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Survey Paper On: Lars*: Location-Aware Recommender System Using CRM with Missed Call Service

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ABSTRACT: LARS*, a location-aware recommender system uses location-based ratings to produce recommendations. LARS* gives item locations using travel penalty, a technique that favors recommendation candidates closer in travel distance to querying users that avoids external access to all spatial items. LARS* is efficient, scalable, and capable of producing recommendations which are accurate compared to existing recommendation approaches. This application is useful for the Company Owner, Distributor and Retailer or the wholesaler. This System is developed for the business organizations to manage customer's data to improve their profit which will helps to increase the organizations business. It provides features that helps to business organizations to increase communication with their customers using some facilities of this system such as Email and SMS facilities along with customer's details and data. This application is related with all the food products like Ground Nut oil, Soybean Oil, Dal and Pulses, Turmeric Powder, Coriander powder etc. Business organizations can manage their sales orders, Contact us enquiry, Retailer gives Missed call through registered contact number, and much more through this system.

KEYWORDS: Recommender system, spatial, non-spatial, Collaborative filtering, Nearest Neighbor.

I. INTRODUCTION

Recommender systems make use of community opinions for users identify useful items from a considerably large search space. Collaborative filtering (CF) is technique used by many of these systems, find correlations of similar users and items to suggest k personalized items to a requested user u are analyzed by using past community opinions. Explicit ratings are represented by the triple that represents a user providing a numeric rating for an item to express community opinions.[3]

LARS*, uses location-based ratings to produce recommendations is proposed. Neither spatial properties of users nor items are considered by Traditional Recommender systems. LARS* exploits item locations using travel penalty, to maintain retailers base location. LARS* is efficient, scalable, and capable of producing recommendations as accurate compared to previous recommendation techniques. This application is useful for Company Owner, Distributor and Retailer. This system is developed to manage their customer's data effectively and to improve their profit which will helps to increase the organizations business. [1]

This application is related with all the food products like Ground Nut oil, Soybean Oil, Dal and Pulses, Turmeric Powder, Coriander powder etc. It also provides the customization facility to Admin to handle all responsibilities of system that can customize this system as per his/her organizational needs like add the product category and subcategory. Business organizations can manage their Distributor and Retailer management and support tasks through this system. Retailer gives miss call to distributor with registered Contact number. Then Distributor gives recommendation to retailer based on retailer's history and location. Here the retailer can book the order just give the simple missed call on the websites Toll-free no (Missed call no). Then his/her mobile no is updated to respective Distributor and the Admin panel. Here the admin can add the distributor and maintain all the data regarding distributor like Placed order, Date wise Order report, list of Distributor list.

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II. RELATED WORK

G. Linden et al,[2003] This paper defines E-commerce Web sites are used Item-to-Item Collaborative Filtering Recommendation algorithms, they use input about a customer's interests to produce a list of recommended items. Many applications consider list of items that customer's purchase and explicitly gives rating to represent their interests, and also use other attributes, including items viewed, demographic data, subject interests, and favorite artists. A large retailer might have huge amounts of data, tens of millions of customers and millions of distinct catalog items. Many applications require the results to be returned in real time instantly, also with high-quality recommendations. New user's have few information, based on less purchases or product ratings. Older customers can have a plenty of information, based on previous history , thousands of purchases and ratings. Customer data is always changes as per requirement: Each interaction provides valuable customer data, and the algorithm must respond immediately to new information. Three common methods to solve the recommendation problem: traditional collaborative filtering, cluster models, and search-based methods. Here, we compare these methods with our algorithm, which we call item-to-item collaborative filtering.[5]

Namita Mittal[2009],Recommender system framework using clustering and collaborative filtering have benefits like, Easy to implement, Not requires content of items, New data is added easily but also there are some problem which are cold start problem which is new user don't have efficient data for recommendation, it does not provide scalability. To solve this problem's item-based filtering is used.[9]

J. Konstan, and J. Riedl [2010] The user tasks is evaluated by the analysis and datasets being used, the ways in which prediction quality is measured, the evaluation of prediction attributes other than quality, and the user-based evaluation of the system as a whole. In addition to reviewing the evaluation strategies used by prior researchers, we present empirical results from the analysis of various accuracy metrics on one content domain where all the tested metrics collapsed roughly into three equivalence classes. Metrics within each equivalency class were strongly correlated, while metrics from different equivalency classes were uncorrelated.[6]

