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An Implementation of Keyword Based Travel Route Recommendation System Using The Data Mining Algorithm

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ABSTRACT: ***In this paper we will be discussing about Implementation of the travel route prediction using the customer review. Optimal route search using spatial keyword query focus on key-word searching using best keyword cover query which is a form of spatial keyword query. It operates on spatial objects stored in spatial database and comes with algorithms that can retrieve answer in a fast manner. Best keyword cover query aims to find objects associated with keywords. The method proposed considers keyword rating, keyword relevance and spatial relevance. It also helps to retrieve data based on mining result.***

KEYWORDS- *Spatial keyword query, mining, travel database, travel information, classification.*

I INTRODUCTION

With the popularity of social media (e.g., Facebook and Flicker), users can easily share their check-in records and photos during their trips. In view of the huge number of user historical mobility records in social media, we aim to discover travel experiences to facilitate trip planning. When planning a trip, users always have specific preferences regarding their trips. Instead of restricting users to limited query options such as locations, activities or time periods, we consider arbitrary text descriptions as keywords about personalized requirements. Moreover, a diverse and representative set of recommended travel routes is needed. Prior works have elaborated on mining and ranking existing routes from check-in data. To meet the need for automatic trip organization, we claim that more features of Places of Interest (POIs) should be extracted. Therefore, in this paper, we propose an efficient Keyword-aware Representative Travel Route framework that uses knowledge extraction from users historical mobility records and social interactions. Explicitly, we have designed a keyword extraction module to classify the POI-related tags, for effective matching with query keywords. We have further designed a route Reconstruction algorithm to construct route candidates that fulfill the requirements. To provide befitting query results, we explore Representative Skyline concepts, that is, the Skyline routes which best describe the trade-offs among different POI features. To evaluate the effectiveness and efficiency of the proposed algorithms, we have conducted extensive experiments on real Location -based social network datasets, and the Experiment results show that our methods do indeed demonstrate good performance compared to state-of-the-artworks. Nearest neighbor based on a new similarity measure, named weighted average of index rating which combine keyword rating, keyword search and nearest neighbor search.

II REVIEW OF LITERATURE

Mining peoples trips from large scale geo-tagged photos
AUTHORS: Y. Arase, X. Xie

Photo sharing is one of the most popular Web services. Photo sharing sites provide functions to add tags and geo-tags to photos to make photo organization easy. Considering that people take photos to record something that attracts them, geo-tagged photos are a rich data source that reflects people's memorable events associated with locations. In this paper, we focus on geo-tagged photos and propose a method to detect people's frequent trip patterns, i.e., typical sequences of visited cities and durations of stay as well as descriptive tags that characterize the trip patterns. Our method first segments photo collections into trips and categorizes them based on their trip themes, such as visiting landmarks or communing with nature. Our method mines frequent trip patterns for each trip theme category. We crawled 5.7 million geo-tagged photos and performed photo trip pattern mining. The experimental result shows that our method outperforms other baseline methods and can correctly segment photo collections into photo trips with an accuracy of 78. For trip categorization, our method can categorize about 80 of trips using tags and titles of photos and visited cities as features. Finally, we illustrate interesting examples of trip patterns detected from our data set and show an application with which users can search frequent trip patterns by querying a destination, visit duration, and trip theme on the trip.
Optimal route search using FAVOUR algorithm
Authors: X. Cao, L. Chen

Identifying a preferable route is an important problem that finds applications in map services. When a user plans a trip within a city, the user may want to find "a most popular route such that it passes by shopping mall, restaurant, and pub, and the travel time to and from his hotel is within 4 hours." However, none of the algorithms in the existing work on route

planning can be used to answer such queries. Motivated by this, we define the problem of keyword-aware optimal route query, denoted by KOR, which is to find an optimal route such that it covers a set of user-specified keywords, a specified budget constraint is satisfied, and an objective score of the route is optimal. The problem of answering KOR queries is NP-hard.

