

IMPLEMENTING ARTIFICIAL NEURAL NETWORK IN ENHANCED MICRO BLOG FOR SOCIAL NETWORK, E-COMMERCE AND NEWS CHANNELS

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Abstract

The confines between social networking and e-commerce have been increasingly distorted. The objective of this project is to develop an enhanced web application, using web services for interconnecting three various servers like, social network, e-commerce and news channels. By Using Artificial Neural Network (ANN) and Text categorization the micro blogging information will be classified and generated with efficient data retrieval and data transfer. Enhanced micro blogging information has been implemented for efficient client server process. In the existing system, mapping techniques has been used, which may cause in accuracy during the time of data transactions. The primary network will be the social network followed with ecommerce and three news channel servers will be interconnected. In the social network an advanced micro blogging information will be created which considers only the users public data and public chats. A micro data array will be created for the user which consists of the entire user's most important information only and also the micro array details will send and search through the E-Commerce application automatically. Here the artificial neural network will work as a third party agent which will retrieve all the recommended products, as micro blogging information. A panel is designed in the social network in which all the displayed products will be more relevant to the user's profile. The generated micro blogging information contains an alphanumeric characters like (Z#09UL\$NB@ELRL*!). The same architecture has been enhanced for new channels, here three news channels taken for the consideration where the same micro blogging information has been generated which displays only the relevant news to the user. In additional user can search the news area wise, city wise and state wise by changing or updating the location in the user profile. All the information will be shown in a single window on social network.

Key Words: Micro Blogging, E-Commerce, Artificial Neural Network, Text Categorization, Micro data array

1. INTRODUCTION

Today, social media is spending a small fraction of most business marketing budgets. On average, social media spending accounted for just 9% of the overall budget. But that number is projected to expand to nearly 22% in the next five years. Ecommerce marketers recognize the power of social media to connect with the audience. Facebook, Twitter, LinkedIn, and Instagram are nearly ubiquitous in everyone's lives. Businesses that integrate social media into the marketing strategy – from customer acquisition, to sales, to re-engagement campaigns – will benefit. Marketers can see in real-time what the audience cares about most, people interests, conversations and what audience like. Social networks can be used to better segment audience and understand the target demographics. This will help businesses to optimize the campaigns and deliver more targeted messaging. Social networks are so great for customer service, Immediacy is big in social media; people want information and desire it now. They enable

businesses for quick response with customer inquiries. In addition, social media makes it easier to spot and respond to unpleasant customer experiences. By developing a strategy for responding to customer inquiries via social media becomes helpful. A company's social profile is really its storefront. Customers are now using social networks to estimate companies and products. Company's yelp, Facebook, LinkedIn and other social pages provide the perfect opportunity to make a lasting impression. Start by optimizing the company's profiles and making important information easy-to-find.

2. RELATED WORKS

The store radically changes based on customer interests, showing programming titles to a software engineer and baby toys to a new mother. The click-through and conversion rates two important measures of Web-based and email advertising effectiveness vastly exceed those of untargeted content such as banner advertisements and top-seller lists. E-commerce recommendation algorithms often operate in a challenging environment [1]. With the increasing popularity of online e-commerce services, more and more people buy products online. As such, a large volume of online reviews have been constantly generated by users. Since review data contain rich information about users' feedback and opinions towards products they purchased, mining online reviews has attracted much interest (Hu and Liu 2004) which could be subsequently used for product sales prediction (Liu et al. 2007). Nevertheless, we argue that online reviews sometimes also contain implicit user demographic information which could be leveraged for product recommendation [2]. Distributed representations of words in a vector space help learning algorithms to achieve better performance in natural language processing tasks by grouping similar words. One of the earliest use of word representations dates back to 1986 due to Rumelhart, Hinton, and Williams. This idea has since been applied to statistical language modelling with considerable success. The follow up work includes applications to automatic speech recognition and machine translation, and a wide range of NLP tasks [3]. While this growth has provided users with a myriad of unique and useful apps, the sheer number of choices also makes it more difficult for users to find apps that are relevant to their interests. Historically, recommender systems have been introduced to alleviate this type of information overload by helping users find relevant items (i.e., apps) [4].

3. 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 the objective, 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, a large percentage of budgets are allocated to E-commerce application. The ability to turn fans into buyers has been relatively weak when 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 happens to the ecommerce application nowadays. 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 statistics must confer renewed hope to e-commerce retailers hostile to justify their social media efforts. Social media is a structure of influencer marketing; e-commerce renovation can't always be linked directly to a social channel, but that doesn't denote the purchases weren't influenced by anyone. So this is the major problem in the real world.

