success of the film.

CONCLUSION

This article classifies film reviews as either positively or negatively polarized. It is possible to classify an extensive library of cinema reviews using the author's approach. The system's strength lies in its ability to display sentiment analysis results on any operating system via its web-based API, which produces JSON output. The system is functioning well, as shown in Table 1. Producers may track the progress of their picture using this. Future work on a variety of things, including mobile phones, computers, apparel, etc., may make use of this API.

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