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Social Media Based Personalized Travel Sequence Recommendation

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ABSTRACT: A personalized travel sequence recommendation system to uses users Facebook data Interest (POIs), topical interest, cost, time and season to recommend places . The rapid growth of online travel information imposes an increasing challenge for tourists who have to choose from a large number of travel packages to satisfy their personalized requirements. On the other side, to get more business and profit, the travel companies have to understand these preferences from different tourists and serve more attractive packages. Proposed System is not only personalized to users travel interest but also able to recommend a travel sequence rather than individual Points of Interest (POIs). Topical package space including representative tags, the distributions of cost, visiting time and visiting season of each topic, is mined to bridge the vocabulary gap between user travel preference and travel routes. We map both users and routes textual descriptions to the topical package space to get user topical package model and route topical package model (i.e., topical interest, cost, time and season).Proposed system will Book the user Pkg. in that user will get all cost for the mined places and will view route on map from user current location.User can add his photos and travelogues in system.

KEYWORDS: POI,Geo-tagged photos, GPS, Social media-Facebook API, Multimedia information retrieval. Online interest, Travel recommendation.

I. INTRODUCTION

Big media, especially the flourish of social media (e.g., Facebook, Flickr, Twitter etc.) offers great opportunities to address many challenging problems, for instance, GPS estimation and travel recommendation. These data are not only useful for reliable POIs (points of interest) mining , travel routes mining, but give an opportunity to recommend personalized travel POIs and routes based on user's interest. There are two main challenges for automatic travel recommendation. First, the recommended POIs should be personalized to user interest since different users may prefer different types of POIs. Second, it is important to recommend a sequential travel route (i.e., a sequence of POIs) rather than individual POI. It is far more difficult and time consuming for users to plan travel sequence than individual POIs. Because the relationship between the locations and opening time of different POIs should be considered. Existing studies on travel recommendation mining famous travel POIs and routes are mainly focused on from four kinds of big social media, GPS trajectory, check-in data geo-tags and blogs (travelogues).

II. MOTIVATION

Automatic travel recommendation is an important problem in both research and industry. There are two main challenges for automatic travel recommendation. First, the recommended POIs should be personalized to user interest since different users may prefer different types of POIs. Second, it is important to recommend a sequential travel route (i.e., a sequence of POIs) rather than individual POI. It is far more difficult and time consuming for users to plan travel sequence than individual POIs. For example, it may still not be a good recommendation if all the POIs recommended

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for one day are in four corners of the city, even though the user maybe interested in all the individual POIs. general travel route planning cannot well meet users personal requirements. Personalized travel recommendation recommends the POIs and routes by mining users travel records.

III. REVIEW OF LITERATURE

1. This paper presents content information on LBSNs w.r.t. POI properties, user interests, and sentiment Indications. We model the three types of information under a unified POI recommendation framework with the consideration of their relationship to check-in actions. The experimental results exhibit the significance of content information in explaining user behavior, and demonstrate its power to improve POI recommendation performance on LBSNs. [4].
2. This paper proposed a personalized travel sequence recommendation system by learning topical package model from big multi-source social media: travelogues and community contributed photos. The advantages of this system are automatically mined user's and routes' travel topical preferences including the topical interest, cost, time and season. They recommended not only POIs but also travel sequence [8].
3. Focus on the problem of time-aware POI recommendation, which aims at recommending a list of POIs for a user to visit at a given time. To exploit both geographical and temporal influences in time-aware POI recommendation [5].
4. novel landmark search system is introduced based on a newly designed heterogeneous information fusion scheme and a query-dependent landmark ranking strategy. Different from the existing travel guide systems, the proposed system can effectively combine the heterogeneous information from multimodality media into a landmark Reranking list via a user's query. [9].
5. The basic concept is an unsupervised image GPS location estimation approach with hierarchical global feature clustering and local feature refinement. Consist of two parts: offline system and online system. The advantage is reduced computation time. The disadvantage is in online system data should be not secured [6].
6. The basic concept is an author topic model-based collaborative filtering (ATCF) method is proposed to facilitate comprehensive points of interest (POIs) recommendations for social users. The advantage is similar travel topics are shared. The disadvantage is, dataset is small. Only textual information of geo-tagged is given [3].
7. A path search system to facilitate tourists' trip planning, not only where to visit but also how to visit. a travel path search system based on geo-tagged photos to facilitate tourists' trip planning, not only for where to visit but also how to visit. The large scale geo-tagged photos that are publically available on the web make this system possible, as geo-tagged photos encode rich travel-related metadata and can be used to mine travel paths from previous tourists [1].

