

DIGITAL TOURIST GUIDE SYSTEM

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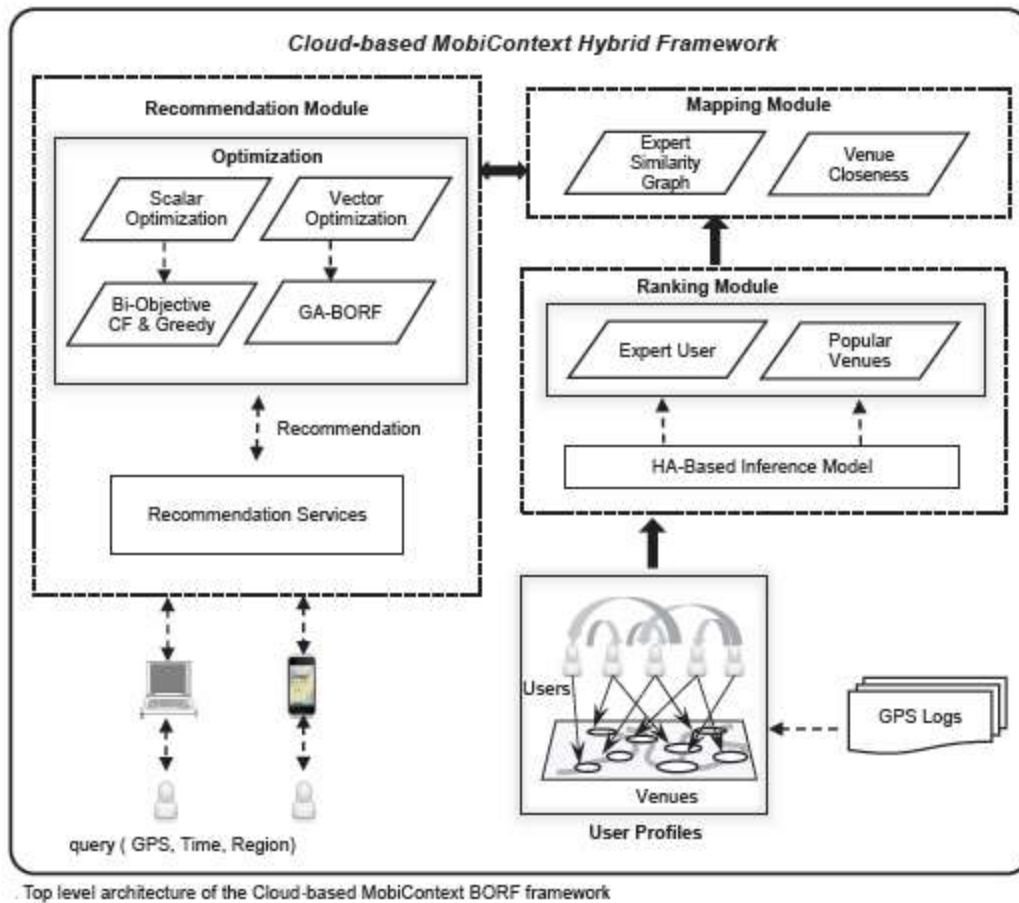
ABSTRACT

Recommendation frameworks have seen significant development in the field of information building. Performance of the vast majority of the current collaborative separating based recommendation framework endures because of the challenges, such as: (a) cold start, (b) data sparseness, and (c) scalability. Recommendation problem is regularly characterized by the presence of numerous conflicting objectives or decision variables, such as clients' preferences and venue closeness. MobiContext is a hybrid cloud based Bi - Objective Recommendation Framework (BORF) for mobile social systems. The MobiContext uses multi - objective advancement techniques to produce customized recommendations. The BORF performs data preprocessing by utilizing the Hub - Average (HA) inference model to deliver the issues relating to cold start and data sparseness. The proposed system uses filters to view only venues classified in a particular category for example only gardens, hill stations, lakes, etc. User have to login to the system and through GPS user's location will be obtained and venues nearby his/her location will be recommended.

Keyword: - Venue-based Recommendation Systems (VRS), Pearson Correlation Coefficient (PCC), NSGA-II algorithm, CF-based, Bi-Objective Recommendation Framework (BORF).

