OPEN ACCESS INTERNATIONAL JOURNAL OF SCIENCE & ENGINEERING

COLD START PRODUCT RECOMMENDATION USING SOCIAL DATA ANDMICRO-BLOGGING INFORMATION

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Abstract: **In recent years, the border between Online Media and E-Commerce is diminishing. Almost every single person in a metropolitan daily uses both social media like Face-book, Twitter, etc. for networking and uses internet to make huge purchases using e-commerce sites like Flipkart, Amazon, etc. We often login to e-commerce web-sites using our social accounts like FB or G+. We can also share our recent purchase details on the social media using the links to the product pages of e-commerce sites. We are focusing on the product recommendation to the users on e-commerce sites by leveraging the information or knowledge gained from the users social accounts. This will enable to assess the needs of the user in cold start situations. Cold Start is a state when user logs in to the e-commerce website for the first time and we don't have any information about the history of purchases, shopping trends, etc. as it is not yet created or available. When we have users social account information (no con-fidential information will be accessed) like posts, friends, shares, etc. then we can harness this to our benefit. For example, we will be applying data mining algorithms to access the micro-blogs the user has created and extract the useful keywords and hence this data from the micro blogs becomes the basis for product recommendation in cold start situations.**

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I INTRODUCTION

In recent years, the boundaries between e-commerce and social networking have become increasingly blurred. E-commerce websites such as eBay features many of the characteristics of social networks, including real-time status updates and interactions between its buyers and sellers. Some e-commerce websites also support the mechanism of social login, which allows new users to sign in with their existing login information from social networking services such as Facebook, Twit-ter or Google+. To address this challenge, we propose to utilize the linked users across convivial networking sites and e-commerce websites (users who have gregar-ious networking accounts and have made purchases on e-commerce websites) as a bridge to map user's gregarious networking features to latent features for product recommendation.

In concrete, we propose learning both users and products feature representations (called utilizer embedding and product embedding, respectively) from data amassed from e-commerce websites utilizing recurrent neural networks and then apply a modified gradient boosting trees method to transform user's gregarious net-working features into utilizer embedding's. We then develop a feature predicated matrix factorization approach which can leverage the learnt utilizer embedding's for cold-start product recommendation. We built our dataset from the most immensely colossal Chinese micro blogging accommodation SINA WEIBO2 and the most astronomically immense Chinese B2C e-commerce website, containing a total. The experimental results on the dataset have shown the feasibility and the efficacy of our proposed framework. Our major contributions are summarized below:

We formulate a novel quandary of recommending products from an e-commerce website to convivial networking users in cold-start situations. To the best of our erudition, it has been infrequently studied before.

We propose to apply the recurrent neural networks for learning correlated feature representations for both users and products from data amassed from an ecommerce website.

We propose a modified gradient boosting trees method to transform users' micro blogging attributes to latent feature representation which can be facilely incorporated for

product recommendation. We propose and instantiate a feature-predicated matrix factorization approach by incorporating utilizer and product features for cold-start product recommendation.

II LITERATURE REVIEW

Wayne Xin Zhao, Sui Li, Yulan He, Edward Y. Chang, JiRong Wen and Xi-aoming Li, " Connecting Social Media to ECommerce : Cold-Start Product Recommendation using Microblogging Information "[1]. In this paper, we give product recommendation using social and demographic information of user like age, gender, location, community etc. J. Wang, W. X. Zhao, Y. He, and X. Li, " Leveraging product adopter information from online reviews for product recommendation "[2]. In this paper experimental results on over 15 million reviews crawled from JINGDONG, the largest B2C e-commerce website in China, show the feasibility and effectiveness of pro-posed framework for product recommendation.

J. Lin, K. Sugiyama, M. Kan, and T. Chua, " Addressing coldstart in app recommendation: latent user models constructed from twitter followers "[4]. In this paper, he describe a method that accounts for nascent information culled from Twitter to provide relevant recommendation in such cold-start situations. He use Twitter handles to access an apps Twitter account and extract the IDs of their Twitter followers.