IV. SYSTEM OVERVIEW

Fig.1: Propose the system mines users POI From Facebook .For that user have to register with his Facebook developer API. Admin login to system and can add places for each place in city. He can view the user's details as well as each user's interest. User register to the system with its Facebook developer access token that used to get users Facebook data and from that we are mining user's preference by Lavenstine Distance Algorithm .To generate Facebook token user have to create developer account. User can add travelogs detail and his community contributed photos. Travelogs details are used to get user preferred season for travelling .From dataset travelogs are mined to get time season cost for each place. When user enters the query to search places use get details according to his preference which is get at the time of registration. User can give rating, comment to each place. User can get optimized package according to his preference of similar user. User can view places recommendation by Rating, Online interest, Preference, activity, Season .He can view his package that contain best season, cost, and preference package detail. User can view online interests package. User can view places on map. User can view multiple preferences package detail. User can view places on map.

ADVANTAGES-

1 It recommends places by mining user online point of interest and show package by mining user interest from Facebook data.

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2. User updates his interest after some days
- 2 It also give recommendation using similar user interest and according to that gives recommendation to user.
3. Applies filter on searching places.

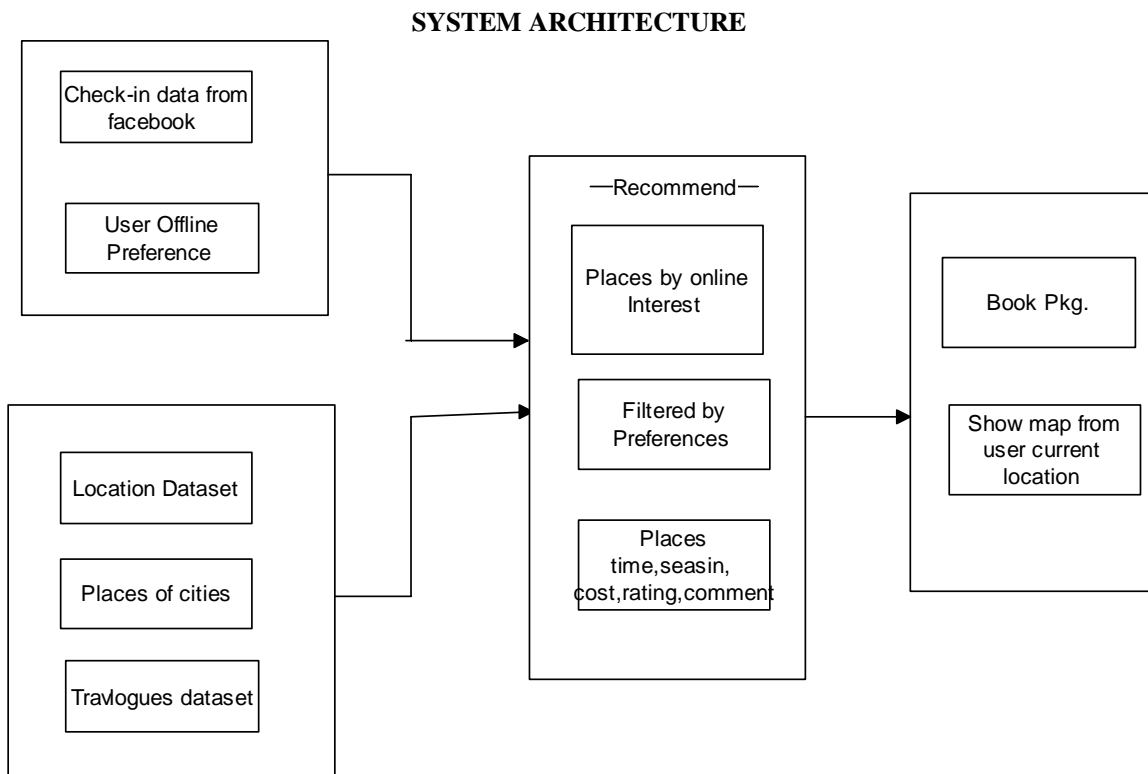


Fig. 01 System architecture

V. MATHEMATICAL MODEL

1. The number of different tags of the user= Nu
2. User Topical Interest Distribution= $\alpha^{(U)}$
3. The summation of the all tag's distribution represents the topic distribution $\alpha^{(U)} = [\epsilon 1^{(U)}, \dots, \epsilon 2^{(U)}, \dots, \epsilon N^{(U)}]$
4. The user's topical interest towards $C_k = \epsilon i^{(U)}$
5. The score of the i-th tag to the k-th topic= $X_{i,k}$
6. POI's topical distribution = $\alpha^{(P)} = [\epsilon 1^{(P)}, \dots, \epsilon k^{(P)}, \dots, \epsilon N^{(P)}]$

