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Recommendation System Based On Product Aspect Ranking

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ABSTRACT: Numerous consumer reviews of products are now available on the Internet. Consumer reviews contain rich and valuable knowledge for firms as well as users. Previous works improve the usability of numerous consumer reviews and also have the ranked aspects of each product. However, previous works does not mention any possibilities to recommend products depending on the comparison between consumer reviews and the consumer interest. To address this problem, recommendation system based on product aspect ranking is explored to recommend products depending on the comparison between the extracted information from consumer reviews and their interest. That is, to extract the product information and product aspects from consumer review, then comparing the extracted information and consumer interests. The resultant information can be used to recommend the product. So, Recommendation system based on product aspect ranking works effectively and they focus on interests of consumers and effectively use the consumer reviews.

KEYWORDS: Product aspects, aspect identification, sentiment classification, aspect ranking, Hybrid Filtering, consumer review.

I. INTRODUCTION

Internet is an essential thing in our day to day life. Many retail websites are available on internet. Nowadays it is very common practice to have a review on products, after its purchase/use. New generation customers do refer to reviews, and its impact is vital in selling a product. Examples of retail websites are C|net.com, gsmarena.com, revoo.com, Amazon.com, Viewpoint.com etc. All these websites provide an opportunity to post consumer's reviews on product. Consider a consumer who brought a product and they have an opportunity to write their experience with that particular product by posting review. Each consumer post their review based on their interested aspect. The aspect is nothing but, the feature of a product. For example: - "Battery Life of Samsung Galaxy grand 2 is excellent", where Battery life is aspect of the product and the review is positive opinion. Most retail websites provides ranking based on consumer reviews. Consumers can choose their own interesting aspect with high rank on a particular product. So that consumers can trustfully purchasing product based on aspect ranking. Main advantages of retail websites are to improve the usability of numerous consumer reviews and also have ranked aspects of each product. So that consumers are fully confident in purchasing products. However, this does not mention any possibilities to recommend products depending on the comparison between experienced consumer reviews and the consumer interest. To address this problem, recommendation system based on product aspect ranking is explored to recommend products depending on the comparison between the extracted information from experienced consumer reviews and their interest. That is, to extract the product information and product aspects from consumer review, then comparing the extracted information and consumer interests. The resultant information can be used to recommend the product. So, Recommendation system based on product aspect ranking works effectively and they focus on interests of consumers and effectively use the consumer reviews.

1.1MOTIVATION. Modern market is very much dependent on interest. Online purchase and common market purchase are the major purchase type and both of there are influenced by internet. In recent days, we all refer to reviews before buying majority of products. I believe that the topic is relevant, as there reviews have a major role in our decision making when it comes to buying a product. This relevance attracted me a lot and this is the reason why I should select this topic.



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II. LITERATURE SURVEY

In my literature survey, a study of some techniques and approaches of product aspect ranking and also some retail websites has been analysed. On this analysis, I saw that all the retail websites improve the usability of numerous consumer reviews and also have the ranked aspects of each product. However, they does not mention any possibilities to recommend products depending on the comparison between experienced consumer reviews and the consumer interest. So, I introduce recommendation system based on product aspect ranking.

III. PROPOSED SYSTEM

3.1 RECOMMENDATION SYSTEM

Recommending products depending on the comparison between experienced consumer reviews and the consumer interest. The consumer interest is nothing but, each consumer's review on particular category of product. Which is compared with experienced consumer review and the result will be product recommendation. This will be very helpful as it is less time consuming and assures consumer a valid product based on their interests. For example: - I have commented on a product like mobile phone, mainly on the aspect – Battery Life. Thereafter, recommendation system consider my interest as – Battery Life. After this, mobile phone which have good ranking on the aspect of battery life will be recommended for me.

3.1.1 CONTENT BASED FILTERING

Product Recommendation can be done by mainly considering the user interest. This user interest can be filtered by using content based filtering. The user interest is nothing but, each consumer's review on a particular category of product. Filtering each consumer's interest on aspects and which is considered as interested aspect of each consumer in that particular category.

3.1.2 COLLABORATIVE FILTERING

In CF considering the similarity between consumer interests by content based filtering and experienced reviews of particular category. If the consumer does not mention any interest then recommendation will be generated on basis of aspect ranking.