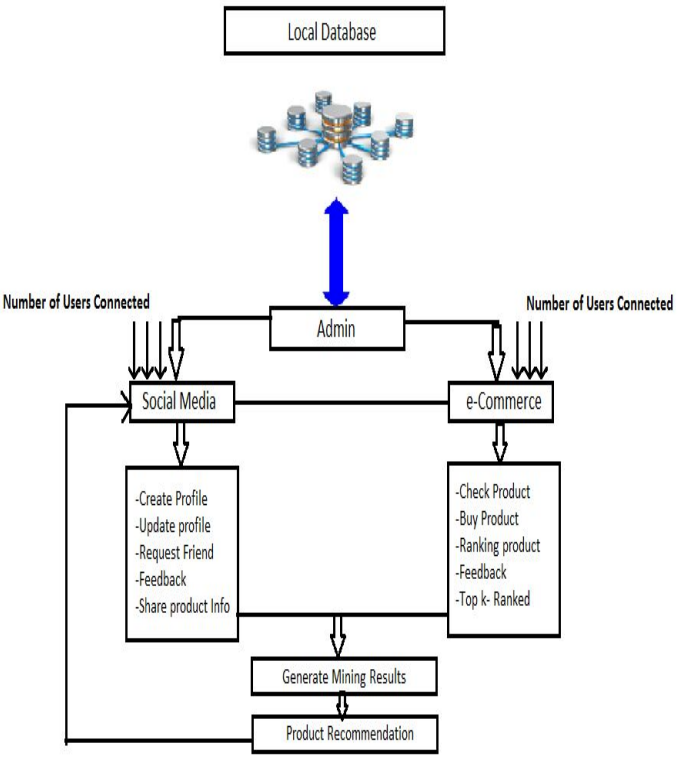
Steffen Rendle, " Social Network and Click-through Prediction with Factor-ization Machines Social Network Analysis "[5]. In this work, it was shown how Factorization Machines (FM) can be applied to predict the follower-relation. In this research two tasks of KDDCup 2012 are to predict the followers of a microblogger (track 1) and to predict the click-through rate of ads (track 2).

H. Ma, T. C. Zhou, M. R. Lyu, and I. King, " Improving recommender systems by incorporating social contextual information "[7]. He propose a factor analysis approach based on probabilistic matrix factorization to alleviate the data sparsity and poor prediction accuracy problems by incorporating social contextual information, such as social networks and social tags. In this paper experimental results show that the method performs much better than the state-of-the-art approaches.

M. Zhang, J. Tang, X. Zhang, and X. Xue, " Addressing cold start in recommender systems: a semi-supervised co-training algorithm "[3]. The proposed algorithms are evaluated on two real-world datasets. The experimental results show that with our method the recommendation accuracy is significantly improved com-pared to the standard algorithms and the cold-start problem is largely alleviated.

III PROPOSED SYSTEM

The below is the combination of the social and e-commerce site. This system gives the more accuracy for analysing the both technology. In this system user can use both websites at same location. If any user can purchases the any product from ecommerce website, he can send review of the product on his/her social site. Once user send that review then that post is updated on social site for product recommendation to his/her friends. In this project, we are going to create two websites namely social site and e-commerce site. No. of users are connected to both sites. Social site have functions like Create profile, Update profile, Sending friend request, giving feedback, and sharing the product information. E-commerce site also has features like Check product, Buy product, Feedback, Ranking the product. Mining the results from both sites user can get to know appropriate product recommendation and sell of e-commerce also get increased by receiving feedback from users.



IV APPLICATION

This is used in applications such as Data Mining where users opinion get on any product review on this features and service any company. This system is useful where Strong authorization is more important.

V OUTCOME

- Correct analysis.
- Get from multiple users review and quickly get analysis result.

VI RESULTS


SocialMedia
REGISTER NOW!
First Name
Sunil
Last Name
Vane
Email id
sbvane123@gmail.com
Password
Birth Date
07/13/1990
Gender
Male
Register
Reset
Login
E-mail
Password
Login
Reset
forgot password


