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CONNECTING SOCIAL MEDIA TO ECOMMERCE USING MICROBLOGGING AND ARTIFICIAL NEURAL NETWORK

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Abstract: To develop an enhanced web application, using web services for interconnecting three various servers like, social network, E-commerce application and news channels. By Using Artificial Neural Network (ANN) and Text categorization the recommended products will be classified. Also enhanced micro blogging information has been implemented for efficient client server process. Three tier architecture designs have been implemented for efficient data retrieval and data transfer. They are Social Networks, Ecommerce and News servers will be the servers taken for developing this application. The primary architecture will be the social network, in followed with ecommerce and news will be interconnected. The artificial neural network will works as a third party agent and the agent will retrieves all the recommended products, as micro blogging information. A panel will be design in the social network for displaying the recommended product details. All the displayed products will be more relevant to the user's profile. The generated micro blogging information contains an alpha-numerical characters. The micro blogging information has been generated using Artificial Neural Network (ANN) and Advanced text categorization. This micro blogging information will reduce the time of data retrieval from social network to ecommerce application. All the information will be shown in a single window.
Index Terms: Microblogging, Ecommerce, Artificial neural network, Text categorization.

I. INTRODUCTION

Generally, data mining (sometimes called data or knowledge discovery) is the process of analysing data from different perspectives and summarizing it into useful information - information that can be used to increase revenue, cuts costs, or both. Data mining software is one of a number of analytical tools for analyzing data. It allows users to analyse data from many different dimensions or angles, categorize it, and summarize the relationships identified. Technically, data mining is the process of finding correlations or patterns among dozens of fields in large relational databases.

Data mining, the extraction of hidden predictive information from large databases, is a powerful new technology with great potential to help companies focus on the most important information in their data warehouses. Data mining tools predict future trends and behaviors, allowing businesses to make proactive, knowledge-driven decisions. The automated, prospective analyses offered by data mining move beyond the analyses of past events provided by retrospective tools typical of decision support systems. Data mining tools can answer business questions that traditionally were too time consuming to resolve. They scour databases for hidden patterns, finding predictive information that experts may miss because it lies outside their expectations.

Most companies already collect and reference massive quantities of data. Data mining techniques can be implemented rapidly on existing software and hardware platforms to enhance the value of existing information resources, and can be integrated with new products and systems as they are brought on-line. When implemented on high performance client/server or parallel processing computers, data mining tools can analyse massive databases to deliver answers to questions such as, "Which clients are most likely to respond to my next promotional mailing, and why?"

This provides an introduction to the basic technologies of data mining. Examples of profitable applications illustrate its relevance to today's business environment as well as a basic description of how data warehouse architectures can evolve to deliver the value of data mining to end users.

II. PROPOSED SYSTEM

Social networks offer new ways to reach first-time customers, engage and reward existing customers, and showcase the best your brand has to offer. Your social network profiles and the content you share are as important as a business' storefront signage and displays in the 1950s.

Businesses that integrate social media into their marketing strategy – from customer acquisition, to sales, to re-engagement campaigns – will benefit. Marketers can see in real-time what your audience cares about most, their interests, the conversations they're having and what they like. Use your social networks to better segment audience and understand your target demographics. This will help you optimize your campaigns and deliver more targeted messaging. Immediacy is big in social media; we want information and we want it now. That's why social networks are so great for customer service. They enable businesses to quickly respond to customer inquiries. Plus, social media makes it easier to spot and respond to unpleasant customer experiences. Develop a strategy for responding to customer inquiries via social media.

Gathering the details from the user's social network profile and creating product recommendations. The profile details will match with the news server for gathering recommended news information. According to the news three news channels will be consolidated for getting the confident information. Recommended product information can be changed according to the user's public chat and user's updated profile details. News details available in search mode also, news can be search area wise, city wise and state wise.

III. MODULES

- Architecture Creation
- Web Services
- Data Training and text categorization
- Micro blogging with ANN
- View Recommendation

Architecture Creation

This is the initial module involves with 3 tier architecture. Tier one is the primary network and head node of the architecture. Tier one will be the social network. In added with tier two will be the ecommerce application and tier three will be the news channels. Architecture will be an independent process and architectures can be accessed individually. For example for social network, an admin will be provided, and the admin can manage all the social network information. In case of ecommerce application the admin can add, delete and update the products. Ecommerce application can be accessed independently. The same process will be applicable for news channels also. The three networks are having three types of architectures and various procedures. Each and every tier consists of individual database and database can be accessed separately.

Web Services

Through introducing the web services, the network exchange can be done. The network exchange is the method of interconnection between various networks in various categories. Here the web services will be acting as the intermediate node. Here the connection will be established for network interconnections. Initially the social network will be connected with the ecommerce application and both social network and ecommerce application will be connected with the news channels. So the

web services will create triangle architecture. Each network can be accessed from other networks. This makes more data transfer and efficient data retrieval. In the web services the architecture ratio will be 1:1:3.

