

Novel Approach for Mining E-Commerce Feedback Comments using COMM Trust Data Mining Algorithm

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Abstract— Now a day’s E-commerce applications like flip card, Amazon, shop clues are more popular. On that site there are number of sellers or products And many users purchases the number of product from E-commerce sites. But user getting the problem to select the trustworthy sellers. For that we develop the proposed system to guide the users in a proper way so that they can choose the correct seller between the different available sellers on E-commerce. There are different sellers as per their services and quality they provide product to users. User can give review for particular dimensions of sellers such as quality, service, delivery etc. Review can be negative or positive and to calculate the final score of each sellers in particular dimensions we used different technique. So here we represent the opinion miming, aspect miming for the review mining or feedback mining.

Key words: Opinion Mining, Topic Modeling, Social Network, Recommendation System, Similarity Graph, Aspect Miming

I. INTRODUCTION

In E-commerce the very much reported issue with the amazon, eBay notatory administration framework that was the problem where they show the more than 99% positive result. They mainly concentrate on positive feedback only. In data mining the opinion mining, aspect mining, sentiment analysis are the main part. That can be used to calculate the feedback comments in text in which first calculate aspect rating it may be positive or negative then fine the overall Positive and negative score and their aspect ratings and weights are computed based on Aggregation of each. In opinion mining the Preprocessing of review then parsing that review and clustering in particular dimensions is the main task.

II. PROPOSED SYSTEM

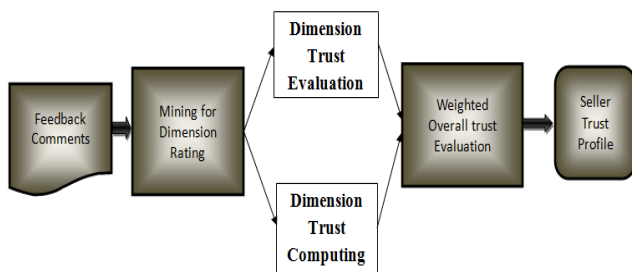


Fig. 1: Proposed system

The above Fig. shows the our proposed system. Our approach consisting of number of modules, first starting with user module, sellers module and we used the Positive keyword library, Negative keyword library, Preprocessing and relation parsing analysis to extracting aspect, opinion expressions and identifying their associated ratings from feedback comments for each seller. Further based on these

dimension expressions we implement our Comment Trust based algorithm for clustering dimension expressions into dimensions and computing dimension weights [1].

A. Preprocessing:

In which removal of stop-word from the review comments and parsing that comments.

III. COMMENT TRUST ALGORITHM

Input: Sellers S, User feedbacks C, input dimension training dataset D

Output: Seller trust profile

For each seller $s \in S$ do

For each comment $c \in C$ do

$c_sentences \leftarrow divide_into_sentences(C)$

for each $c_sent \in c_sentences$ do

$s_tokens \leftarrow tokenization(c_sentence)$

$d_score \leftarrow match(s_tokens, D)$

where d_score – dimesion_score for sentence

end for

$m_d_score \leftarrow cal_multidimesion_comment_score(d_score, c_sent)$

where m - d -score – multidimensional score of each comment

end for

$$overall_seller_profile = \frac{\sum m_d_score1 + m_d_score2 + \dots + m_d_score n}{n}$$

end for.

IV. MATHEMATICAL MODEL OF OUR PROPOSED SYSTEM

The system W can be represented as $S = \{ U, S, C, D, W, TD \}$

Consider a set U as a set of users registering with our system which is represented as-

$$U = \{U1, u2, U3, \dots, Un\} \text{ Where } U1 - \text{ user of system.}$$

Now consider another set S, a set of sellers selling their products through e-commerce application.

Which can be represented as-

$$S = \{S1, S2, S3, \dots, Sn\}$$

Now various users can buy products through this shopping portal, these products posted by various sellers. After getting a product users give feedback to the seller related to various dimensions such as quality, shipping. Here we are considering a set C as feedback comment set. We are using this to analyze multidimensional trust of a seller which can be represented as-

$$C = \{C1, C2, C3, \dots, Cn\}$$

Another set $D = \{D1, D2, D3, \dots, Dn\}$

Which is a set of dimensions which we are using to evaluate the trust score of each seller.

Now each dimension have a certain weight w which can be represented in set W as follows

$$W = \{W1, W2, W3, \dots, Wn\}$$

For mining the comments we are using multidimensional comment mining algorithm presented above

The set $TD = \{TD1, TD2, TD3, \dots, TDn\}$ which is a set of dimension trust score for each seller.