We devise an approximation algorithm OS Scaling with provable approximation bounds. Based on this algorithm, another more efficient approximation algorithm Bucket Bound is proposed. We also design a greedy approximation algorithm. Results of empirical studies show that all the proposed algorithms are capable of answering KOR queries efficiently, while the Bucket Bound and Greedy algorithms run faster. The empirical studies also offer insight into the accuracy of the proposed algorithms.

Mining significant semantic locations from GPS data Authors: X. Cao, G. Cong

With the increasing deployment and use of GPS-enabled devices, massive amounts of GPS data are becoming available. We propose a general framework for the mining of semantically meaningful, significant locations, e.g., shopping malls and restaurants, from such data. We present techniques capable of extracting semantic locations from GPS data. We capture the relationships between locations and between locations and users with a graph. Significance is then assigned to locations using random walks over the graph that propagates significance among the locations. In doing so, mutual reinforcement between location significance and user authority is exploited for determining significance, as are aspects such as the number of visits to a location, the durations of the visits, and the distances users travel to reach locations. Studies using up to 100 million GPS records from a confined spatiotemporal region demonstrate that the proposal is effective and is capable of outperforming baseline methods and an extension of an existing propose.

The mentioned model mentioned in this paper will recommend users requirements based travel sequence using social sites. For this route suggestion system initially will mines Points of Interests and topical model from pictures and travelogue and then route extracted according travel historical records. This will first mine and then rank popular paths based on the similarity between user package module and route package module. For achieving more accuracy later the most rated famous paths will be optimized based on similar customer travel data for perfect users specific travel sequence suggestion [1].

III SYSTEM ARCHITECTURE

The proposed system is based on topical package module, user route module and recommendation module. This approach provides travel distribution of topics with its own factors i.e. mine travelogue which describes Points of Interests within the same topic, user expenditure, classification of season, and best hitting time. From the topical package system, it builds route package module which provides information about a paths including paths cost, time and season for generated paths. this is consist of customers interested topic, frequent time of visiting and best seasons. Route module constructs by mapping travelogue related to the Points of Interests to topical package module. this is consist of a route of interest, expense classification for route, the time and period classification for a route. Route suggestion module builds in two steps to suggest personalized route sequence to customer. initial Step consist of route ranking and then path is optimized by common people history for more accuracy. the process of assigning ranking to the paths is done based on the similarity between customer data sets and route data sets module. the travel route regeneration processed bunch of personalized ranked paths and optimized them based on users records from online social sites.

Modules:

1) Travel Routes
2) Exploration Keyword Extraction
3) Feature Scoring
4) Methods Route Recommendation

1. Travel Routes Exploration:

In this module, we aim to provide an interface for users to specify query ranges and preference-related keywords. Once the system receives a specified range and time, the online module will retrieve those travel routes that overlap the query range and the stay time period. Then, it will compute a matched score of how well the travel route is connected to the keywords. Consequently, the online module returns the k most representative routes considering the aforementioned feature scores to the users. We first explain the matching function to process the user query. Next, we introduce the background of why we apply a skyline query, which is suitable for the travel route recommendation applications, and present the algorithm of the distance-based representative skyline search for the online recommendation system. Furthermore, an approximate algorithm is required to speed up the real time skyline query.

2. Feature Scoring Methods:

In this module, keyword extraction module to identify the semantic meaning and match the measurement of routes, and have designed a route reconstruction algorithm to aggregate route segments into travel routes in accordance with query range and time period we present how we extract the semantic meaning of the keywords and propose a matched score to describe the degree of connection between keywords and trajectories. The keyword extraction module first computes the spatial, temporal and attribute scores for every keyword w in the

corpus. At query time, each query keyword will be matched to the pre-computed score of matching w.CCE: A component, Collective Check-in Extraction, of our proposed method,As candidates for the check-in extraction method m, we present the following two baseline extraction method. The performance of check-in extraction from Flickr photos. Beyond simple matching with an official POI name, harvesting more check-ins requires a trade-off between precision and recall. The performance of check-in extraction depends on whether this trade-off is well controlled. our three proposed extraction methods.

