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An Efficient Approach of Travel Recommendation Model from High Dimensional Databases – A Survey

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Abstract: *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 geo tagged photos available on the Web. Based on users' traveling preferences elicited from their travel experiences exposed on social media sites by sharing geo tagged photos, we propose a new method for recommending tourist locations that are relevant to users (i.e., personalization) in the given context (i.e., context awareness). We obtain user-specific travel preferences from his/her travel history in one city and use these to recommend tourist locations in another city. Our technique is illustrated on a sample of publicly available Flickr dataset containing photos taken in various cities. Results show that our context-aware personalized method is 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.*

I. INTRODUCTION

Research on moving-object data analysis has been recently fostered by the widespread diffusion of new techniques and systems for monitoring, collecting and storing location aware data, generated by a wealth of technological infrastructures, such as GPS positioning, sensor- and mobile-device networks, tracking facilities. These have made available massive repositories of spatio-temporal data, that call for suitable analytical methods, capable of enabling the development of innovative, location-aware applications and services. So far, research efforts have been largely geared towards either the definition of new movement patterns, or the development of solutions to algorithmic issues, to improve existing pattern-mining schemes in terms of effectiveness and/or efficiency. As a consequence, several intelligent tools for movement data analysis have rapidly flourished. In the meanwhile, however, the necessary attention has not been paid to the definition of a unifying framework, wherein to set the above pattern-mining tools as specific components of the knowledge discovery process. In the absence of a unifying framework, the process of progressively querying and mining both movement data and patterns is a challenging issue. Indeed, the individual mining techniques can hardly be combined into an actual multi-step process, since their results are typically neither directly exploitable to feed some further analysis, nor uniformly manageable with raw data.

We believe that this is a primary limitation for the real-world applications of movement data analysis, where it rarely happens that a single pattern-mining activity (i.e. either of the foresaid tools) suffices to meet the underlying analytical requirements. In the current state of the art, the lack of support to knowledge discovery as an actual multi-step process makes impractical all those applications, that involve multiple stages of analysis and manipulation for both data and patterns, in which the results at each stage are required to become the input to the subsequent stage.

As a motivating example, consider the following analytical requirement, that calls for the search of common behavioral patterns in the context of specific spatial patterns: among the movements of people, find the sequence of frequently visited regions on Sunday in the city center and, among them, find the groups of trajectories that exhibit uniform movement behavior. Satisfying such a requirement involves a complex two-steps process, wherein multiple mining methods as well as forms of background knowledge need be progressively and seamlessly exploited. In this approach, to the best of our knowledge, we take a first step towards progressively mining and querying movement data. In this direction, the contribution we propose is twofold. We first introduce a framework called Two-World that gives the theoretical background to the progressive mining process. Consequently, based on that, we realized an innovative computational environment, called GeoPKDD system that provides effective support to the whole knowledge discovery process on movement data. The core component of the system is the data mining query language, based on the proposed framework, and capable of accommodating and combining disparate mining tasks into a multi-step knowledge discovery process.

A. Literature Survey

P. Adrian and G. Gregory et al [1] They focus on temporal information with query and photos in term of trip duration, the weather information and current temporal they did not considered. Solving automatic router planning problem to compute the visit time of site and discover trip.

Y. Sun et al [2] They develops the recommendation system for a tourist that can provide the best travel route to user as well as popular landmarks. Travel best routes to destination in the city using geo tagged photos. The length of road and popularity assessment both are considered to routes recommendation. Maximal tourist's popularity and minimizes distance its best router recommendation for tourist. User have good travel plan and recommend suitable routes in the city, find out the best road set the routing for tourist trip.

M. Clements et al [3] They purposed method for tourist preference location to predict from Flickr photos, using probabilistic Bayesian method used to individual user favorite location and calculate the similarities geo-tagged photos for different users.

Y. Zheng and X. Xie et al [4] Travel recommendation for tourist such as travel time, reach ability, distance and sequential between locations, like trip duration, planning, trip cost and number of factor take from account perform travelling recommendation for tourist The unfamiliar city information tourist know due to short period of time journey minimal effective while save a lot time. HITS (Hypertext Induced Topic Search)-based inference model between user and location and travel sequence recommendation.

Z. Yin et al [5] Two kind of user to discover interest trajectory pattern one those who have interest in most necessary trajectory patterns like new city have many famous location most tourists have interest and other those who interest discover the new location in diverse way, not much interest router areas.

A. Majid et al [6] The various approaches and algorithm have been purposed to make the personalized recommendation system for tourist from geo tagged photo. They purposed new method for personalization travel to get tourist his/her location history and their preference in one city recommend tourists location to another city. To more precise predict tourist's location preferences in unknown or new city by personalized method. The planning for tourist's trip various and unknown locations used personalized recommendation tourist locations and consider spatial, weather content for tourist.

