Real time product price monitoring and analysis for E-commerce website.

Rashmi Deshpande[1],Shivam Ghate[2], Anisha Bharuka[3],Swapnil Sonawane[4],Harshada Patil[5]
1Department of Computer Engineering , Dr.D.Y.Patil Institute of Engineering Management and Research Akurdi,Pune India

Abstract
Recommendation systems have emerged rapidly in the past decade. Recommendation of products to attract customers that meet their requirements is very important for the vendors to survive in the global market. The approach proposed in this paper is novel and serves as a better alternative to rate a product based on its technical specification by analyzing large number of user reviews which are extracted dynamically from several top e-commerce websites. This avoids the need, for the user, to search for opinions and comments online before making a purchase. The proposed approach in this study extracts specification list like battery, processor, camera etc. and customer reviews for a user specified product from different websites and identifies crucial terms corresponding to the technical features of the product in the review to determine polarity of the feature and classifying it under the specification list. Each specification is assigned a score based on polarity i.e. positive/negative feedback. Overall product rate is calculated by aggregating the score specific to individual features. This approach is very useful for those customer swhotar get at specific features in a product.

Keywords: Preprocessing, Feature Extraction, Classification using Support Vector Machine, Machine Learning

INTRODUCTION

Consumer reviews, opinions and shared experiences in the use of a product is a powerful source of information about consumer preferences that can be used in recommender systems. Despite the importance and value of such information, there is no comprehensive mechanism that formalizes the opinions selection and retrieval process and the utilization of retrieved opinions due to the difficulty of extracting information from text data. In this paper, a new recommender system that is built on consumer product reviews is proposed. A prioritizing mechanism is developed for the system. The proposed approach is illustrated using the case study of a recommender system for digital cameras. E-Commerce is the easiest, most commodious way of organizing business over the internet for business experts and individuals. Managing business over the internet is simply surfing specific website for shopping products online or business related matters.

MOTIVATION

Moto of implementing this system is that to extract customer reviews and specification list for the user selected product from Flipkart andAmazonwebsite. Natural Language Processing techniques and sentiment analysis are used to identify the sentiment of the individual feature contained in the review. After processing, the system will calculate score for each feature based on its polarity in the extracted review and overall rating of a product is calculated by aggregating individual feature scores. Finally, the system will output the pros and cons of the user selected product in terms of score and results are displayed as a graph for providing better understanding for the user. To automatically detect a person's pose in an image is a difficult task as it depends on a number of aspects such as scale and resolution of the image, illumination variation, background clutter, clothing variations, surroundings, and interaction of humans with the surroundings. There are a number of yoga asanas, and hence creating a pose estimation model that can be successful for all the asanas is a challenging problem.

PROBLEM STATEMENT

Systems have emerged rapidly in the past decade. Recommendation of products to attract customers that meet their requirements is very important for the vendors to survive in the global market. The approach proposed in this paper is novel and serves as a better alternative to rate a product based on its technical specification by analyzing large number of user reviews which are extracted dynamically from several top e-commerce websites. This avoids the need, for the user, to search for opinions and comments online before making a purchase.

LITURATURE SURVEY

Saurabh Chaudhari, Reeta Patil, "Self-Tuning Approach for Implementing a Multidimensional Recommendation System Using PID"[1],As presented,The exponential growth in the online retail services and products has resulted in the generation of huge amounts of data. In a nonlineare tail portal, analysis of the data plays an important role in optimization of recommendation systems, which helps offer better user experience. As large amount of data is consistently updated in the databases of online retail portals, the data quantity keeps on increasing and it becomes more difficult to carry out analysis for the process of recommendation. Recommendation algorithms have been designed to take some input information and generate relevant recommendations. The performance of traditional recommendation systems and analysis techniques degrade while processing large data. New recommender system technologies are needed that can quickly produce high-quality

recommendations, even for very large-scale problems. Here is a newly proposed algorithmic multidimensional approach that can be deployed to improve recommendation systems performance. PID is a closed loop, selftuning algorithm which is predominantly implemented in mechatronics instruments where manual supervision is not feasible and it functions for correction of errors quanti¿able in physical measures. If we were to map errors in physical dimensions to irrelevancy in computer systems it can be approximately stated to be higher the error, higher the irrelevancy. Also, the availability of multiple factor assessment in PID algorithms can be used to implement the multidimensional approach. As proposed and analyzed the implementation is expected to provide with faster as well as big data compliant analytics option.