SocialMedia
Home
Post
Request
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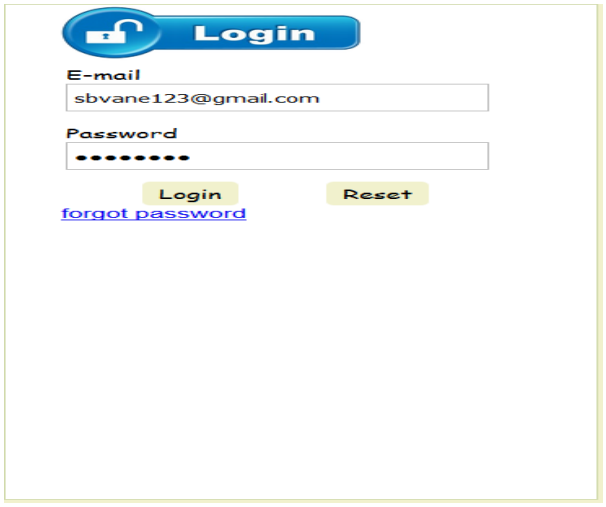
Profile
Logout
Search Friend
Search User
Send Friend Request
Advertisement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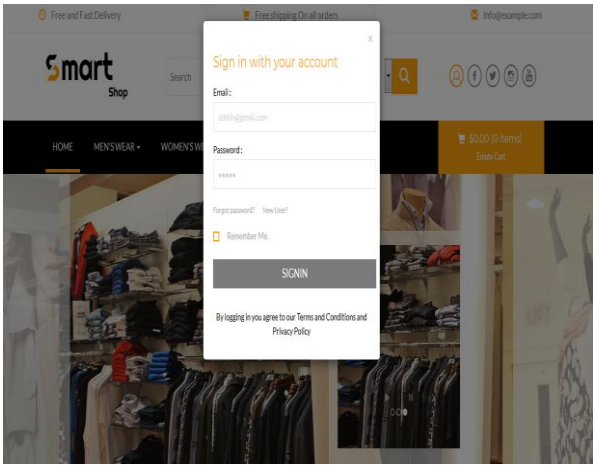
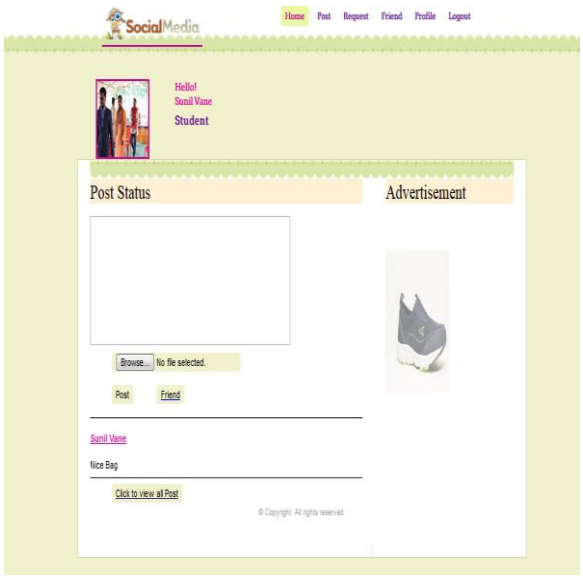

Smart Shop
Sign in with your account
Email:
Password:
SIGNIN
By logging in you agree to our Terms and Conditions and Privacy Policy


SocialMedia
Home
Post
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No file selected.
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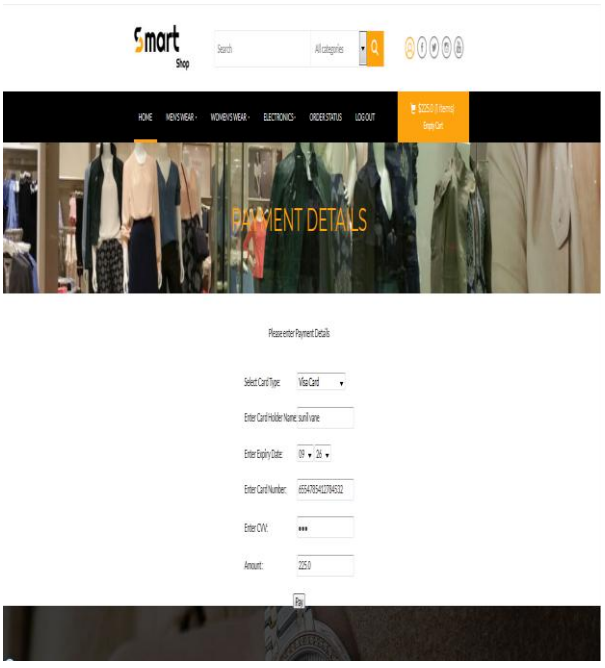
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HOME
MEN'S WEAR
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ORDER STATUS
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Please enter Payment Details
Select Card Type:
Visa Card
Enter Card Holder Name:
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Enter Expiry Date:
Enter Card Number:
Enter CVV:
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VII CONCLUSION AND FUTURE WORK

In this Paper, we have studied a novel problem, cross-site cold-start product recommendation, i.e., recommending products from e-commerce websites to micro blogging users without historical purchase records. Our main idea is that on the e-commerce websites, users and products can be represented in the same latent feature space through feature learning with the recurrent neural networks. Using a set of linked users across both e-commerce websites and social networking sites as a bridge, we can learn feature mapping functions using a modified gradient boosting trees method, which maps user's attributes extracted from social networking sites onto feature representations learned from e-commerce websites. The mapped user features can be effectively incorporated into a feature-based matrix factorization ap-proach for cold start product recommendation. We have constructed a large dataset from WEIBO and JINGDONG.

The results show that our proposed framework is indeed effective in address-ing the cross-site cold-start product recommendation problem. We believe that our study will have profound impact on both research and industry communities. Cur-rently, only a simple neutral network architecture has been employed for user and product embeddings learning. In the future, more advanced deep learning models such as Convolution Neural Networks can be explored for feature learning.

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