J. J. Levandoski, M. Sarwat, A. Eldawy, and M. F. Mok- bel[2012] LARS: A Location-Aware Recommender System, The CityVoyager system is used to mines a user's personal GPS trajectory data to determine her preferred shopping sites, and provides recommendation based on the system predicts the user is likely to go in the future. The spatial activity recommendation system mines GPS trajectory data with embedded user-provided tags in order to detect interesting activities located in a city. It uses this data to answer two query types: (a) given an activity type, return where in the city this activity is happening, and (b) given an explicit spatial region, provide the activities available in this region. Geo-measured friend-based collaborative filtering produces recommendations by using only ratings that are from querying user's social network friends that live in the same city. This technique only addresses user location embedded in ratings.[2]

Mohamed F. Mokbel Xiaopeng Xiong Walid G. Aref [2008] This paper gives new algorithm which is the Scalable Incremental hash-based Algorithm (SINA, for short); proposed new algorithm for evaluating a set of concurrent continuous spatiotemporal queries. two goals in mind are defined by SINA: (1) Scalability in terms of the number of concurrent continuous spatiotemporal queries, and (2) Incremental evaluation of continuous spatiotemporal queries. Scalability of SINA achieves by employing a shared execution paradigm where the execution of continuous spatiotemporal queries is abstracted as a spatial join between a set of moving objects and a set of moving queries. Updates of the previously reported answer are used for incremental evaluation[8].

Gediminas Adomavicius1 and Alexander Tuzhilin[2012] This paper presents the field of recommender systems and describes the current generation of recommendation methods. The paper describes limitations of current recommendation methods and discusses possible extensions that are used to improve recommendation capabilities and make recommender systems applicable to an even broader range of applications [7]

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SIHAI ZHANG,DANDAN YIN[2015] Several important data analysis techniques are summarized and reviewed, from temporal and spatial analysis to data mining and statistical test. Using Erlang measurement and call detail record, respectively, to understand the base station behavior. [9]

Xuejun Zhang, Xiaolin Gui[2014] The widespread use of Location-Based Services (LBSs), which allows untrusted service providers to collect large quantities of information regarding users' locations, has raised serious privacy concerns. Here address these issues by proposing a privacy quantification model, which is based on Bayes conditional privacy, to specify a general adversarial model.[14]

YUKA KOMAI, YUYA SASAKI[2015] *K*-nearest neighbor (*k*NN) queries, which retrieve the *k* nearest sensor data items associated with a location (location-dependent sensor data) from the location of the query issuer, are useful for location based services in mobile environments. the Filling area (FA) method to deficiently process *k*NN queries in the MANETs. The FA method achieves low overhead in query processing by reducing a search area. In many organizations the Distributors' and the retailer or the wholesaler data is managed manually so it is very tedious and crucial task to manage huge data manually. Some organizations use the CRM systems to manage their data but it is an e-CRM and it uses internet and centralized data so availability of data is 24/7. And it also provides more functionalities than CRM. Some organizations use CRM but it's not provide the facilities of Customization. Many CRM systems has the lack of communication facilities such as mails and SMS communication but this system will provide fully customized e-CRM functionalities to business organization with the advantage of mail, SMS facilities and some more flexible facilities that are not found generally in many CRM systems that are available in market such as Distributor and retailer details management, Book the order through Missed call, Placed orders and sales order management with retailers location, this system uses retailer's location to give recommendation to retailer. FAN YANG, ZHI-MEI WANG, Combining the GPS location-based services and the latest Web2.0 technologies, this paper builds a scalable personalized mobile information pushing platform, which can provide user-friendly and flexible location-based service. We first propose a Location-based Data and Service Middleware based on Service-Oriented Architecture in order to implement Mobile Information Pushing System involved in a variety of formats of data integration and conversion, as well as a combination of a wide range of services. [14]

Jie Bao1 Yu Zheng2 Mohamed F. Mokbel[2012] Previously, location-based social networks provide us with a new platform to understand users' behavior and preferences based on their location histories. In this paper, present a location-based and preference-aware recommender system that offers a particular user a set of venues (such as restaurants and shopping malls) within a geospatial range with the consideration of both: 1) User personal preferences, which are automatically learned from her location history and 2) Social opinions, which are mined from the location histories of the *local experts*.[13]

III. PROPOSED SYSTEM

LARS* produces recommendations using spatial items ratings for non-spatial items, i.e., the tuple (user, user_location, rating, item), by using a user partitioning technique that exploits preference locality.

To implement proposed system, used two algorithms

1. K-nearest neighbor algorithm
2. Location-Based Recommendation algorithm.

KNN is used to find out nearest retailer from requested retailer's location.For each retailer's request, ¨Given a query instance R_q (Retailer's Request)¨, Given a query instance R_q to be classified, Let x_1 ,x_2….x_k denote the k instances from requested retailer's location. Examples that are nearest to R_q. return the class that represents the maximum of the k instances. Collaborative Filtering Technique used with Preference locality filtering and Travel Penalty Filtering to implement new algorithm which is "Location-Based Recommendation Algorithm". KNN algorithm's result is used by location based recommendation algorithm to give location based recommendation.