Data Training and text categorization

This is the most important module. Here a data dictionary will be created for accessing the web services. The trained data are the most and frequently used data and patterns. These will be taken for the blogging reference purpose and to find the user's actual requirement. This data training acts as a supporting technology. Text categorization is the actual pattern fetcher. This process goes through the all public data like user's profile, education details, location information, posts and comments. Text categorization will not deal with personal info. It read word by word of the user's info and selects the exact keywords. The key words will be matched with the trained data for feature extraction. All these process are automatic process. Each and every pattern will be differing from user to user.

Micro blogging with ANN

This is the process of converting the information into codes and the codes can be passed through any networks for data access. The gathered information from the previous module will be taken as a group of data. These data will be converted to micro blogging content. The micro blogging contains alpha numerical codes like QE098HGJ!?*, all the code represents the person's character and the recommendations. Using Artificial Neural Network the blog content will be transferred to other tier networks like ecommerce application and news channels. This is secured way of transferring the data from architecture to architecture. Through reading the entire code the recommendations can be can be find out.

View Recommendations

Finally all the recommendation can be viewed in the front end design on the tier one (Social Network). A dedicated panel will be designed for displaying both ecommerce recommendation and news recommendation. This recommendation will be change according to their updated in the profile or post or comments. Basically five recommendations can be create from the ecommerce application and all news updates can be shows. News search options will be integrated in the news panel. So that social network is the primary architecture and other network will follows the social network according to this design.

Problem definition

According to the survey 89 % of the internet users are using Social Network and 60 % of the internet users are using E-Commerce Application and 40 % of the internet users are viewing news on online. So that according to our proposed system, the problem definition is the combination of these three networks using web services. According to a study from Duke University, brands spend 19% of their marketing budget on social media, but many brand directors find it difficult to quantify the return on investment from their efforts. Despite the large number of fans and followers and large percentage of budget allocated to Ecommerce application. The ability to turn fans into buyers has been relatively weak compared with the real. The evolution of social media draws many parallels to the evolution of mobile commerce.

According to a study by Custora, mobile traffic to social network sites has increased from 8% to nearly 80% in the last four years. Also the ecommerce application traffic has increased up to 6 % to 60 %, but the problem is the sales percentage has been increased only 20 %. So still ecommerce application needs more advertisement and the method to reach the customer should be different. This is the exact problem happen to the ecommerce application now days. Social media is evolving in

much the same way. Though ecommerce application returns may be low, research shows that social media is becoming an increasingly utilized resource for online shopping:

- 74% of consumers rely on social media to inform their purchasing decisions
- 90% of consumers trust product recommendations by their friends on social networks, while only 33% trust advertisements

These stats should give renewed hope to e-commerce retailers struggling to justify their social media efforts. Social media is a form of influencer marketing; e-commerce conversions can't always be linked directly to a social channel, but that doesn't mean the purchases weren't influenced by one. So this is the major problem in the real world.

IV. METHODOLOGIES

- Enhanced Micro blogging
- Text categorization
- Artificial Neural Network

Enhanced Microblogging

Some micro blogging services offer features such as privacy settings, which allow users to control who can read their micro blogs, or alternative ways of publishing entries besides the web-based interface. These may include text messaging, instant messaging, E-mail, digital audio or digital video. Micro blogs are the simple text based cipher codes which can be passed through various networks using web services.

Micro blogs data, e.g., fb, reviews, news comments, and social media comments, has gained considerable attention in recent years due to its popularity and rich contents. Nowadays, micro blogs applications span a wide spectrum of interests, including detecting and analyzing events, user analysis for geo-targeted ads and political elections, and critical applications like discovering health issues and rescue services. Consequently, major research efforts are spent to analyze and manage micro blogs data to support different applications. In this method, we give a 1.5 hours overview about micro blogs data analysis, management, and systems.

The method gives a comprehensive review for research efforts that are trying to analyze micro blogs contents to build on them new functionality and use cases. In addition, the tutorial reviews existing research that proposes core data management components to support micro blogs queries at scale. Finally, the method reviews system-level issues and on-going work on supporting micro blogs data through the rising big data systems.

Through its different parts, the tutorial highlights the challenges and opportunities in micro blogs data research. Micro blogs data, e.g., tweets, reviews, news comments, and social media comments, has become very popular in recent years. Every day, over billion users post more than four billions micro blogs on Facebook and Twitter. Such tremendous amounts of user-generated data have rich contents, e.g., news, updates on on-going events, reviews, and discussions in politics, products, and many others. of micro blogs data has motivated researchers and developers worldwide to take advantage of micro blogs to support a wide variety of practical applications, including social media analysis, discovering health-related issues, real-time news delivery, rescue services, and geo-targeted advertising.

The distinguished nature of micro blogs data, that includes large data sizes and high velocity, has motivated researchers to develop new techniques for data management and analysis on micro blogs.