3.1.3 HYBRID FILTERING

Product recommendation is done by hybrid recommendation approach. Hybrid filter combined content based filtering and collaborative filtering. That is, User interest can be filter by using content based filtering. Compare similar experienced consumer whose have same interest with consumer interest. Collect that information and give rank to them.

The recommend product in the basis of high to low score.

3.2 SYSTEM ARCHITECTURE

The system architecture shows the way of producing recommendation. In which first process the review of products and after the processing identifying each aspect of each category of product. The result will contain list of product aspect. Then sentimental analysis of each review is analysed. After that Aspect ranking will be calculated. Then recommending product based on consumer interest. The fig 3.1 shows the system architecture.

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Fig 3.1 System Architecture

IV. SIMULATION AND RESULTS

4.1 Dataset

In my research work used dataset of Amazon.com and c|net.com. CNet.com involves more than seven million product reviews. Amazon.com archives a total of more than 36 million products. I include three category and total of thirty items. Each product have huge number of reviews. They are shown in below,

Product Category	Product Name	Number of line
Mobile Phone	Apple_iphone_3g_16gb	853
	Apple_iphone_3g_36gb	624
	Apple_iphone_4_16gb	326
	Apple_iphone_4_32gb	1067
	Nokia 6600	554
	Nokia 6610	576
ipod	ipad-5g-30gb	1197
	ipad-classic-80gb	453
	ipad-fifth-gen 80gb	982
Camera	Canon G3	640
	Canon S100	284
	Canon-eos-id-markiii	141
	Canon-eos-5d	305

Tab 4.1 Details of Dataset

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4.2 Time taken

All these reviews are processed and produce aspect ranking with in 2mins. Then, why can we check the possibility to recommending a product? So that, I recommending a product based on aspect ranking. Then the take time will be very less. These are shown below,

System	Techniques	Time taken
Existing system	Aspect ranking	1.5 Sec
Proposed System	Comparison of two products	2 Sec
	Recommendation based on user interest	6 Sec
	Recommendation based on all the aspect of each product	12 Sec
	Removing a selected aspect and recommending a product	12Sec

Tab 4.2 Time taken for running

With the use of bar chart these comparison table can be shown.

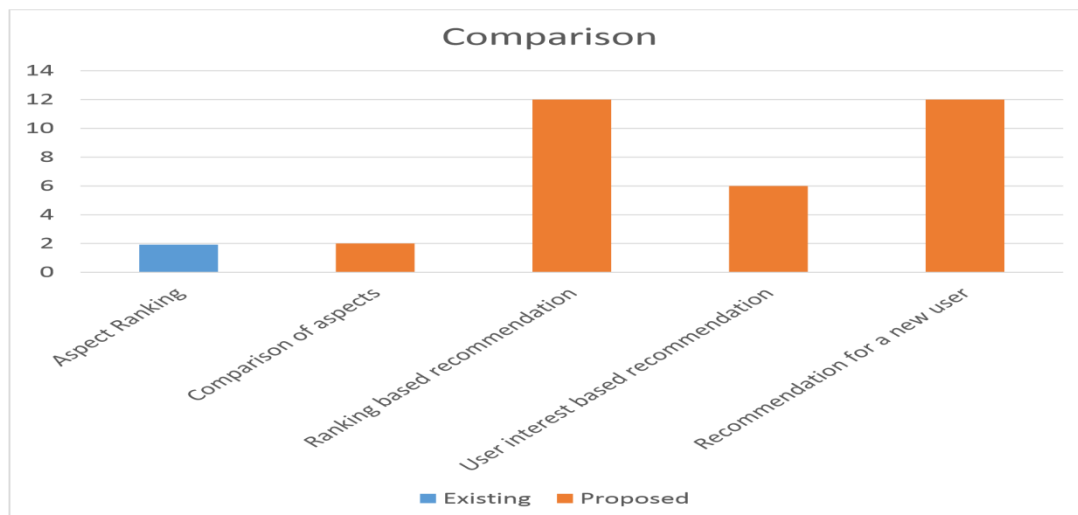


Fig 4.1 Comparison Table

In this bar chart the time will be specified in seconds



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V. CONCLUSION

Recommendation system based on product aspect ranking works effectively and they focus on interests of consumers and effectively use the consumer reviews. So that, consumer is fully satisfied and reduce time taken for searching products to purchasing product with their interest. That is, recommendation system works effectively and produce better results to consumers. In the modern world, where advertisements rule the industry and glitters, reviews enlighten customers by giving the real picture.

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