4. METHODOLOGY

ENHANCED MICROBLOGGING

In recent years Micro blogs data such as face book, reviews, news comments, and social media comments, has gained considerable attention 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. 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, it highlights the challenges and opportunities in micro blogs data research. 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. The richness 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.

ARTIFICIAL NEURAL NETWORK

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.

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.

ALGORITHM

MICROBLOG ALGORITHM OF ANN

Initialization: S1, S2, S3 (Server 1, 2, 3) , S1- Social Network, S2- E-Commerce, S3- News

PI → P1, P2, P3..... Pn (Profile Information)

P & I → Pr1 (a, b, c, d)

Pr2 (a, b, c, d)

Pr3 (a, b, c, d).....PrN (a, b, c, d) (Product Information)

N.I = N1, N2, N3 (News Information)

User → X1, X2, X3.....Xn

Generation: S3 displays [N1, N2, N3]

S2 updates [P1, P2, P3..... Pn]

S1 → P1, P2, P3..... Pn

Local host: Add(rd[0].ToString().ToUpper());

Load rd[0]

Initialize rd[1]

Connection S1 → S3

Creation of Artificial Neural Network → Local Host = Add(rd[0][1][2])

Merge → MB → P1, P2, P3.....Pn + Pr1(a,b,c,d), Pr2(a,b,c,d), Pr3(a,b,c,d).....PrN(a,b,c,d)

P1 (Pr1 (a,b,c,d))

P2 (Pr2 (a,b,c,d))

P3 (Pr3 (a,b,c,d))

Display: X1, X2, X3.....Xn = Session [user] N1, N2, N3 in S1

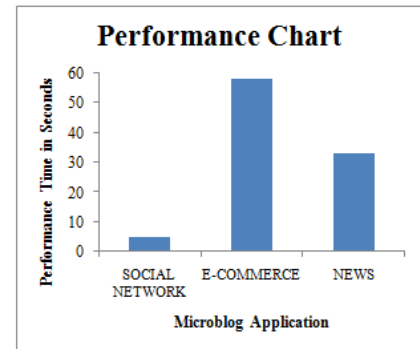
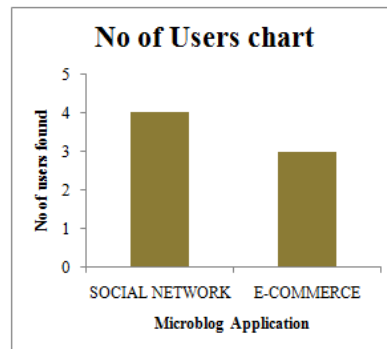
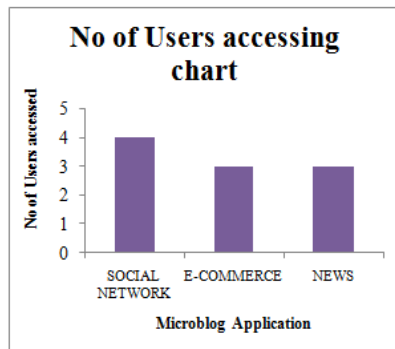
Result: S1=S2+S3

5. RESULT ANALYSIS

The above figure shows the various chart diagrams from the application and various results obtained during the time of execution.

Result 1

It shows the times of access of three networks. Mostly in this result the social network shows the major impact. Most of the users will interact with the social networks to obtain more information from other two networks.



Result 2

It shows available users in the social network and ecommerce application. This shows the impact of the available users in social network and ecommerce application.

Result 3

It shows the time of execution, in seconds. The processing time will be calculates according to the CPU and Ram process. The output shown in seconds, and social network takes less time in execution than ecommerce and news networks.

CONCLUSION

The Interconnection of Social Network, E-Commerce and News have been implemented successfully in this project with efficient data retrieval and data transfer by using Artificial Neural Network and Text Categorization. All these networks work on independent process too. The enhanced microblog creates an internal data transfer which enumerates efficient client server process among the three networks. Recommended products will be change according to the user's public chat and user's updated profile details. All the displaying news and products are more relevant to the users profile. Now, the 89 % of the internet users may use the 60% of the ecommerce application by implementing this system. This makes more sales in the ecommerce application. And also according the news concept, 89% of the social network users will view all the news according to their location and interests. This makes all the 89% of the internet users to use social network which benefits the e-commerce by turning the fans into buyers. In addition, more information can be viewed in a single screen with less internet data. The results show that the proposed framework is indeed effective in addressing the product recommendation problem and Location based news to the user.

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