Research Article Impact Factor: 4.226 ISSN: 2319-507X
P Shakila, IJPRET, 2014; Volume 3 (4): 229-234 IJPRET

INTERNATIONAL JOURNAL OF PURE AND APPLIED RESEARCH IN ENGINEERING AND TECHNOLOGY

A PATH FOR HORIZING YOUR INNOVATIVE WORK

SAFE REGION EVALUATION FOR CONTINUOUS MONITORING SYSTEM

P. SHAKILA

Assistant Professor, Dept of ECE, Apollo Engineering College, Chennai, Tamilnadu, India.

Accepted Date: 22/11/2014; Published Date: 01/12/2014

Abstract: Efficiency and privacy are two fundamental issues in moving object monitoring. We propose a privacy-aware monitoring (PAM) framework that addresses both issues. The framework distinguishes itself from the existing work by being the first to holistically address the issues of location updating in terms of monitoring accuracy, efficiency, and privacy, particularly, when and how mobile clients should send location updates to the server. Based on the notions of safe region and most probable result, PAM performs location updates only when they would likely alter the query results. Furthermore, by designing various client update strategies, the framework is flexible and able to optimize accuracy, privacy, or efficiency. We develop efficient query evaluation/reevaluation and safe region computation algorithms in the framework. The experimental results show that PAM substantially outperforms traditional schemes in terms of monitoring accuracy, CPU cost, and scalability while achieving close-to-optimal communication cost.

Keywords: Customer, database monitoring, deregister, object Indexes, Mobile Client, Evaluation, Spatial Query.

Corresponding Author: MS. P. SHAKILA

Access Online On:

www.ijpret.com

How to Cite This Article:

P Shakila, IJPRET, 2014; Volume 3 (4): 229-234

PAPER-QR CODE

INTRODUCTION

The United States National Aeronautic and Space Administration (NASA) Earth Science Technology Office (ESTO) manages the development of advanced technologies and applications that are needed for cost-effective missions. ESTO plays a major role in shaping Earth science research and application programs of the future, aggressively pursuing promising scientific and engineering concepts, and ensuring that the program maintains an effective balance of investments in order to advance technology development. ESTO sponsored NASA's Glenn Research Center (GRC) to research and deploy advanced mobile networking technology applicable to mobile sensor platforms.

As a result, GRC personnel developed a two-tier sensor design. The first tier utilized mobile ad hoc network (MANET) technology to provide mobility. The second tier which sits above the first tier, utilized 6LowPAN (Internet Protocol version 6 Low Power Wireless Personal Area Networks) sensors. The entire network was IPv6 enabled.

Due to availability of inexpensive position locators, cheap network bandwidth and mobile devices with computation and storage capabilities, location based services are gaining increasing popularity. Consequently, continuous monitoring of spatial queries has received significant research attention.

Here, we study the continuous monitoring of moving range queries over static data objects, i.e., a scenario where the queries are constantly moving whereas the data objects do not change their locations. Such scenario has many interesting applications. Consider the example of a family travelling by car. Suppose they need to reach their final destination by a certain time and only have up to 90 min available for lunch. They may want to continuously monitor restaurants within 10 km of their current location so that they can choose a restaurant that serves their favorite meals, and will not take more than 15 min to reach. As another example, a bomber plane might want to continuously monitor the enemy targets (e.g., airport, arms depot) that are within its attack range.

II.EXISTING SYSTEM

• The accuracy is low since the query results are correct only at the time instances of periodic updates, but not in between them or at any time of deviation updates.

• The updates are performed regardless of the existence of Queries a high update frequency may improve the monitoring accuracy, but is at the cost of unnecessary updates and query reevaluation.

• The privacy issue is simply ignored by assuming that the clients are always willing to provide their exact positions to the server.

III.PROPOSED SYSTEM

- In our approach to maintain safe region we have object index, Query index, the query processor and location manager.
- As for efficiency, the framework significantly reduces location updates to only when an object is moving out of the safe region, and thus, is very likely to alter the query results.
- The safe region is computed based on the queries in such a way that the current results of all queries remain valid as long as all objects reside inside their respective safe regions.

IV. MODELS TO MONITOR SPATIAL QUERIES

A. *Client-server model*

In this model, the clients issue queries and the central server is responsible for the computation of these queries. Local computation model. In the first application mentioned above, the car may have a GPS navigation system with points of interest (e.g., restaurants) stored in its memory card. Since the navigation systems have limited main-memory and computational capacity, it may be challenging to compute the results of the range query whenever the query changes its location (the car is continuously moving).

B. *Local computation model*

In the first application mentioned above, the car may have a GPS navigation system with points of interest (e.g., restaurants) stored in its memory card. Since the navigation systems have limited main-memory and computational capacity, it may be challenging to compute the results of the range query whenever the query changes its location (the car is continuously moving).

V.ARCHITECTURE

A. Safe Region Evaluation:

In this safe region is assumed as a rectangle change of object inside the rectangle would not affect spatial query in the database. The safe region is computed based on the queries in such a way that the current results of all queries remain valid as long as all objects reside inside their respective safe regions. Client updates its location on the server only when the client moves out of its safe region based on the location of client. The safe region ring is based on the rectangle of the centric.

