



ISSN(Online): 2319-8753
ISSN (Print) : 2347-6710

International Journal of Innovative Research in Science, Engineering and Technology

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

Visit: www.ijirset.com

Vol. 8, Issue 5, May 2019

Sentiment Analysis on College Student's and Teachers Review

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ABSTRACT: The rapid growth of internet users in most of the websites, blogs and forums allow the users to write their opinions as reviews for various products or services. Sentiment analysis tries to determine the sentiment of a writer about some aspects and also the overall contextual polarity of a document. Sentiment Analysis (SA) or Opinion Mining (OM) is a process for tracking the mood of the people about any particular topic. The aim of designing our blog is to analyze the students' comments for each teacher. The objective is to analyze the sentiments or opinions expressed in textual form by staff and students. Admin can analyze large comment with Naïve Baye's algorithm.

KEYWORDS: NLP, Review, Preprocessing, Supervised Machine learning,

I. INTRODUCTION

I. BACKGROUND:

Opinion mining (also known as **sentiment analysis**) uses **natural language processing(NLP,)** **statistics** or **machine learning** methods to systematically identify, extract, quantify, and study express subjective information. Sentiment analysis is widely applied to materials such as reviews and survey responses. Generally speaking, sentiment analysis aims to determine the attitude of a speaker, writer, or other subject with respect to some topic or event.

II. MOTIVATION

Need to develop the web application that will saves admintimeto analyze large comment. There are many algorithm to analyze review on shopping site but not for college teacher analyzing .

II. REVIEW OF LITERATURE

1.propose a novel approach to predicting sentiment in online textualmessages such astweets andreviews,based on an unsupervised dependency parsing-based text classification method that leverages a variety of natural language processing techniques and sentiment features primarily derived from sentiment lexicons.These lexicons were created by means of a semi automatic polarity expansion algorithminordertoimproveaccuracyinspecificapplicationdomains[1].

2. The system is based on a supervised statistical text classification approach leveraging a variety of surface-form, semantic, and sentiment features. The sentiment features are primarily derived from novel high-coverage tweet-specific sentiment lexicons. These lexicons are automatically generated from tweets with sentiment-word hashtags and from tweets with emoticons. To adequately capture the sentiment of words in negated contexts, a separate sentiment lexicon is generated for negated words[2].



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2. looked at several methods that could be used for learning sentiment from students feedback. Thus, Naive Bayes, Complement Naive Bayes (CNB), Maximum Entropy and Support Vector Machine (SVM) were trained using real students' feedback. Two classifiers stand out as better at learning sentiment[3].

3. Paper is performed in three steps: (1) mining product features that have been commented on by customers; (2) identifying opinion sentences in each review and deciding whether each opinion sentence is positive or negative; (3) summarizing the results. This paper proposes several novel techniques to perform these tasks. Our experimental results using reviews of a number of products sold online demonstrate the effectiveness of the techniques[3].

[4] present a lexicon-based approach to extracting sentiment from text. The Semantic Orientation CALculator (SO-CAL) uses dictionaries of words annotated with their semantic orientation (polarity and strength), and incorporates intensification and negation. SO-CAL is applied to the polarity classification task, the process of assigning a positive or negative label to a text that captures the text's opinion towards its main subject matter. We show that SO-CAL's performance is consistent across domains and in completely unseen data[4].

[5] This paper aims to address this aspect by applying several text analytics methods on students' feedback. The paper not only presents a sentiment analysis based metric, which is shown to be highly correlated with the aggregated Likert scale scores, but also provides new insight into a teacher's performance with the help of tag clouds, sentiment score, and other frequency-based filters.

[6] propose a new entity-level sentiment analysis method for Twitter. The method first adopts a lexiconbased approach to perform entity-level sentiment analysis. This method can give high precision, but low recall. To improve recall, additional tweets that are likely to be opinionated are identified automatically by exploiting the information in the result of the lexicon-based method[5].

6. objective of this article is to present a hybrid approach to the Sentiment Analysis problem at the sentence level. This new method uses natural language processing (NLP) essential techniques, a sentiment lexicon enhanced with the assistance of SentiWordNet, and fuzzy sets to estimate the semantic orientation polarity and its intensity for sentences, which provides a foundation for computing with sentiments. The proposed hybrid method is applied to three different data-sets and the results achieved are compared to those obtained using Naïve Bayes and Maximum Entropy techniques[6].

7. This paper practical skills in natural language processing using the Python programming language and the Natural Language Toolkit (NLTK) open source library. If you're interested in developing web applications, analyzing multilingual news sources, or documenting endangered languages -- or if you're simply curious to have a programmer's perspective on how human language works -- you'll find Natural Language Processing with Python both fascinating and immensely useful[7].

III. SYSTEM ARCHITECTURE

PROPOSED SYSTEM ARCHITECTURE

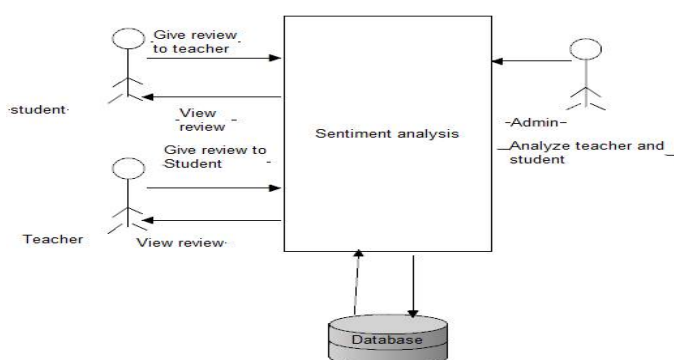


Fig.1: System architecture

SYSTEM OVERVIEW-

1) **Admin:** In ADMIN model, firstly admin login this system he view students marks. He will analyze review of student and teacher.

