Review Rating Based On Word Alignment Model

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Abstract— The use of social media has created many opportunities for people to publicly voice their opinions, but when they are meant to have an opinion it makes a serious problem. Mining opinion targets and opinion words from online reviews are important tasks for fine-grained opinion mining, the key component of which involves detecting opinion relations among words. It is difficult to analyze each and every review since reviews are expressed in different ways so mining opinions and analyzing reviews from the text is important.

The main Theme of this paper is to create a system for analyzing opinions which implies judgment of different consumer products. In opinion mining, extracting opinion targets and opinion words are two fundamental tasks. An opinion target is defined as the object about which users express their opinions typically noun or noun phrases. Opinion words are the words that are used to express users opinions.

Mapping of opinion target and opinion words is done using word alignment model and a graph is constructed representing the final view of the product. From these reviews, customers can obtain first-hand assessments of product information and direct supervision of their purchase actions. Meanwhile manufacturers can obtain immediate feedback and opportunities to improve the quality of their products in a timely fashion. It is difficult to analyze each and every review since reviews are expressed in different ways so mining opinions and analyzing reviews from the text is important. Our main theme is to create a system for analyzing opinions which implies judgment of different consumer products.

Keywords: Opinion words, opinion Target, Reviews, Mining

After mining the opinion associations between opinion target candidates and opinion word candidates, we complete the construction of the Opinion Relation Graph. We then calculate the confidence of each opinion target/word candidate on this graph, and the candidates with higher confidence than a threshold are extracted as opinion targets or opinion words.

We assume that two candidates are likely to belong to a similar category if they are modified by similar opinion words or modify similar opinion targets. If we know one of them to be an opinion target/word, the other one has a high probability of being an opinion target/word. Thus, we can forward the confidences among different candidates, which indicates that the graph-based algorithms are applicable.

2. PROBLEM STATEMENT

The product is rated by mining the textual reviews with the concept of opinion mining by extracting opinion targets and opinion words and mapping them using word alignment model. Recently, a number of online shopping customers have dramatically increased due to the rapid growth of ecommerce, and the increase of online merchants. To enhance the customer satisfaction, merchants and product manufacturers allow customers to review or express their opinions on the products or services. The customers can now post a review of products at Ecommerce site, e.g., flipcart.com, amazon.com, cnet.com, and opinions.com. These online customer reviews, thereafter, become a cognitive source of information which is very useful for both potential customers and product manufacturers. Customers have utilized this piece of this information to support their decision on whether to purchase the product. For product manufacturer perspective, understanding the preferences of customers is highly valuable for product development, marketing and consumer relationship management. Since customer feedbacks influence other customer's decision, the review documents have become an important source of information for business organizations to take it development plans.

To Map opinion target and opinion words using word alignment model and a graph is constructed representing the final view of the product.

To obtain first hand assessments of product information and direct supervision of their purchase actions, To provide the manufacture that they can obtain immediate feedback and opportunities to improve the quality of their products in a timely fashion.

To provide more accuracy the product is rated by mining the textual reviews with the concept of opinion mining by extracting opinion targets and opinion words and mapping them using word alignment model. Capturing opinion
relations between opinion targets and opinion words using the word alignment model.

We formulate opinion relation identification as a word alignment process. To extract and analyze opinions from online reviews, it is unsatisfactory to merely obtain the overall sentiment about a product. In most cases, customers expect to find fine-grained sentiments about an aspect or feature of a product that is reviewed. For example: “This phone has a colourful and big screen, but its LCD resolution is very disappointing.”

Readers expect to know that the reviewer expresses a positive opinion of the phone’s screen and a negative opinion of the screen’s resolution, not just the reviewer’s overall sentiment. To full-fill this aim, both opinion targets and opinion words must be detected. First, however, it is necessary to extract and construct an opinion target list and an opinion word lexicon, both of which can provide prior knowledge that is useful for fine-grained opinion mining.

An opinion target is defined as the object about which users express their opinions, typically as nouns or noun phrases. In the above example, “screen” and “LCD resolution” are two opinion targets. Opinion targets usually are product features or attributes. Accordingly this subtask is also called as product feature extraction. In addition, opinion words are the words that are used to express users’ opinions. In the above example, “colourful”, “big” and “disappointing” are three opinion words. Constructing an opinion words lexicon is also important because the lexicon is beneficial for identifying opinion expressions.

We formulate opinion targets/words extraction as a co-ranking task. All nouns/noun phrases are regarded as opinion target candidates, and all adjectives/verbs are regarded as opinion word candidates, which are widely adopted by pervious method. Then each candidate will be assigned a confidence and ranked, and the candidates with higher confidence than a threshold will be extracted as the results.

II. PROBLEM FORMULATION

Iterative and Incremental development is a combination of both iterative design or iterative method and incremental build model for development.(Fig1) During software development, more than one iteration of the software development cycle may be in progress at the same time.”This process may be described as an "evolutionary acquisition" or "incremental build approach."

