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AN ITEM BASED COLLABORATIVE FILTERING ON RECOMMENDATION OF TRAVEL ROUTE

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Abstract - *During the trips a traveller can easily share their records and photos through the social media. The user historical records in social media is to identify the travel experiences for facilitates trip planning. When a user wants to plan a trip, they have some particular preferences regarding their trips. The temporary text descriptions such as keywords about personalized requirements of the user. In this work mainly needed different and representative set of recommended travel routes. Initial works based on mining and then ranking the existing routes from data. Therefore, in this paper, defined an efficient Keyword-Aware Representative Travel Route framework that uses extraction of keywords from historical records and social interactions of users. Then designed a keyword extraction module to classify the places of interest depending on tags, for matching with keywords effectively. Additionally, designed the candidate route generation algorithm to reconstruct candidates route that satisfy the requirements of the user. Then an item based collaborative filtering algorithm used for recommending the places that based on the likeness between places calculated using ratings of those places given by users.*

Key Words: **Data Mining, Location-based social network, travel route recommendation**

1.INTRODUCTION

The network services based on location is easier for the users upload the data online on the social networking websites. This data can be posted on different social networking sites can be in the form of reviews, photos, comments, etc. It also allows users to perform check-in and share their check-in data with their friends. When a user wants to traveling, the check-in data are in fact a travel route with some photos and tag information. As a result, a large number of routes are generated, it plays an essential role in many research areas, such as mobility prediction, urban planning and traffic management. In this paper focus on trip planning and attention to discover travel experiences from shared data in location-based social networks. To facilitate trip planning, the prior works in provide an interface in which a user could submit the query region and the total travel time.

This paper mainly defines the KSTR framework of recommending a diverse set of travel routes based on several score features mined from social media. KSTR then constructs travel routes from different route segments. The problem is to develop a collaborative recommendation model to recommend routes for a given user at a query region. The traveling factors can be summarized into "Where, When, Who" issues ranked the constructed routes by the location attractiveness, proper visiting time and the distance to query locations. 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 places of interest for a user to visit at a given time by exploiting both geographical and temporal influences.

In this paper analyze an item-based recommendation generation algorithms for computing item-item similarities and different techniques for obtaining recommendations from them.

1.1 Objectives

- To make the efficient route of the location depending the users' desire.
- To develop a collaborative filtering recommendation model to recommend places for a user at a query region.

2. METHODOLOGY

2.1 Keyword Extraction

Geo-Specific Keywords: The keywords that focus on location. To evaluate the geo-specificity of a tag, an exterior database analyzes geo-terms in the whole tag set and then the tag distribution on the map scales the analyzed geo-terms. Then, using the geographic circulation based on the tags, it helps to find place-level geo-terms are more universally distributed on the globe Thus, compute the variance of latitude and longitude of the places including the tag.

Temporal Keywords: The keywords that focus on time interval. To evaluate the time-specificity of a tag, an exterior database analyzes temporal-terms in the whole tag set and then the tag distribution on the map scales the analyzed temporal-terms.

2.2 Candidate Route Generation

The Candidate Route Generation algorithm to combine different routes to increase the amount and diversity. The new candidate routes are constructed by combining the sub sequences of trajectories. Here, introduce the preprocessing method first. Then utilize the pre-processing results to accelerate the proposed route reconstruction algorithm. Last, design a Depth-first search-based procedure to generate possible routes.

2.3 Travel Routes Exploration

In this module, with the featured trajectory dataset, the final goal is to recommend a set of travel routes that connect to all or partial user specific keywords. First explain the matching function to process the user query. Then introduce the background of applying 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.

2.4 Recommend Place Using Collaborative Filtering

In this module, recommend place the user who visited more. Here, It is calculated by Item-based, or item-to-item, collaborative filtering algorithm. It is used for recommender systems based on the similarity between places calculated using people's ratings of those places. First, the system executes a model-building stage by finding the similarity between all pairs of places. This equality function can take many forms, such as correlation between ratings. Second, the system executes a recommendation stage. It uses the most similar places to a user's already-rated places to generate a list of recommendations.

The main aim of collaborative filtering algorithm is to suggest new items or to predict the utility of a certain item for a particular user based on the user's previous likings and the opinions of other like-minded users. Opinions can be explicitly given by the user as a rating score, generally within a certain numerical scale, two items are thought of as two vectors in the m dimensional user-space. The similarity between them is measured by

computing the cosine of the angle between these two vectors.