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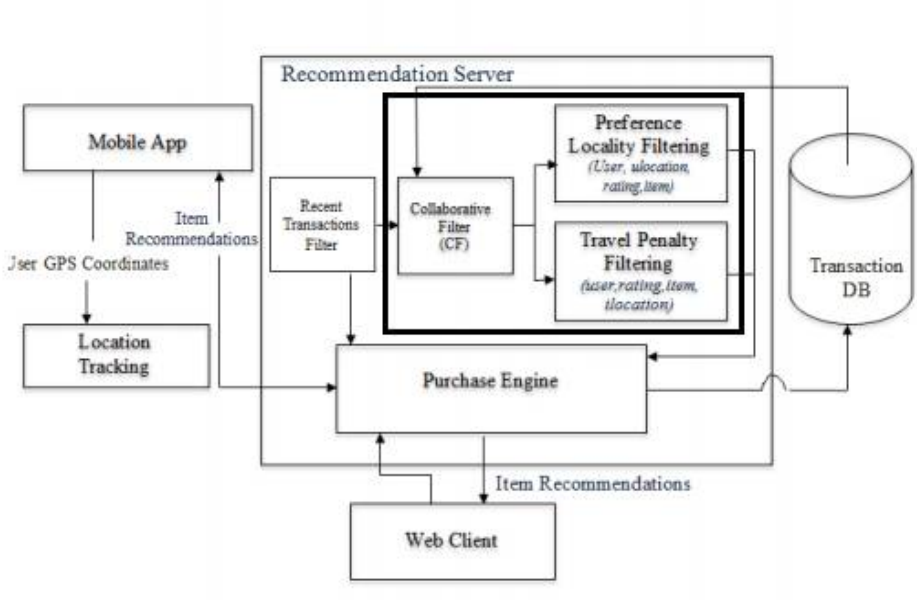

Figure 1. Architecture of LARS with food CRM system*

IV. CONCLUSION

LARS*, proposed location-aware recommender system, tackles a problem that are unsolved by traditional recommender. LARS* uses user partitioning and travel penalty techniques to support spatial ratings and spatial items, respectively. Both techniques can be applied separately or in concert to support the various types of location-based ratings. LARS* is efficient, scalable, and provides better quality recommendations than techniques used in traditional recommender systems.

REFERENCES

[1] “LARS*: an efficient and scalable location-aware recommender system”, Mohamed Sarwat ,June 2014.
[2] “LARS:A Location-Aware Recommender System”, in Proceedings of the International Conference on Data Engineering, J. J. Levandoski, M. Sarwat, A. Eldawy, and M. F. Mokbel, 2012.
[3] “Customer Relationship Management (CRM) Processes from Theory to Practice: The Pre-implementation Plan of CRM System”, Khalid Rababah, 2007.
[4]”Applying Data Mining in customer relationship management”, keyvan vahidy rodpysh,2010
[5]”Amazon.com Recommendations: Item-to-Item Collaborative Filtering”, G. Linden et al,2003, IEEE Internet Computing.
[6] "Item-Based Collaborative Filtering Recommendation Algorithms", Badrul Sarwar 2001.
[7] “Toward the Next Generation of Recommender Systems: A Survey of the State-of-the-Art and Possible Extensions”, IEEE Transactions on Knowledge and Data Engineering, G. Adomavicius and A. Tuzhilin,2005 .
[8] “SINA:Scalable Incremental Processing of Continuous Queries in Spatiotemporal Databases”, Mohamed F. Mokbel Xiaopeng Xiong Walid G. Aref,2008.
[9]”Recommender system framework using clustering and collaborative filtering”, Namita Mittal 2009.
[10] Computing on Base Station Behavior Using Erlang Measurement and Call Detail Record,sihai zhang,dandan yin, yanqin zhang,and wuyang zhou,2015
[11] k-Nearest Neighbor Search for Location-Dependent Sensor Data in MANETs,yuka komai, yuya sasaki, takahiro hara and shojiro nishio,2015
[12] Privacy Quantification Model Based on the Bayes Conditional Risk in Location-Based Services,Xuejun Zhang, Xiaolin Gui,2014
[13] Location-based and Preference-Aware Recommendation
Using Sparse Geo-Social Networking Data,Jie Bao1 Yu Zheng Mohamed F. Mokbel,2012
[14]A Mobile Location-based Information Recommendation System Based on GPS and WEB2.0 Services, Jie Bao,Yu Zheng Mohamed,F. Mokbel