

Exploration of an Online Product Evaluation System Utilizing Ratings and Review Comments

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ABSTRACT

Mining opinion targets and opinion words from online reviews are critical tasks for fine-grained opinion mining. The fundamental component of this process is finding relationships between words that express opinions. In this work, we propose a unique technique based on the partially supervised alignment model, which treats the detection of opinion relations as an alignment process. We then utilize a graph-based co-ranking technique to estimate the confidence of each candidate. Finally, we identify the candidates with the highest confidence as opinion targets or opinion words.

Our approach allows for more precise capture of opinion relations compared to previous techniques based on nearest neighbor principles, particularly for long-span connections. When dealing with informal online documents, our word alignment approach effectively mitigates the negative impact of parsing mistakes, unlike syntax-based solutions. By incorporating partial supervision, our suggested model outperforms typical unsupervised alignment models in terms of precision.

Furthermore, in our graph-based co-ranking approach, while assessing candidate confidence, we penalize higher-degree vertices to reduce the likelihood of creating mistakes. Through experiments conducted on three corpora of varying sizes and languages, we have demonstrated that our method outperforms state-of-the-art approaches.

INTRODUCTION:

An increasing number of consumers now prefer online shopping over traditional brick-and-mortar stores, leading to the success of numerous e-commerce websites. Platforms like Amazon.com, Zappos.com, ebay.com, and newegg.com offer customers access to a wide range of products. These platforms aim to provide customers with a comprehensive shopping experience, allowing them to choose products based on various criteria such as price, manufacturer, product attributes, and more.

To assist customers in making informed purchasing decisions, these e-commerce platforms allow users to contribute their own reviews. Customer reviews are valued because they are considered more truthful, objective, and thorough compared to biased product descriptions provided by manufacturers. These reviews also provide insights into the consumer's experience with the product, linking different product characteristics to overall performance.

According to a survey conducted by comScore and the Kelsey Group, prospective buyers heavily rely on online customer evaluations. However, with the increasing number of consumer reviews being written, it has become nearly impossible for an individual to read and comprehend all of them. For example, on Amazon.com, you may come across several popular digital cameras, each with hundreds of reviews that often express divergent viewpoints.

LITERATURE SURVEY:

Mining and Synthesising Customer Feedback, Title of Document

1. Author: M.hu

Online retailers who operate through the Internet rely on customer feedback to gather information about their products and services. As online shopping continues to grow in popularity, the number of reviews from satisfied customers also increases significantly. Highly popular products can accumulate hundreds or even thousands of reviews. However, this abundance of reviews poses challenges for potential consumers who seek to make informed purchasing decisions and for manufacturers aiming to manage and monitor customer opinions. With multiple merchant websites selling the same product and manufacturers producing a wide range of goods, it becomes even more challenging for manufacturers to keep track of and control customer opinions. In this study, our objective is to collect and analyze customer feedback specifically related to a particular product.

2. Author : B.liu

It is a common practice for online businesses to solicit feedback from customers regarding both their products and accompanying services. As the popularity of online shopping continues to rise, the number of evaluations from satisfied customers also increases significantly. Highly popular products can accumulate hundreds of reviews or more. However, this abundance of reviews poses a challenge for potential buyers who wish to assess the opinions and make informed purchasing decisions. By undertaking this project, we aim to provide a condensed overview of the customer feedback received for the product, highlighting the key aspects that customers have discussed and their corresponding sentiment. This analysis will enable prospective buyers to form an opinion about the product based on the aggregated opinions of previous customers.

SYSTEM ANALYSIS:

EXISTING SYSTEM:

The success of collective extraction relies on effectively mining data for opinion relations between opinion targets and opinion terms. To accomplish this, strategies such as syntactic patterns and the nearest-neighbor rule have demonstrated their effectiveness. In the case of the "nearest neighbor" approach, the modifier of a noun phrase is identified as the adjective or verb that immediately follows it within a specified timeframe. This criterion helps determine the opinion relation between words based on their proximity in the text.

These relations are derived from the syntactic structure of the sentence, and they provide valuable insights into the connections between opinion targets and opinion terms.

By utilizing these strategies, researchers have achieved significant progress in identifying and extracting opinion relations from textual data. These techniques allow for a more comprehensive understanding of the relationships between opinion targets and the corresponding opinion expressions.

PROPOSED SYSTEM:

We obtained a dataset of reviews from the Amazon product review site and manually labeled 923 potential reviewer groups. These groups were formed based on the mutual reviewing activity between users, allowing us to analyze brand similarities using frequent itemset mining. Our hypothesis suggests that the composition of reviewer groups is influenced by eight unique characteristics specific to each combination of group and brand.

To identify potential extremist organizations, we developed a supervised, feature-based model.

Multiple classifiers were employed to categorize a group based on the reviews written by its members, aiming to detect indicators of extremism. Our experiments revealed that a three-layer perceptron classifier proved to be the most effective.

In order to gain a deeper understanding of brand-level opinion fraud dynamics, we conducted further research on the activities of these groups. Practices such as consistent ratings and review sentiment, verified purchases, review dates, and receiving helpful votes were investigated.

