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Location-Based Route Recommendation System with Effective Query Keywords

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Abstract - *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. 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, 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, 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.*

Key Words: Planning a trip, check-in data, Keyword-aware, Data Mining

1. INTRODUCTION

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. For example, when planning a trip in Sydney, one would have "Opera House". As such, we extend the input of trip planning by exploring possible keywords issued by users. In this system, we develop a Keyword aware Representative Travel Route (KRTR) framework to retrieve several recommended routes where keyword means the personalized requirements that users have for the trip. The route dataset could be built from the collection of low-sampling check-in records. Location-based social network (LBSN) services allow users to perform check-in and share their check-in data with their friends. In particular, when a user is traveling, the check-in data are in fact a travel route with some photos and tag information. As a result, a massive number of routes are generated, which play an essential role in many well-established research areas, such as mobility prediction, urban planning and traffic management. In this paper, we focus on trip planning and intend 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. In contrast, we consider a scenario where users specify their preferences with keywords. For example, when planning a trip in Sydney, one would have "Opera House". As such, we extend the input of trip planning by exploring possible keywords issued by users.

2. LITERATURE SURVEY

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 spatio-temporal region demonstrate

that the proposal is effective and is capable of outperforming baseline methods and an extension of an existing proposal.

AUTHORS: D. Chen, C. S. Ong

The problem of recommending tours to travelers is an important and broadly studied area. Suggested solutions include various approaches of points-of-interest (POI) recommendation and route planning. We consider the task of recommending a sequence of POIs that simultaneously uses information about POIs and routes. Our approach unifies the treatment of various sources of information by representing them as features in machine learning algorithms, enabling us to learn from past behavior. Information about POIs are used to learn a POI ranking model that accounts for the start and end points of tours. Data about previous trajectories are used for learning transition patterns between POIs that enable us to recommend probable routes. In addition, a probabilistic model is proposed to combine the results of POI ranking and the POI to POI transitions. We propose a new F1 score on pairs of POIs that capture the order of visits. Empirical results show that our approach improves on recent methods, and demonstrate that combining points and routes enables better trajectory recommendations.

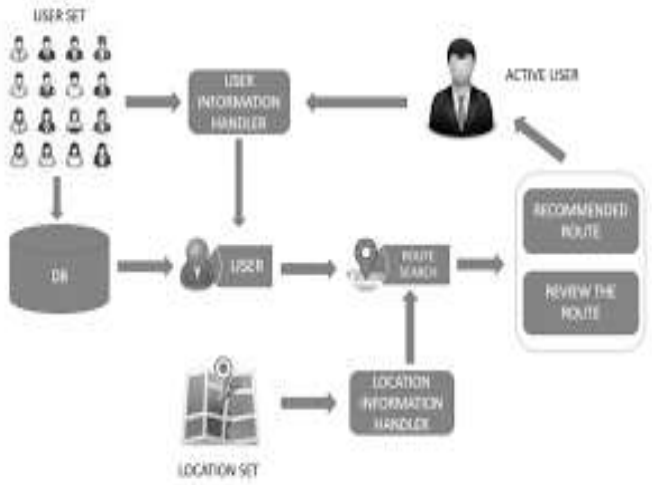

Fig: System Architecture

3. PROPOSED SYSTEM

Location based social network (LBSN) services allow users to perform check in and share their check in data with their friends. In particular, when a user is traveling, the check-in data are in fact a travel route with some photos and tag information. As a result, a massive number of routes are generated, which play an essential role in many well-established research areas, such as mobility prediction, urban planning and traffic management. However, the query results of existing travel route recommendation services usually rank the routes simply by the popularity or the number of uploads of routes. Proposed system 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, this work claim that more features of Places of Interest (POIs) should be extracted. Therefore, an efficient keyword aware representative travel route framework is proposed that uses knowledge extraction from users' historical mobility records and social interactions. Explicitly, keyword extraction module have designed to classify the POI-related tags, for effective matching with query keywords. A route construction algorithm is used to construct route candidates that fulfil the requirements. To provide befitting query results, association mining concept have used. To evaluate the effectiveness and efficiency of the algorithms, proposed system have conducted experiments on location-based social network datasets.