K. Jiang et al [7] They focus on personalized recommendation system geo tagged photos quality in photo share to online website. Popularity of user photo estimation and detect tourist attracts to geo tag. User personal preference shows the visual and textual information in photo. User travel behavior to discover the spatial fluctuation to attract popular and distance by user photos time taken. J. Bao et al [8] Personal recommendation system depend on user personal interest by categories like park, restaurant and famous place etc. recently research user location histories and social environment user to make recommendation and user preferences using preference to selected user algorithm top-k rank location are reappearance recommend as the user.

Y. Huang et al [9] They purpose to personalized recommendation system for tourist to attract unfamiliar cities and satisfy the users according to their preferences. Tourist plan number of categories such as choice attracts location, accommodation and destination at most present in travel recommendation. They focus on Information for tourist location and travel destination, Bayesian network select estimation the tourist prefers activities.

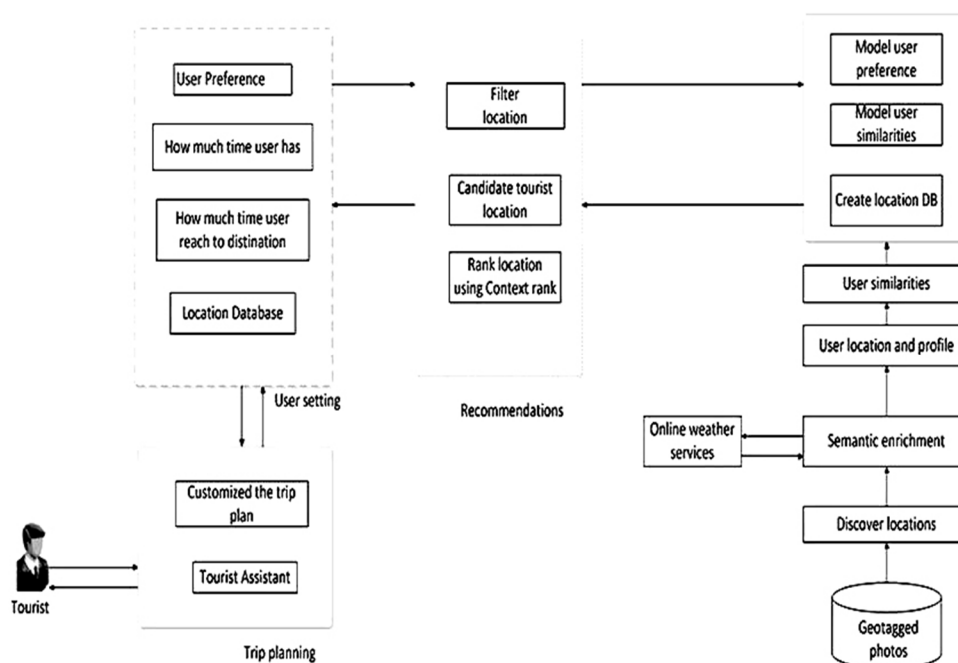
M. Ester et al [10] Personalized recommendation two aspects one finds the location tourist that attract the tourists and find the route direction two attractive first, to calculate the distance between original points to destination and second provide the best direct to reach the destination.

John Kracht et al [11] This paper examines the evolution and transformation of tourism distribution channels, focusing on the role the Internet has played in such a process. It attempts to graphically illustrate, in a temporal manner, the evolving complexity of the tourism distribution systems.

Andrew Gallagher et al [12] Associating image content with their geographic locations has been increasingly pursued in the computer vision community in recent years. In a recent work, large collections of geotagged images were found to be helpful in estimating geo-locations of query images by simple visual nearest-neighbors search. In this paper, we leverage user tags along with image content to infer the geo-location. Dimitrios Buhalis et al [13] New eMediaries include a wide range of organisations including suppliers (eg airlines, hotels etc) selling direct on the Internet by allowing users to access directly their reservation systems; web-based travel agents; Internet portals and vortals, and auction sites. The expected proliferation of Digital TV and mCommerce will gradually intensify competition further.

Zheng Xiang et al [14] The analysis of the search results showed that social media constitute a substantial part of the search results, indicating that search engines likely direct travelers to social media sites. This study confirms the growing importance of social media in the online tourism domain.

Gael Chareyron et al [15] Several social network provide essential information on the perceptions of tourist destination. Nevertheless to operate correctly, several points should be discussed. This article provides multiple ideas for reflections on the challenges and opportunities offered by these new media.



Architecture of tourists location recommendation system

II. CONCLUSION

In this article, we put forward an approach to extract semantically meaningful tourist locations from geotagged social media such as photos for tourist travel recommendations. We have contributed a method that applies a collaborative filtering approach to obtain tourist's preferences from his or her publicly contributed photos and takes into account the current context of user for personalized recommendations. We presented the evaluation of our methods on a sample of publicly available photos from the Flickr dataset. It contains metadata of photos taken in various cities in China. Results show that our context-aware personalized method is 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. We found that people's preferences with short and targeted visits are easier to predict by methods based on popularity. Performance of collaborative filtering methods based on tourist preferences improves in the case of long and real tourist visits. Moreover, considering contexts gives a substantial improvement in the precision of prediction.

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