Surprisingly, we discovered a significant number of verified reviews expressing strong opinions, indicating possible ways to bypass existing measures aimed at preventing unauthorized incentives on Amazon.

Aspect-based opinion mining offers a broader approach to comprehending aggregated customer preferences. By considering specific aspects or features of products or services in the reviews, we can obtain a more comprehensive understanding of customer sentiments and preferences beyond simple overall ratings.

IMPLEMENTATION

Online shopping Module: We developed an e-commerce website as part of this module. The website allows users to browse and purchase items, as well as provide feedback through ratings and comments.

The administrator has the capability to enter and manage product details, including the product name, price, validity, and other relevant information. This management functionality is categorized based on different product categories such as mobiles, PCs, laptops, etc. The administrator can efficiently handle and update the product data within this module.

Customers have the option to either explore and purchase featured products showcased on the home page or search for specific items using keywords or product categories. This provides users with flexibility and convenience in finding the desired products on the website.

Co-Extraction of Opinion Targets: In our system design, we have ensured that extracting and analyzing comments from internet reviews goes beyond capturing the overall attitude towards a product. Customers expect to find detailed comments specifically addressing various aspects or features of the reviewed product.

User Rating Module: The user has the option to provide feedback in the form of ratings to the service provider. User ratings are considered a vital factor as they play a pivotal role in the decision-making process when purchasing a product.

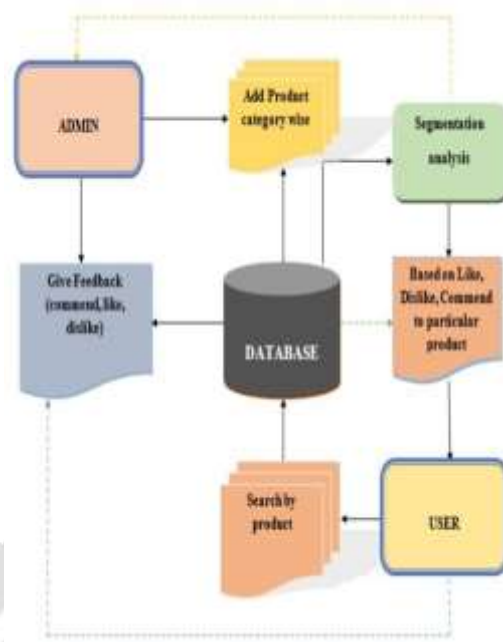
Data Collection Module : The module collects and stores the complete user profile, including ratings, in a secure manner. User profiles encompass various attributes such as time, length, and rating values, among others. The module ensures the secure storage of all user profiles, including their associated rating values.

Graph Rating Detection: The collected data is utilized as a dataset for analysis. Based on the number of feedback submissions, we determine whether user evaluations are Positive or Negative. Using this dataset, we construct a graph that represents the user's input, with Positive and Negative terminals indicating the sentiment, and the overall total ratings.

Positive and Negative Ratings: In our system design, we have implemented a feature that allows portal users to provide both positive and negative ratings for the products they have purchased. This functionality enables users to express their satisfaction or dissatisfaction with the products they have experienced. Furthermore, we have incorporated an administrative component that grants the admin access to a list of ratings. This feature enables the admin to review and monitor the ratings submitted by users. By having access to this list, the admin can gain insights into the overall feedback received for the products and take appropriate actions or make informed decisions based on the ratings provided.

SYSTEM ARCHITECTURE:

In this setup, the cloud server is utilized for data storage, analysis of searchable history, authentication of request details, and displaying those details. Additionally, the cloud server provides the requested information. The accuracy of the result is determined not only by the total number of files but also by the total number of file requests made, ensuring greater accuracy.



To determine the number of downloads for a specific file from the cloud storage location, the user can follow these steps:

1. Encrypt the data using fuzzy logic and decrypt it using the same fuzzy logic.
2. Verify the file's integrity and check for any potential issues.
3. Conduct an encrypted file search, even when the format is encrypted, by checking the Documents to See.
4. Send the request to the Key Generator Centre, where the staff will review the request's status and decide whether to approve it.
5. Finally, download the data in a format that does not employ encryption, using the associated private key connected to the file.

The Trusted Third Party Administrator (TPA) has the capability to examine all data users, verify their authorization, and review user requests to ensure data integrity and security. This includes validating the authenticity of user requests. After a thorough examination of each component of the User Request to upload File and Data, the Key Generator

work, we aim to contribute to the field of opinion mining by introducing a robust and efficient approach specifically tailored for mobile phone reviews on Amazon.

CONCLUSION:

Our research focuses on the opinion mining of mobile phone reviews on the popular e-commerce website Amazon. We have presented a novel aspect/feature-based opinion mining model in this paper. The model demonstrates the ability to effectively identify opinionated sentences or reviews from a vast collection of reviews with a high level of accuracy. Additionally, it exhibits a good accuracy and fast computation speed when calculating the polarity of the reviews, outperforming existing models and algorithms.

It is important to note that the model presented in this paper has been developed by the authors of this research. Through our work, we aim to contribute to the field of opinion mining by introducing a robust and efficient approach specifically tailored for mobile phone reviews on Amazon.

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