1. INTRODUCTION

This paper presents a brief survey of Location based news feed system for mobile user, the technologies deployed to track the mobile user's location, the accuracy and reliability associated with such measurements, the network infrastructure elements deployed by the wireless network operators to enable these kinds of services. A brief description of all the protocols and interfaces covering the interaction between device, gateway and application layers, are presented. The aspects related to billing of value added services using the location information and emerging architectures for incorporating this "location based news feed" model are introduced. The paper also presents some popular location based services deployed on wireless networks across the world. Thea progressing fast development of the Internet and simple availability of various e-commerce and social systems services, such as Amazon, Foursquare, and Gowalla, have brought about the sheer volume of data collected by the service suppliers on everyday schedule. The continuous accumulation of enormous volumes of data has moved the focus of research community from the basic information recovery problem to the separating of correlated information, thereby making it more applicable and customized to client's question. Along these lines, most research is currently directed towards the outlining of more savvy and self-governing information recovery systems, known as Recommendation Systems.



Top level architecture of the Cloud-based MobiContext BORF framework

Fig -1: Mobicontext BORF Network [1]

2. LITERATURE SURVEY

The following section gives the overview of the various research papers based on venue recommendations:

A Context-aware Personalized Travel Recommendation System based on Geo-tagged Social Media Data Mining:

In paper [2], Abdul Majid et al has proposed that the proliferation of digital cameras and the growing practice of online photo sharing using social media sites such as Flickr have resulted in huge volumes of geotagged photos available on the Web. Based on users' traveling preferences elicited from their travel experiences exposed on social media sites by sharing geotagged photos, author has proposed that a new method for recommending tourist locations that are relevant to users (i.e., personalization) in the given context (i.e., context awareness) and had obtained user-specific travel preferences from his/her travel history in one city and use these to recommend tourist locations in another city. The author's technique is illustrated on a sample of publicly available Flickr dataset containing photos taken in various cities of China. Results show that context-aware personalized method was able to predict tourists' preferences in a new or unknown city more precisely and generate better recommendations compared to other State-of-the-art landmark recommendation methods.

Location recommendation for location - based social networks:

In this paper [3], P. Yin et al has proposed the research issues in realizing location recommendation services for large-scale location-based social networks, by exploiting the social and geographical characteristics of users and locations/places. The analysis on a dataset collected from Foursquare, a popular location-based social networking

system, it was observed that there exists strong social and geospatial ties among users and their favorite locations/places in the system. Authors developed a Friend-based Collaborative Filtering (FCF) approach for location recommendation based on collaborative ratings of places made by social friends and proposed a variant of FCF technique, namely Geo-Measured FCF (GM-FCF), based on heuristics derived from observed geospatial characteristics in the foursquare dataset. Thus the evaluation results show that the proposed family of FCF techniques holds comparable recommendation effectiveness against the state-of-the-art recommendation algorithms, while incurring significantly lower computational overhead. The GM-FCF provides additional flexibility in tradeoff between recommendation effectiveness and computational overhead.

Time-aware Recommender Systems: A Comprehensive Survey and Analysis of Existing Evaluation Protocols:

In this paper [4], exploiting temporal context has been proved to be an effective approach to improve recommendation performance, as shown, e.g. in the Netflix Prize competition. Time-aware recommender systems (TARS) are indeed receiving increasing attention. A wide range of approaches dealing with the time dimension in user modeling and recommendation strategies have been proposed. Aiming to clarify and address existing discrepancies, presented a comprehensive survey and analysis of the state of the art on TARS. The analysis show that meaningful divergences appear in the evaluation protocols used—metrics and methodologies. It was identified that a number of key conditions on offline evaluation of TARS, and based on these conditions, it provided a comprehensive classification of evaluation protocols for TARS. Moreover, it was proposed that a methodological description framework aimed to make the evaluation process fair and reproducible and presented an empirical study on the impact of different evaluation protocols on measuring relative performances of well-known TARS.

A Random Walk around the City: New Venue Recommendation in Location-Based Social Networks:

In this paper [5], the popularity of location-based social networks available on mobile devices means that large, rich datasets that contain a mixture of behavioral (users visiting venues), social (links between users), and spatial (distances between venues) information are available for mobile location recommendation systems. These datasets greatly differ from those used in other online recommender systems, where users explicitly rate items: it remains unclear as to how they capture user preferences as well as how they can be leveraged for accurate recommendation. This paper seeks to bridge this gap with a three-fold contribution. Authors examined that how venue discovery behavior characterizes the large check-in datasets from two different location-based social services, Foursquare and Gowalla: by using large-scale datasets containing both user check-ins and socialites, analysis reveals that, across 11 cities, between 60% and 80% of users' visits are in venues that were not visited in the previous 30 days. Authors had shown that, by making constraining assumptions about user mobility, state-of-the-art filtering algorithms, including latent space models, do not produce high-quality recommendations and had proposed that a new model based on personalized random walks over a user-place graph that, by seamlessly combining social network and venue visit frequency data, obtains between 5 and 18% improvement over other models. The results paved the way to a new approach for place recommendation in location-based social systems.