Now in order to find out the overall trust score of a seller we have to aggregate the dimension trust scores of each dimension

$$T = (\sum TD1+TD2+\dots+TDn) / (n)$$

This score T represents the overall trust score of seller, So we are here showing the multidimensional as well as the total overall score of a seller to the user of a system.

V. EXPERIMENTAL RESULTS

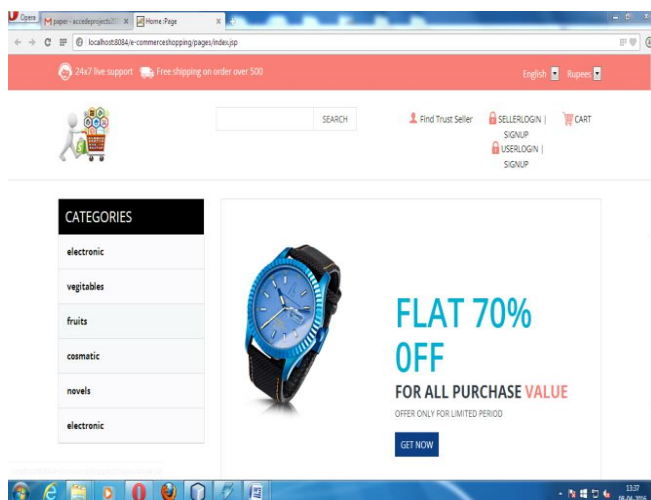


Fig. 1(a): Main Page of our Projects



Fig. 1(b): Sellers Dashboard page

Fig 1 (a, b) Shows the home page of sellers and user. User and sellers can register and after login they can use our applications.

- Sellers: Sellers can add their products category wise and view the own profile for different dimensions such as service, quality, delivery so sellers can get the idea which dimensions want to be improved.
- Users: users view Product, profile of different sellers and buy products after buy user can give the review to sellers on particular seller's dimensions.

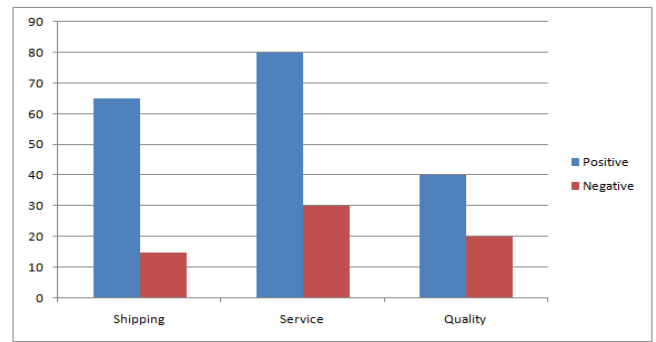


Fig. 1(c)

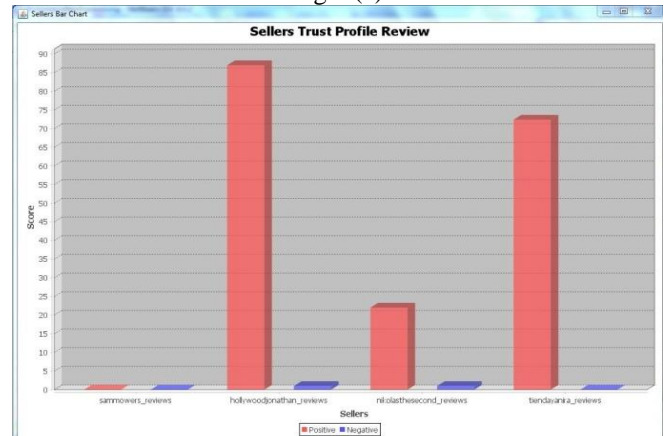


Fig. 1(c)&(d): Different sellers dimension trust score comparison graph (c & d).

In graph c we show that the sellers dimension score with Positive and negative.

VI. CONCLUSION

In this project, It provides economical, flexible and scalable solutions for E-commerce Applications and We have proposed a multi-dimensional trust evaluation model for computing comprehensive trust profiles for sellers in E-commerce sites. Here we compute dimension trust scores and dimension weights automatically via extracting dimension ratings from feedback comments and aggregating with feedback rating using on sentiwordnet library and COMMENT TRUST algorithm.

VII. FUTURE WORK

In future work, we can improve mining Algorithm with more accuracy and minimum complexity. Review can be multi languages so that can more efficient to users and which would improve the overall accuracy of the rating system.

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