Route Recommendation:

Route recommendation has to take several factors into consideration to emphasize the unique travel factors of travel routes, the user POI, cost, seasonal preference, time preference of visiting locations such details are combined and the package is mined results is given to the Users and in addition, we refine the results and rank according to Personalized Recommendation system

Time-Sensitive Routes (TSR). Only consider the visiting time score of routes. The arrival time of the POIs in the recommendation best fits the extracted proper visiting time. Keyword-Aware Representative Travel Route. Our KRTR out-puts optimal representative Skyline routes. Location Recommendation and Prediction: The task of location recommendation is to recommend new locations that the user has never visited before while the task of location prediction is to predict the next locations that the user is likely to visit Also, most of the research has considered Where, When, Who issues to model user mobility. For the location recommendation part, pointed out that people tend to visit near-by locations but may be interested in more distant locations that they are in favor of. Finally, it combined user preference, geographical influence, and historical trajectories to recommend check-in locations. recommended a list of POIs for a user to visit at a given time by exploiting both geographical and temporal influences.

Similarity Route Search: Another relevant area is the similarity route search under specific attributes. Research on this subject has focused on finding routes according to location, activity or keyword-related queries. defined a similarity function for measuring how well a trajectory connects the query locations, considering both spatial distance and order constraint. studied the problem of similarity search on an activity trajectory database

1. Contain first route ranking and then route is optimized by similar user history for more accuracy.
2. For route ranking process, route is ranked according to the similarity between user package and route package module. In route optimization process set of ranked route optimized according to social similar users records.

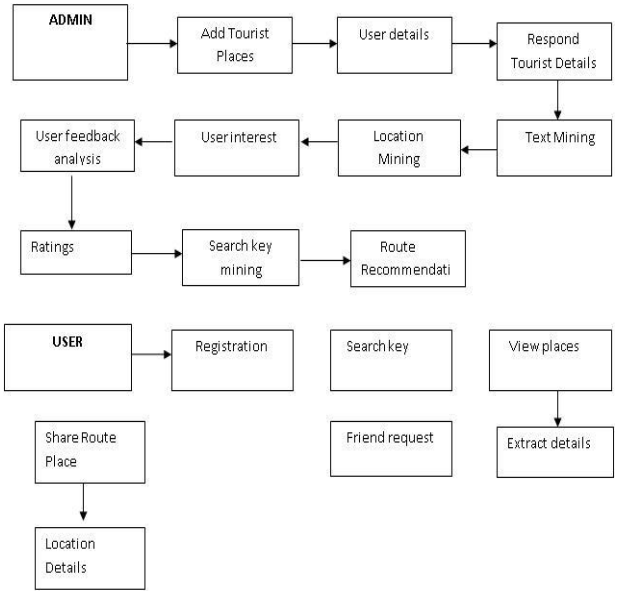

Figure 1 System architecture of proposed system

IV SYSTEM ANALYSIS

Algorithm 1: Keyword Aware Searching

Input: travels check.

Output: travel files containing the created clusters.

Algorithm

1) Fetch the all travel data in the list of travel route text
2) Fetch the full text travel data
3) Fetch the keywords from the travel information using naive bays algorithm.
4) Refer to the customer query and check the input keywords
5) Fit the data in appropriate relation so that the full text can be extract later using personalized keywords only
6) Go to step 1 and do repetition until all the data set in the list of travel data are processed.
7) Apply the fuzzy K-means algorithm to create clustering based on keywords.
8) reserved the customer query logs regarding travel database in the form of specific files (containing IDs).