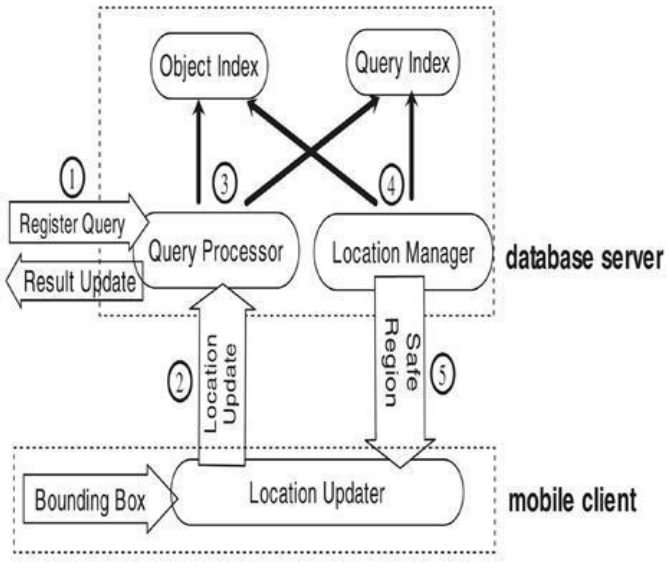

Fig.1 Architecture Diagram

B. Object Index and Query Index:

Object index is the server side information about spatial query range and used to evaluate safe region. Query Index as the following parameter query point, current query result and the quarantine area. The quarantine area is used to identify the queries whose results might be affected by an incoming location update.

The number of objects is some orders of magnitude larger than that of queries. As such, the query index can accommodate all registered queries in main memory, while the object index can only accommodate all moving objects in secondary memory.

C. Query Processing:

In the PAM framework, based on the object index, the query processor evaluates the most probable result when a new query is registered, or reevaluates the most probable result when a query is affected by location updates. Obviously, the reevaluation is more efficient as it can be based on previous results.

D. Location Updater:

The each time a client detects the genuine point location, it is wrapped into a bounding box. Then, the client-side location updater decides whether or not to update that box to the server

without any other knowledge about the client locations or moving patterns, upon receiving such a box, the server can only presume that the genuine point location is distributed uniformly in this box.

Challenges for future work include the extension of TSA algorithm in order to recognize for each track segment the activities of the user in such a way as to enable the automatic validation and auditing of the user's annotation, an energy saving policy since our application is used in devices with limited energy resources, a possibility to detect user's position in non GPS-available areas (e.g. in indoors environments or in subsurface regions) without losing in accuracy and a hybrid local – in the cloud storage schema that would make it ready for social networking applications and can make use for Location based alarm where to user wants to reach out.

Large number of short-range measurements, carried out using currently available smartphones, can be combined together to generate a fine-grained map of the network. Besides their potentially huge number, the use of smartphones as network monitors provides other opportunities: i) performance is observed at the periphery of the network, where the majority of end-users is located, ii) mobility of terminals allows the monitoring system to collect dynamical and geo-referenced information.

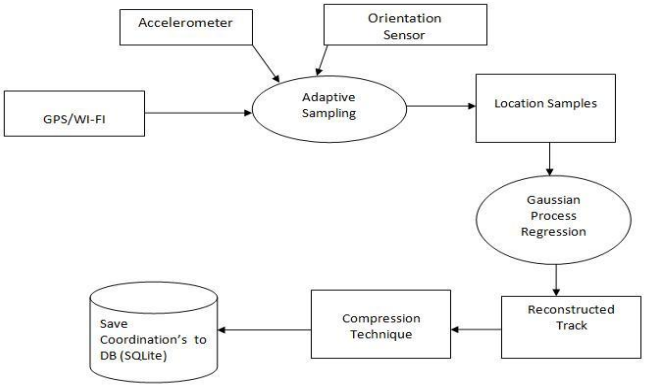

Fig. 2 Data Flow Diagram / Work flow Diagram

VI. CONCLUSION

We propose a framework for monitoring continuous spatial queries over moving objects. The framework is the first to holistically address the issue of location updating with regard to monitoring accuracy, efficiency, and privacy. We provide detailed algorithms for query evaluation/ revaluation and safe region computation in this frame work. We also devise i -client

update strategies that optimize accuracy, privacy, and efficiency respectively. The performance of our framework is evaluated through a series of experiments. The results show that it substantially outperforms periodic monitoring in terms of accuracy and CPU cost while achieving a close-to-optimal communication cost.

REFERENCE:

1. Y. Cai, K. A. Hua, and G. Cao, ―Processing range-monitoring queries on heterogeneous mobile objects,‖ in *Mobile Data Management*, 2004.

2. H. Hu, J. Xu, and D. L. Lee, ―A generic framework for monitoring continuous spatial queries over moving objects,‖ in *SIGMOD Conference*, 2005, pp. 479–490.

3. K. Mouratidis, M. Hadjieleftheriou, and D. Papadias, ―Conceptual partitioning: An efficient method for continuous nearest neighbor monitoring,‖ in *SIGMOD*, 2005.

4. R. Benetis, C. S. Jensen, G. Karciauskas, and S. Saltenis, ―Nearest neighbor and reverse nearest neighbor queries for moving objects,‖ in *IDEAS*, 2002, pp. 44–53.

5. M. A. Cheema, X. Lin, Y. Zhang, W. Wang, and W. Zhang, Lazy updates: An efficient technique to continuously monitoring reverse knn,‖ *PVLDB*, vol. 2, no. 1, pp. 1138–1149, 2009.