Rahul Kumar Chaurasiya ,"Yoga-82:Improving Performance of Product Recommendations Using User Reviews"[2],As presented, Recommendation systems have gained importance with the rapid growth ine-commerce industry. Recommendation system utilizes user feedbacks to suggest products that might be useful to the user and also help in accessing the long tail products. Traditional recommendation systems rely on ratings provided by users. However, with advancement in data acquisition, most e-commerce websites today capture other useful feedbacks such as review and review helpfulness, etc. This paper proposes an approach to improve the performance of recommendation systems using user reviews. The experiments are performed on Amazon product dataset which consists of product ratings and reviews. A comparison between traditional rating-based and the proposed recommendation system shows improvement in the recall and root mean square error (RMSE) scores of recommendation system.

Ni Made Satvika Iswari ,"Product Recommendation for e-Commerce System based on Ontology" [3],As presented,The sale and purchase of goods are now starting to move from being offline to online using the internet, or what is known as e-commerce. With the development of the internet and intelligent computing technology, e-commerce is increasingly being used. The products offered through ecommerce platforms is a matter that needs to be considered because it can influence the user's decision in buying a product. This study aims to build a product recommendation system on e-commerce platform according to user needs. There are several methods that can be used to produce recommendations, one of which is Collaborative Filtering. In this study, the Slope One algorithm is used where the input rating is given based on the domain ontology of the product. Domain ontology is used to represent relationships between products. Thus, the product recommendations are expected to be in accordance with the user's interest. So that products a lesare right on target and users get products that suit the ir needs. This recommendation system will be implemented on e-commerce platforms and is expected to help users and sellers. Based on the case studies conducted, the results of recommendations provided with the ontology approach not only provide recommendations for specific products, but also provide recommendations on categories that may be of interest to the users. Thus, the recommendations will be more varied and are expected to be more in line with user interests.

JiahuanLi ,"Research on Recommendation System of Agricultural Products Ecommerce Platform Based on Hadoop"[4],As presented, In recent years, with the vigorous promotion of "Internet + Agriculture" in China, more and more agricultural products e-commerce platforms have emerged. Due to the shortage of personalized services on the existing agricultural productse-commerce platform ,this paper studies Hadoop-based agricultural product e-commerce recommendation system The Hadoop platform can not only solve the storage problem of massive data, but also quickly analyze the user's behavior data through distributed computing, thereby discovering their interests, providing personalized recommendation service for them, and achieving precision marketing of target users. At the same time, thispaper provides a reference for the development of agricultural products e-commerce.

Elaheh Maleki, Eric Bonjour ,"Interfaces modeling for Product-Service System integration"[5],As presented, Product-Service System (PSS) is proposed as an answer to the increasing need for providing sustainable solutions in nowadays competitive markets. To fulfil the advanced needs of customers, OEMs (Original Equipment Manufacturers) start collaborating with service and technology providers to develop a customised package of heterogeneous tangible and intangible components. Consequently, defining the interfaces is crucial to integrate these components into a unique system. Comparing to the product or service design, modeling interfaces in PSS is challenging because of the heterogeneity of its components, especially, when a tangible component is interacting with an intangible one. This paper aims at proposing a conceptual model supporting the definition and classification of interfaces in PSS architecture. Based on Systems Engineering (SE) recommendations, the model allows the definition of interfaces through the system definition from the functional to the physical architecture. The application of the model is illustrated by a pragmatic use case concerning the self-service and station-less bicycle sharing system.