4. RELATED WORK

Keyword-aware Skyline Travel Route Framework The work proposed [1] includes Keyword-aware Skyline Travel Route (KSTR) framework is used use for the mining of data with help of previous records and the user's social relations. Keyword extraction module helps for the arrangement of the POI tags for relationship of the keyword. An algorithm is produced to figure out the path as per the input data given by the end user. LBSN helps the end user to check there actions and record their longitudinal and latitudinal activities. Also it gives the foundation for data analyst for investigations, to plan accurate and interested geographic recommending system. Due to this system there is a travel route search found. This helps to get a proper appearance time or check in time for the individual POI selected. It can be accomplished using the keyword extraction and pattern discovery pattern these routes are generated using the persuasive user. Data mining and estimation of mobile activities the work proposed [2] includes the current topic of data mining and estimation of mobile actions and the operations of relationship related to mining. Majorly the current concepts focus on the defining mobile patterns with complete information of the logs. However, if the current designs are not adequate enough for the assessment then it cannot consider the mobile behaviors and the temporary periods of the users. Cluster-based Temporal Mobile Sequential Pattern Mine (CTMSP-Mine), is used for defining the Cluster-based Temporal Mobile Sequential Patterns. (CTMSPs).

Skyline Representation algorithms the work proposed [3], states that there is an innovative idea that help to decrease the distance between the representative skyline and non-representative skyline point and its nearest representative. There are diverse algorithms for of distance-based skylines representation. The programming algorithms are dynamic in the 2- dimensional space, which confirm précised results. There are difficulties found such as NP-hard for D dimension

or more and gives two projected algorithm of polynomial time algorithm. A path pattern mining is set which helps in the travel route planning, POI route and skyline route search. This is done by potentially using the online route skyline module to give correct visit timing.

GPS Trajectories The work proposed [4] includes devices that compromises of GPS which is relatively increasing in the incredible amount which results in innovative method towards the users who are using the website. They are given a tramp in the GPS trajectories that include the history of the user location. Thus users thus can mine various GPS trajectories, locations prerequisite and typical travel arrangement in a required longitudinal and latitudinal region. The concerned location can be any places which are important like Kashmir in India and even public places like hotels, garden etc. 2.6. POI Recommendation The work proposed [6] includes place of interest (POI) recommendation. Its deliver a service which is people–centric and help them to find the prerequisite and concerned place and also help in the expansion of LBSN such as Web chat, etc. There is incredible amount of check in data which permits it to mine places as per the preference of the end user and then it also gives correct customized POI recommendation. In current applications, not just give the information regarding the check in but also there is information which is prerequisite for getting the essential POI recommendation, such as social relationships between users and topographical influence. The paper proposed, a new POI recommendation measures called Social and Geographical Fusing Model (SGFM) is executed.

5. CONCLUSION

In this project analyses the travel routes are related to all or partial user preference keywords and recommended based on (i)Attractiveness of the POI's it passes (ii)visiting the POI's at their corresponding proper arrival times, and (iii)the routes generated by influential users. In feature score for places and leverage association mining to find the best route relevant to user need. Thus, people would know about the best route to accomplish their needs during visits in a specific geographical area. The suggestion system considers the peoples interest with some other factors like time, cost, season of travel.

REFERENCES

[1] Y. Arase, X. Xie, T. Hara, and S. Nishio. Mining people's trips from large scale geo-tagged photos. In Proceedings of the 18th ACM international conference on Multimedia, pages 133–142. ACM, 2010.

[2] X. Cao, L. Chen, G. Cong, and X. Xiao. Keyword-aware optimal route search. Proceedings of the VLDB Endowment, 5(11):1136–1147, 2012.

[3] X. Cao, G. Cong, and C. S. Jensen. Mining significant semantic locations from GPS data. Proceedings of the VLDB Endowment, 3(1-2):1009–1020, 2010.

[4] D. Chen, C. S. Ong, and L. Xie. Learning points and routes to recommend trajectories. In Proceedings of the 25th ACM International on Conference on Information and Knowledge Management, pages 2227–2232, 2016.

[5] Z. Chen, H. T. Shen, X. Zhou, Y. Zheng, and X. Xie. Searching trajectories by locations: an efficiency study. In Proceedings of the2010 ACM SIGMOD International Conference on Management of data, pages 255–266, 2010.

[6] T. Cheng, H. W. Lauw, and S. Paparizos. Entity synonyms for structured web search. IEEE transactions on knowledge and dataengineering, 24(10):1862–1875, 2012.

[7] [7] M.-F. Chiang, Y.-H. Lin,W.-C. Peng, and P. S. Yu. Inferring distant time location in low-sampling-rate trajectories. In Proceedings of the19th ACM SIGKDD international conference on Knowledge discovery and data mining, pages 1454–1457. ACM, 2013.

[8] H. Gao, J. Tang, and H. Liu. Exploring social-historical ties on location-based social networks. In ICWSM, 2012.