2) **Student:** In this Student Module user firstly registration form submitted then another task will cover like login, view mark of own. Give review to teacher. He will view own review given by other user.

3) **Teacher:** In this teacher register to system and login. He add marks of student and view marks of student. He will give review to student. He will view own result.

1.Review: The review are given as feedbacks or reviews which are posted by staff and students about the teacher and student.

2.Data Collection and Preprocessing : Feedbacks / comments are collected from the staff and students that are based on the exam results of the college. They give their reviews or feedbacks on any aspect of a result. Preprocessing deals with removing irrelevant attributes, removing noise, handle missing values, in order to make the data ready for the analysis.

3.Sentiment analysis: The review are analyzed by naïve baye's classification of machine learning. It takes review as input and gives predicted class.

IV. MATHEMATICAL MODEL

Set Theory:

Let us consider S as a system for automatically find best resources.

$S = \{ \dots \}$

INPUT:

- Identify the inputs

$F = \{f_1, f_2, f_3, \dots, f_n\}$ 'F' as set of functions to execute commands.

$I = \{i_1, i_2, i_3, \dots\}$ 'I' sets of inputs to the function set

$O = \{o_1, o_2, o_3, \dots\}$ 'O' Set of outputs from the function sets,

$S = \{I, F, O\}$

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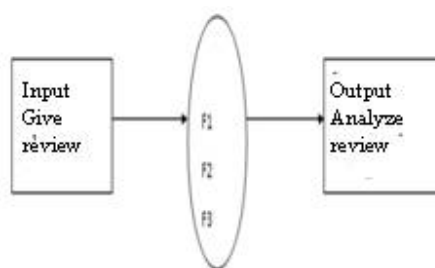
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- I = {Query submitted by the user, i.e. Give review}
O = {Output of desired query, i.e. View all review}
F = {Functions implemented to get the output, i.e. Naïve Bayes.Admin analyze all review}

Mapping diagram



Mapping diagram

V.ALGORITHM

Naive Baye's

A Naive Bayes classifier is a simple probability based algorithm. Naive Bayes gives better accuracy over different classifier and holistic algorithms. Naive Bayes is a best supervised machine learning algorithm. In simple terms, a Naive Bayes classifier assumes that the presence (or absence) of a particular feature of a class is unrelated to the presence (or absence) of any other feature, given the class variable.

Naive Baye's: This algorithm is used classify review is positive or negative that will used review is positive or negative

Input: Review

Output: Predicated class of review.

Working:

Step 1: Take review

Step 2: Preprocess the review

Step 3: Pass to naive bayes class.

Step 4: Get positive and negative score according to specify its dictionary.

Step 5: Get max score and declare as positive or negative.

Step 6: Predicated class of all review

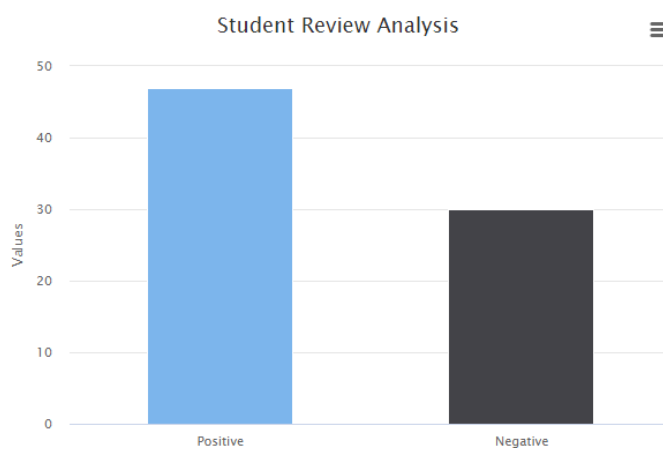
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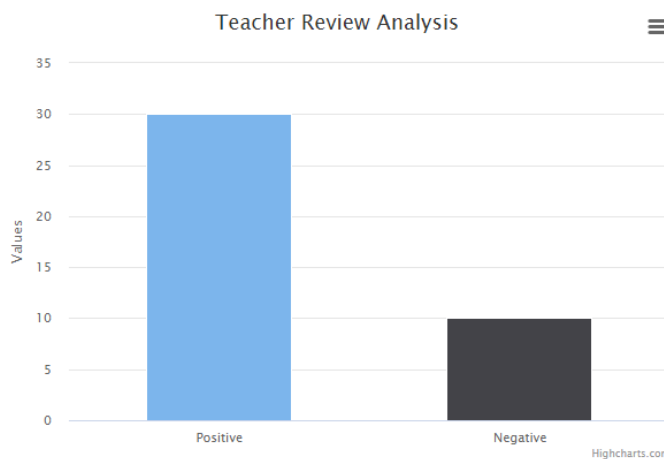
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VLRESULT



Graph 01: Student Review analysis.

Graph 02: Shows Student review analysis by Machine learning algorithm. That takes all review given by teacher. Graph shows No. of positive and negative students review account that are analyzed by system.



Graph 02: Student Review analysis.

Graph 02: Shows teachers review analysis by Machine learning algorithm. That takes all review given by student. Graph shows No. of positive and negative teachers review account that are analyzed by system..



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VII. CONCLUSION

Proposed system is used for college/school. It takes input as large review of students and teachers. Gives all review are positive or negative with the naïve bayes algorithm. It helps to reduce the time of admin to read large review and analyze it separately. Teacher add each student marks and student can view his marks. Admin analyze the marks.

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