SYSTEM ARCHITECTURE

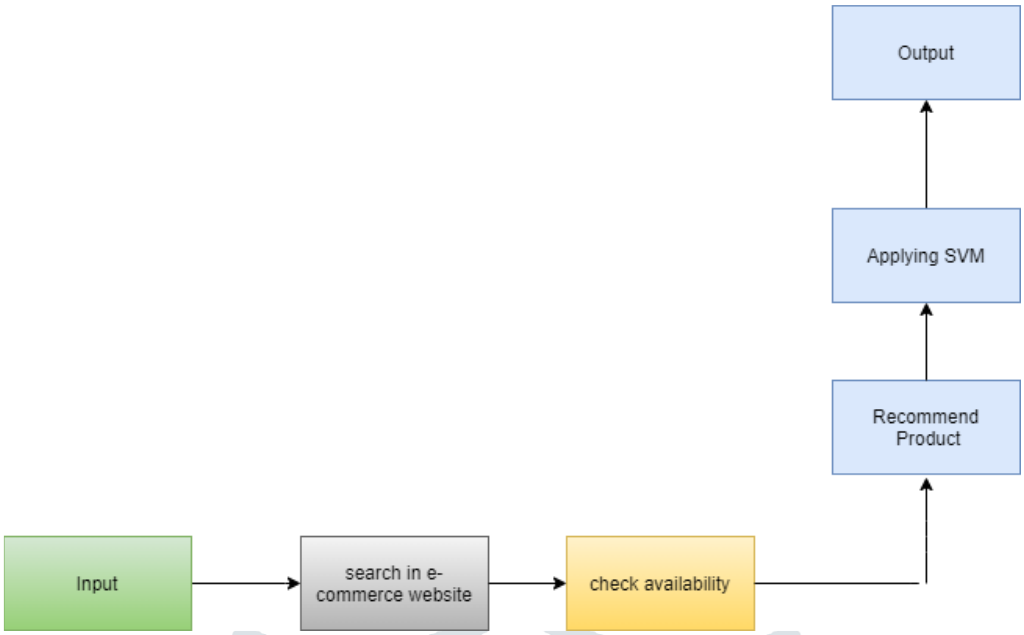

Fig. 1: System Architecture

Modules:

i) Preprocessing-The aim of pre-processing is an improvement of the image data that suppresses unwilling distortions or enhances some image features important for further processing, although geometric transformations of images (e.g. rotation, scaling, translation) are classified among pre-processing methods here since similar techniques are used.

ii) Feature Extraction-Feature extraction is a part of the dimensionality reduction process, in which, an initial set of the raw data is divided and analyze by SVM algorithm. So when you want to process it will be easier. The most important characteristic of these large data sets is that they have a large number of variables.

iii) Classification- "Support Vector Machine" (SVM) is a supervised machine learning algorithm which can be used for both classification and regression challenges. However, it is mostly used in classification problems. In the SVM algorithm, we plot each data item as a point in n-dimensional space (where n is number of features you have) with the value of each feature being the value of a particular coordinate. Then, we perform classification by finding the hyper-plane that differentiates the two classes very well.

ALGORITHM

SVM Algorithm

"Support Vector Machine"(SVM) is a supervised machine learning algorithm which can be used for both classification or regression challenges. However, it is mostly used in classification problems. In the SVM algorithm, we plot each data item as a point in n-dimensional space (where n is number of features you have) with the value of each feature being the value of a particular coordinate. Then, we perform classification by finding the hyper-plane that differentiates the two classes very well (look at the below snapshot). Support Vectors are simply the co-ordinates of individual observation. The SVM classifier is a frontier which best segregates the two classes (hyper-plane/ line). It works really well with a clear margin of separation It is effective in high dimensional spaces.It is effective in cases where the number of dimensions is greater than the number of samples. It uses a subset of training points in the decision function (called support vectors), so it is also memory efficient.

CONCLUSIONS

This system provides the attitudes and sentiments of people on social networks like Facebook and twitter. By analyzing the buying intention of customers on ecommerce sites and the satisfaction of the customer with specific products through online reviews on e-commerce sites. Recommending products and places to customers based on collective opinions

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