Storing Routes in Socio-Spatial Networks and Supporting Social-Based Route Recommendation:

In this paper [6], Yerach Doytsher et al has proposed that Cellular phones and GPS-based navigation systems allow recording the location history of users, to find places the users frequently visit and routes along which the users frequently travel. This provides associations between users and geographic entities. Considering these associations as edges that connect users of a social network to geographical entities on a spatial network yields an integrated socio-spatial network. Queries over a socio-spatial network glean information on users, in correspondence with their location history, and retrieve geographical entities in association with the users who frequently visit these entities. The author have presented a graph model for socio-spatial networks that store information on frequently traveled routes and a query language that consists of graph traversal operations, aiming at facilitating the formulation of queries, and it was shown that how queries over the network can be evaluated efficiently and how social-based route recommendation can be implemented using our query language was also shown. The author

described an implementation of the suggested model over a graph-based database system and provide an experimental evaluation, to illustrate the effectiveness of the model.

Initializing Matrix Factorization Methods on Implicit Feedback Databases:

In this paper [7], the implicit feedback based recommendation problem—when only the user history is available but there are no ratings—is a much harder task than the explicit feedback based recommendation problem, due to the inherent uncertainty of the interpretation of such user feedbacks. Implicit feedback problem is being received more attention, as application oriented research gets more attractive within the field. Authors have focused on a common matrix factorization method for the implicit problem and investigate if recommendation performance can be improved by appropriate initialization of the feature vectors before training. The author have presented that a general initialization framework that preserves the similarity between entities (users/items) when creating the initial feature vectors, where similarity is defined using e.g. context or metadata information and also have demonstrated that how the proposed initialization framework can be coupled with MF algorithms and experimented with various similarity functions, different context and metadata based similarity concepts. The evaluation is performed on two implicit variants of the Movie Lens 10M dataset and four real life implicit databases. The author had shown that the initialization significantly improves the performance of the MF algorithms by most ranking measures.

3. PROPOSED SYSTEM

The system proposed in this framework current user location is considered in the system in which user gets different recommendations based on the location. This reflects the fact that if the user changes his/her location the received recommended items will be affected because of changing in the location. Our model and proposed query language can facilitate recommendation by providing a generic framework to define the users and the recommended routes.

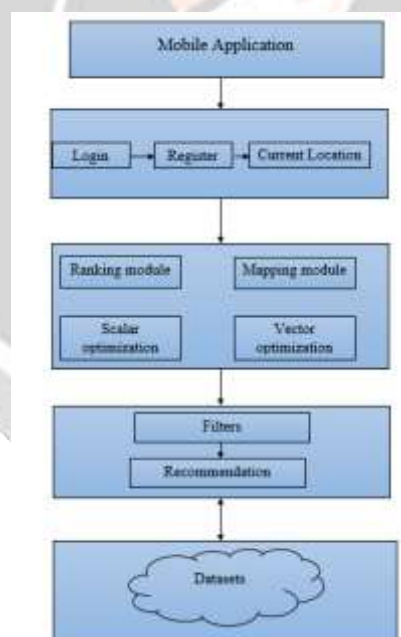


Fig -2: System Architecture

4. CONCLUSIONS

We proposed a cloud based framework MobiContext that produces streamlined recommendations by at the same time considering the exchange –offs among genuine - world physical factors, such as individual's geographical location and location closeness. The significance and oddity of the proposed framework is the adjustment of

collaborative sifting and bi-objective streamlining approaches, such as scalar and vector. In our proposed approach, data sparseness issue is tended to by incorporating the client – to – client comparability computation with confidence measure that evaluates the measure of comparative interest indicated by the two clients in the venues commonly went to by both of them. In addition, an answer for cold start issue is discussed by introducing the HA inference display that relegates positioning to the clients and has a precompiled arrangement of prevalent unvisited venues that can be recommended to the new client. Later on, we might want to develop our work by incorporating more contextual data as objective functions, such as the check - in time, clients' profiles, and hobbies, in our proposed framework. Besides, we mean to incorporate different approaches, such as machine learning, content mining, and artificial neural systems to refine our current framework

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