In incremental model the whole requirement is divided into various builds. During each iteration, the development module goes through the requirements, design, implementation and testing phases. Each subsequent release of the module adds function to the previous release. The process continues till the complete system is ready as per the requirement. The key to successful use of an iterative software development lifecycle is rigorous validation of requirements.

Activities undertaken during requirements gathering and analysis: This phase consists of two major activities: requirements gathering and requirements analysis.

In the first step, all the reviews from various clients for various products are collected. This forms the requirements gathering phase. Then the unstructured in the review is resolved to eliminate all the inconsistencies, incompleteness and ambiguities existing in the product reviews. This forms the requirement analysis phase. Activities undertaken during design: This phase aims to transform the requirements into implementation of product rating. We follow object oriented approach to identify various actors like the review submitter, product manager, review analyzer. The review submitter is summarized as the process that submits reviews of the clients onto the cloud. Functionality of the product manager is summarized as the process that fetches reviews of the specified product from the cloud for use by review analyzer and that associates the reviews submitted by review submitter with the correct product.

Functionality of the review analyzer is summarized as the process that gives the rating of the product. Activities undertaken during coding: This phase transforms the design into a source code. The objects identified in the design phase i.e, review submitter, product manager, review analyzer are implemented in the run time system to give rating for the product the customer is interested in. Logic for review submitter. The review submitter interacts with user interface for submitting reviews onto the cloud. It also interacts with product manager to verify that the reviews are associated to correct product. Logic for product manager: Fetches reviews of the specified product from the cloud for use by review analyzer. Associate the reviews submitted by review submitter with the correct product.

Logic for review analyzer: The review analyzer first gets the reviews of the product from the cloud through the product manager. Then for each of the review in the input dataset, the review analyzer does a sentence to word split in order to extract opinion words and opinion targets. Next for every opinion word of the review, it checks if the opinion word is present in the opinion dataset through word alignment method. If there is a match, then the opinion word is mapped to standard metric (good, average, poor) and the product is rated, if a match is not found, the only the features or specifications of the product are added onto the target dataset that can be used by the client for reference.
Product Entity (): Interface provides the user with a product entry option. The standard qwerty keypad is used for the entry.

View graph (): This function displays graph giving a comparison between good bad and average review count.

Data structures used: Array-list structure provides necessary reviews required for generation of the graph.

Error handling: There may be chances that product field is not filled. So, in this scenario, to check the product field to be filled is done and if it fails, an alert message pops up saying that enter the product field and redirects to the same form for further data insertions.

3.2. Admin module:

Function name and Purpose:
Assign reviews (): The reviews of the products are added into database by the admin.

These reviews are scrapped from e-commerce websites.

Fetch from parse (): When user enters a product name all the reviews of that particular product is fetched from the cloud.

Data structures used: All the above functions make use of mongo-db to get stored.

Along with storing the data, retrieving the result will also be needed after executing the query on them. It is a schema-less query.

Error handling: while adding and executing query on the cloud, error handling will be carried out through inbuilt exception handling methods of com.parse.exception.

Exception handling allows you to handle exceptional conditions such as program-defined error in a controlled fashion.

3.2.3 Process data ():

Purpose: To extract opinion words in order to understand the sentiment of the opinion word.

Data structure used: List structure is used for word alignment of opinion word with standard matrix. Set of reviews for the processing is provided by array-list data structure.

Algorithm(Fig 2)

1. Begin
2. Fetch reviews from cloud.
3. Extract opinion words.
4. Find position of opinion word.
5. Understand sentiment of opinion word.
6. Identify negation synonyms.
7. If present process negation of sentiment else increment respective counter.
8. Display graph.
9. End.

IV. IMPLEMENTATION

A graph depicting the count of the good bad and average reviews of a particular product is displayed. Clarity is maintained so that the user can easily judge the product this gives the first hand assessment of the product (Fig 4).
Here the end users go to the Flipkart application and then he can buy the product in the online by seeing the reviews in our application.(fig5)

IV. CONCLUSIONS

Opinion mining is an emerging field and we have made a small attempt to work on this field to extract the knowledge from huge volume of data that may be customer comments, feedback and reviews on any product. Research has been conducted to mine opinions in form of document, sentence and feature level sentiment analysis. It is examined that no opinion mining trend is moving to the sentimental reviews of comments. As we know this technology has certain limitations regarding to accuracy of text extraction and etc. We hope that the next version of this application have overcome the actual limitations and the future possibilities.

Advantages:
1. This approach uses Android Operating System. 2. Android is free and open software.
3. It is difficult to analyze each and every review since reviews are expressed in different ways so mining opinions and analyzing reviews from the text is important.
4. Our main theme is to create a system for analyzing opinions which implies judgment of different consumer products.

REFERENCES

[1] www.computer.org
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