Algorithm:

Step 1: Calculate the similarity between the active item and the rest of the items.

Step 2: Select a subset of the items (neighborhood) according to their similarity with the active items.

Step 3: Compute the prediction using the neighbor ratings.

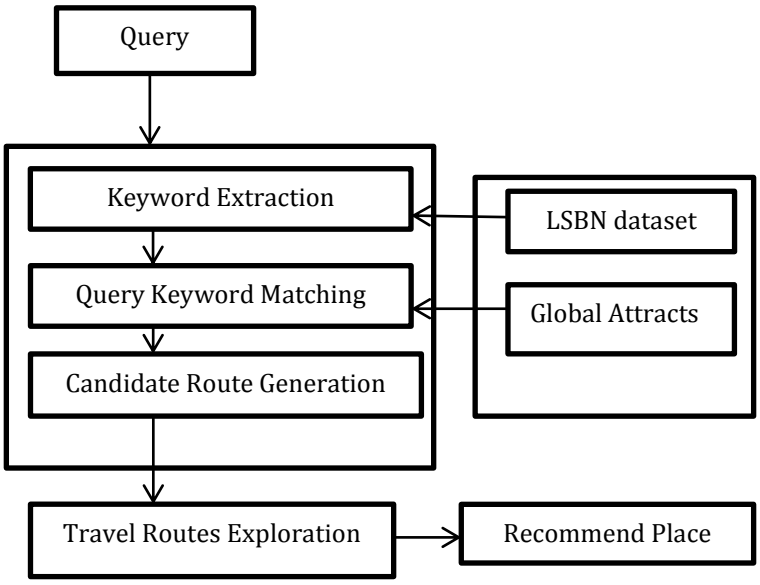

Fig-1: System Architecture

3. RESULTS AND DISCUSSION

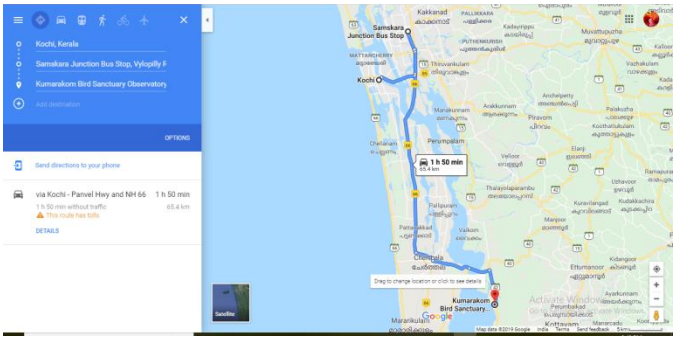

Fig-2: Direction of the route

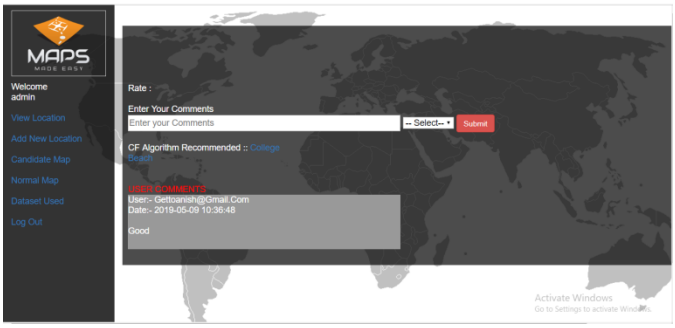

Fig-3: Algorithm recommend Place

Users are computed by finding places for recommendations that are similar to other places the user has preferred. The relationships between places are relatively static are one of the reason, item-based algorithms may be able to create the same quality as the user-based algorithms with less online calculation.

4. CONCLUSIONS

In this project, analyze the travel route recommendation problem. Developed a KRTR framework to suggest travel routes with a specific range and a set of user preference keywords. These travel routes are related to all or partial user preference keywords, and it is recommended based on (i) the attractiveness of the POIs it passes, (ii) visiting the POIs at their corresponding proper arrival times, and (iii) the routes generated by influential users. Then designed a route reconstruction algorithm to aggregate route segments into travel routes in accordance with query range and time period. The KRTR is able to retrieve travel routes that are interesting for users showed by the demonstration of experimental results. It performs the baseline algorithms in terms of effectiveness and efficiency. To reduce the computation cost by recording repeated queries and to learn the approximate parameters automatically in the future due to the real time requirements for online systems.

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