Algorithm 2: Route Suggestion

User Input : User ui, query range Qi, a set of keywords Ki;

Output:Keyword aware travel routes with customer feedback

Algorithm

1. Initialize priority queue;
2. Perform scanning on the database to extract all candidate routes covered by region Qi. /* Fetch Points of Interests scores and check keyword matching*/
3. For-each travels fetched do
4. r. Ki match 0;
5. check book slot
6. if book full
7. search() other travels
8. else
9. book travels
10. return

V MATHEMATICAL MODEL

Mathematical model is a description of a system using mathematical concepts and language.

S = (I,P,R,O) Where, S is the system Input(I)=I1,I2

I1: Input query

I2: Online / Offline data set

Process (P)=P1,P2,P3,P4,P5,P6

P1: Topical package space

P2: Route package mining

P3: Filter package based on POI

P4: Route Ranking

P5: Show sequence

P6: Google map representation

R=Set of rules applied on the system during it's processing Output (O)=O1,O2

O1: Output of travel sequence recommendation

O2: Shortest personalized route on map

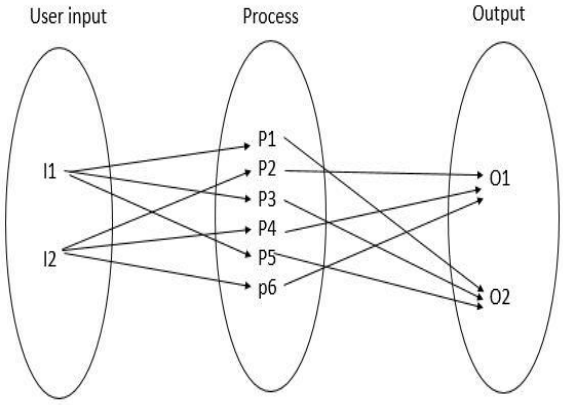

Figure. 2. Mathematical Model

VI SOFTWARE REQUIREMENT SPECIFICATION

I am using Eclipse Neon IDE and MySQL for the implementation and run on 2.30 GHz Intel Core I3 Processor machine with 2 GB RAM. The Microsoft Windows 7 and above Professional is used as an operating system. I have created system in based on the java, jsp. For database storage purpose I have used MYSQL server. I have designed a web application with local server. Designed web application that communicates with local server and Trustee Server using REST API. I have provided the secure access to all user for check unauthorized user access to the main server for performing unauthorized activity. Here we also check user log details for future analysis.

VII. ANALYSIS GRAPH

Performance Measure:

Response Time:

The system shall give responses in 5 second. User-interface: The user-interface screen shall respond within 5 seconds. So, given proposed system is give the better output and accurate result for in future prediction.

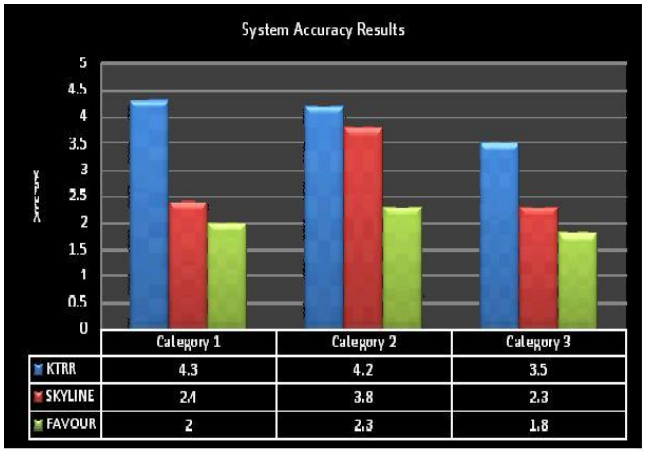

Figure 3. Route recommendation accuracy

VIII. CONCLUSION

This paper provide the explanation about futuristic approach of users requirements based personalized travel rout suggestion system in which suggestion is based on two types, travelogues provided by peoples and their contributed feedback on social sites. The suggestion system considers the peoples interest with some other factors like time, cost ,season of travel. by using social sites records of customers not only we can mine users Points of Interests of interest but also the travel sequence of the point of interest with considering other attribute of user i.e. consumption capability of the user.

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