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Research Paper

AN ENHANCED ROUTE GUIDE FRAMEWORK FOR SPATIAL DATA SEARCH

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In the existing system, GPS-equipped vehicles can be regarded as mobile sensors probing traffic flows on road surfaces and users are usually experienced in finding the fastest (quickest) route to a destination based on query from the historical GPS trajectories of a large number of vehicles, and provide a user with the practically fastest route to a given destination at a given departure time. This also provides the elapsed time to reach the destination. Service integration process helps to retrieve all service details from the server without inquiring query.In the proposed approach, this proposes a time-dependent service graph, where a node is a road segment frequently traversed by other users, to model the intelligence search of LBS and the properties of dynamic road networks. It is used to find the nearest neighbor services. We build the system based on a real world spatial simulation dataset and stored in MOD (moving object database).

Keywords: Time Dependent Service Graph, Spatial Data Mining, LBS, Elapsed Time

INTRODUCTION

Some existing works focus on retrieving individual objects by specifying a query consisting of a query location and a set of query keywords. These system define and categorize indoor distance between indoor uncertain objects and derive different distance bounds that can facilitate the join processing and better decision making which is also based on the shortest route. Indexing on road networks have been extensively studied in the existing. Various shortest path indices have been developed to support shortest path search only. After analyzing some existing system, all system only concentrated on the routes and traffic flow. But our proposed system gives better search like nearest services. The proposed system is used to find the nearest neighbor query and service. Based on the location and preference of the user the query answering can made. The proposed system develops a new rapid data access method called traffic based service selection. That is used to extend the road way in multidimensional method with the best algorithm. For example hotel details (food, price, room availability), theater (name of the films, ticket availability, etc.), etc.

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EXISTING SYSTEM

The existing works focus on retrieving individual objects by specifying a query consisting of a query location and a set of query keywords . Each retrieved object is associated with keywords relevant to the query keywords and is close to the query location. Various shortest path indices have been developed to support shortest path search efficiently. Some existing system studies how to process range queries and KNN queries over points-of-interest, with respect to shortest path distances on a road network. The evaluation of range queries and KNN queries can be further accelerated by specialized indices. Two other relevant studies concentrates on ranking queries that combine both the spatial and text relevance to the query object. Several techniques have been proposed for identifying candidate strings within a small edit distance from a query string.

PROPOSED SYSTEM

The proposed system performs the click point based location access system, , which eliminates the necessity of GPS in computer devices. The system gets the latitude and longitude of the location and find the nearest neighbor query and service. Based on the location and preference of the user the query answering is made. This work deals with the rapid nearest string search in large spatial databases. Especially this investigates the spatial associated queries improved with a string similarity and geographically nearest search predicate in both Euclidean space and road networks. The proposed system develops a new rapid data access method called traffic based service selection that extends the conventional inverted index to cope with multidimensional data, and comes with enhanced and best algorithms that can answer nearest neighbor queries with keywords in real time along with the summarized data.

LITERATURE SURVEY

Jinfeng Ni and C.V. Ravisankar [1] proposed a PA-Tree: A Parametric Indexing Scheme for Spatio-temporal Trajectories, 2005. It propose many new applications involving moving objects require the collection and querying of trajectory data, so efficient indexing methods are needed to support complex spatio-temporal queries on such data. Current work in this domain has used MBRs to approximate trajectories, which fail to capture some basic properties of trajectories, including smoothness and lack of internal area.

Juyoung Kang and Hwan – Seung Yong [2] proposed a Mining Spatio-Temporal Patterns in Trajectory Data December 2010. It proposes spatio-temporal patterns extracted from historical trajectories of moving objects reveal important knowledge about movement behavior for high quality BS services. Existing approaches transform trajectories into sequences of location symbols and derive frequent subsequences by applying conventional sequential pattern mining algorithms. However, spatio-temporal correlations may be lost due to the inappropriate approximations of spatial and temporal properties. They address the problem of mining spatio-temporal patterns from trajectory data. The temporal information will decrease the mining efficiency and the interpretability of the patterns.

Mohammad Kolahdouzan and Cyrus Shahabi [3] proposed a Voronoi-Based K Nearest Neighbor Search for Spatial Network Databases. It Proposes A frequent type of query in spatial networks (e.g., road networks) is to the K nearest neighbors (KNN) of a given query object. Object distances depend on their network connectivity and it is computationally expensive to compute the distances between objects. This approach is based on partitioning a large network to small Voronoi regions, and then pre-computing distances both within and across the regions. By localizing the pre computation within the regions save on both storage and computation and by performing across-the-network computation for only the border points of the neighboring regions, distance computation by up to one order of magnitude

Swarup, Vishanath and Sridhar [4] proposed a Selectivity Estimation in Spatial Databases. Selectivity estimation is a critical component of query processing in databases. Despite the increasing popularity of spatial databases, there has been very little work in providing accurate and efficient techniques for spatial selectivity estimation. Spatial data differs so significantly from relational data that relational techniques simply do not perform well in this domain.

Latest Road Traffic

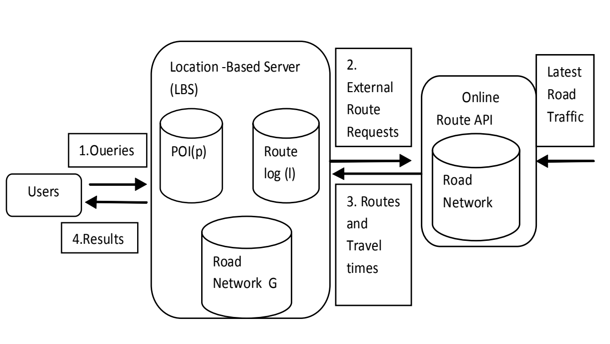
Sattam, Alexander and Chen Li [5] proposed a Supporting Location-Based Approximate-Keyword Queries. It proposes an index structure called LBAK tree to answer location-based approximate-keyword queries. We showed how to combine approximate indexes eciently with a tree-based spatial index. We developed a cost-based algorithm that selects tree nodes to store approximate indexes. Moreover, we improved the techniques to exploit the frequency distribution of keywords, further reducing the index size and query times. Finally, we conducted extensive experiments to show the eciency of our techniques.