7. The number of different tags of all the travelogues related to this POI= nP

1. The normalized topic score of the k-th topic, which is obtained a

$$\epsilon k^{(U)} = \epsilon k^{(U)} / \sum_{i=1}^N \epsilon i^{(U)}$$

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2. Sum the scores of all the tags of the user towards ck as:
- $$i^{(U)} = \sum_{k=1}^{nU} X_{i,k}$$
3. User's topical interest
- $$\alpha^{(U)} = [i^{(U)}, \dots, i^{(U)}, \dots, i^{(U)}]$$

VI.ALGORITHMS

1.LEVENSHTEINDISTANCE ALGORITHM.

This is used to get POI mining from data which we get from Facebook at the Time of registration.

Input.1. Preference

2. Dataof Facebook data

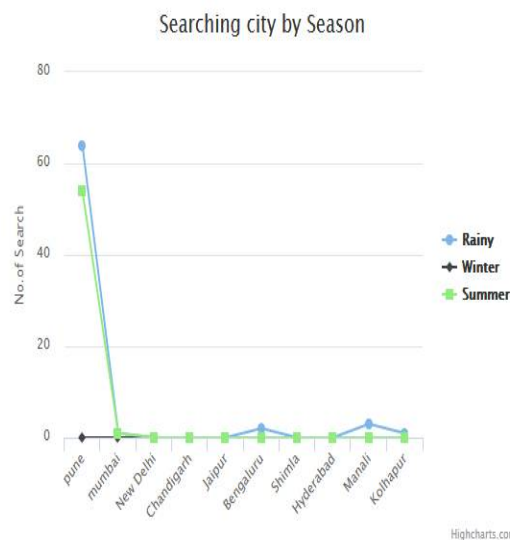
3. Distance to match preference inFacebook data.

Output: no. of time matched string with Facebook data.

Working: System will get preference and will match that preference inFacebook data

According to specified distance. Then no.of preferences will get for each preference.

VII.EXPERIMENT RESULT



Graph 1. Shows no. of searches for each season of particular city

Explanation: Graph. Shows no. of searches for each season of particular city in one month

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Result Table:

	summer	winter	Rainy
Pune	55	3	21
mumbai	2	4	2
chandigarh	2	2	3
jaipur	3	1	2
bengaluru	3	4	1

Table 01. Shows no. of searches for particular city in different season for one month.

VIII. CONCLUSION

In this paper, we have proposed a personalized travel sequence recommendation system by learning regional package model from social media. The advantages of our system are: 1] the system automatically mined users and routes travel topical preferences including the regional interest, city, topical interest, cost, time and season. 2.] We recommended not only POIs but also travel sequence and considering users travel preferences, activity, online interest at the same time. 3] Provides map of travel sequence. We mined places based on the similarity between user package. Finally map of travel sequence is provided from current location. User add his photos and travelogues in system to securely store data.

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