Text Categorization

Analysis is increasingly viewed as a vital task both from an academic and a commercial standpoint. The majority of current approaches, however, attempt to detect the overall polarity of a sentence, paragraph, or text span, regardless of the entities mentioned (e.g., laptops, restaurants) and their aspects (e.g., battery, screen; food, service). By contrast, this task is concerned with aspect based opinion analysis (ABSA), where the goal is to identify the aspects of given target entities and the opinion expressed towards each aspect. Datasets consisting of customer reviews with human-authored annotations identifying the mentioned aspects of the target entities and the opinion polarity of each aspect will be provided.

In particular, the task consists of the following subtasks:

Subtask 1: Aspect term extraction

Given a set of sentences with pre-identified entities (e.g., restaurants), identify the aspect terms present in the sentence and return a list containing all the distinct aspect terms. An aspect term names a particular aspect of the target entity.

For example, "I liked the service and the staff, but not the food", "The food was nothing much, but I loved the staff". Multi-word aspect terms (e.g., "hard disk") should be treated as single terms (e.g., in "The hard disk is very noisy" the only aspect term is "hard disk").

Subtask 2: Aspect term polarity

For a given set of aspect terms within a sentence, determine whether the polarity of each aspect term is positive, negative, neutral or conflict (i.e., both positive and negative).

For example:

"I loved their fajitas" → {fajitas: positive}

"I hated their fajitas, but their salads were great" → {fajitas: negative, salads: positive}

"The fajitas are their first plate" → {fajitas: neutral}

"The fajitas were great to taste, but not to see" → {fajitas: conflict}

Artificial Neural Network

This training method contains bag of words which can be update by admin using Artificial Neural Network this process in called as Data training. This is the basic input for the text data training purpose. Also here all data will be uploaded in to a centralized server for data analysis purpose. Centralized data distribution systems defined here as systems that allow distributed end-user applications, databases and data providers to be integrated with dedicated data sources. Even though, it will be implemented using ASP.NET, basically it will satisfies all the web based procedures and applications. In case of the organisation may having more than two branches in various locations, (i.e) in different states?

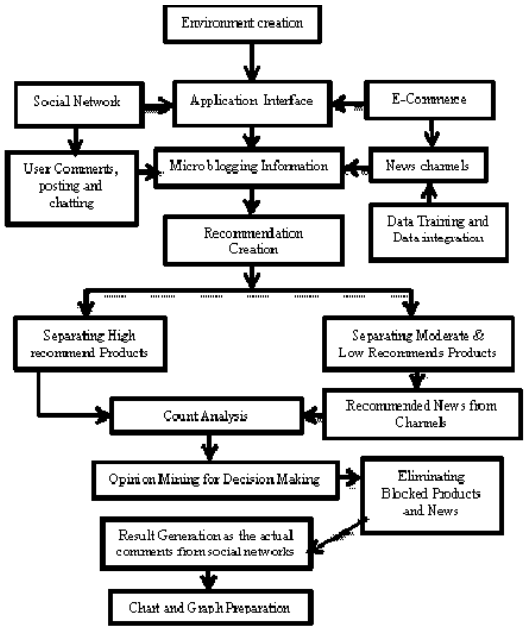
In artificial intelligence or machine learning,a training set consists of an input vector and an answer vector, and is used together with a supervised learning method to train a knowledge database (e.g. a neural net or a naive Bayes classifier) used by an AI machine. Validation sets can be used for regularization by early stopping: stop training when the error on the validation set increases, as this is a sign of over fitting to the training set. This simple procedure is complicated in practice by the fact that the validation error may fluctuate during training, producing multiple local minima. This complication has led to the creation of many ad-hoc rules for deciding when over fitting has truly begun. In statistical modelling, a training set is used to fit a model that can be used to predict a "response value" from one or more "predictors." The fitting can include both variable selection and parameter estimation. Statistical models used for prediction are often called regression models, of which linear regression and logistic regression are two examples. In these fields, a major emphasis is

placed on avoiding over fitting, so as to achieve the best possible performance on an independent test set that follows the same probability distribution as the training set.

These can be defined as:

- Training set: A set of examples used for learning that is to fit the parameters [i.e., weights] of the classifier.
- Validation set: A set of examples used to tune the hyper parameters [i.e., architecture, not weights] of a classifier, for example to choose the number of hidden units in a neural network.
- Test set: A set of examples used only to assess the performance [generalization] of a fully-specified classifier.

V. SYSTEM ARCHITECTURAL DIAGRAM



VI. CONCLUSION

Here 3 architectures are comparing in single architecture. Each networks works independently and working in various servers. And each network will generate independent results. For example in case of social network, a big data will be handled in this architecture. Along with most of the people will interact with the social network. The performance may depend according to the server speed and internet speed.In case of ecommerce application, the next platform to the social network is the ecommerce application.This network too works independently. And performance based on the server and the internet speed. The same case is applicable for news channels. Due to independent architecture in the existing system, we can't find the exact result in the existing system.

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