In a fore mentioned works various issues are there such as poor pruning when such indices are using parametric space indexing for historical trajectory data, decrease the mining efficiency and the interpretability of the patterns, computationally expensive to compute the distances between objects, relational techniques simply do not perform well in this domain. According to above issues, the existing system is very difficult to give efficient results and have performance issues. We propose effective search with performing well in domain, get accurate results and decrease the requests from users by using the meaningful spatio - temporal region search, to propose new techniques for spatial selectivity estimation and conducting the extensive experiments.

SYSTEM MODEL

Following diagram is the system architecture of our proposed system. It is mainly explaining about various databases in it.

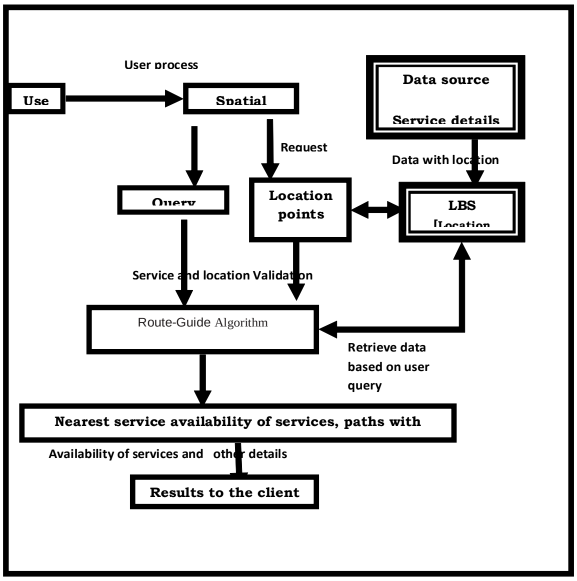
System Architecture



Our System Flow Diagram explains the process of the proposed system. User gives the requests based on the spatial. It search based on the two main terms such as query and location points. The Location point connected with location based service(LBS). LBS stores the data source service details and location validating by route-guide algorithm. It can retrieve data based on user query from LBS using Location Point Based

Tree with inverted index. Finally, it will gives the results to the client as the availability of services, paths with traffic, nearest services and other details.

System Flow Diagram



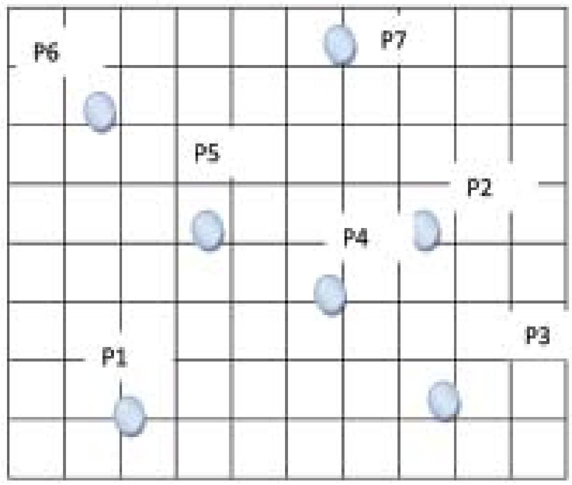
QUERY PROCESSING

Algorithm 1: Location Point based Tree (LPT with Inverted Index):

The location point tree saves the location points along with the service details. The service identifies the service by using the spatial POI which will be stored on the LPT_II. To speed up itinerary process in this indexes all the objects' subspace spatial scopes by an LPT tree where the subspace spatial scopes are stored in the leaf nodes as data entries. Additionally, to support service recommendation, this follows mapping module and KNN search.

In the diagram p1,p2 ,p3, p4,p5…p7 are the service points. In the proposed system every service point will be stored with an mapping key for fast service search. The proposed system stores the above service point in the tree style.

Fig POI



The following table represents the location point and available service details in the location. The service can able provide appropriate services for the user interest based on the location point based service list. This helps in two ways. One is the retrieval time has reduced. And the next is fast search in the LPT helps to avoid the unavailable services.

Algorithm 2: LPT_II maintenance tree Steps

POI	Services (S)
P1	S1,S3
P2	S4,S6
P3	S5,S4
P4	S4,S7
P5	S2,S8

1. Initial location source with respect point p1,p2..pn
2. For every point in the source P do
   a. Initialize service S1…Sn for respective points.
   b. Set service and code for every service

3. Get rank for each service and store into the ascending order.
4. Store the node in the top level based on the rank
5. Prune the other items from the LPT.

SPECIFICATION

Using the Location Point Based Tree (LPT) algorithm, the retrieval time has reduced. In this algorithm, structure can be maintained in the form of tree called as maintenance tree. This tree gives the fast search and avoids the unavailable of services. In this approach it is adapted to the user's convenience because comparing to the existing system, it return the solution and also it return another solution if nearest services is not available or if it have any issues.

CONCLUSION

In our Project, we have introduced a convenience system when users search based on the spatial using spatial data search. Using this system, users never got any useless information and have not any trouble. Our future implementation is to check the road conditions based on location when users in travelling.

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