iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 5 **Issue:** VI **Month of publication:** June 2017

DOI:

www.ijraset.com

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Volume 5 Issue VI, June 2017
ISSN: 2321-9653
International Journal for Research in Applied Science & Engineering Technology (IJRASET)

A Query Search on Road Network by Integrating Social Network

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Abstract: ***Query search on road network by integration of social influence can be quite a challenging task wherein the result returned has to be an efficient one. To this we will be using the concept of knn search which returns with the k nearest neighbour to the query search and to obtain much more feasible result we would integrating it with social influence. To speed up the computation of query search we would be proposing three different index algorithms which are Road network based algorithm which is employed for tackling the hard problem of computing social influence, social network based algorithm which is used to embed social cuts and hybrid indexing algorithm which summarizes the query result of both road and social networks. In projected system recommendation is given supported the reviews of trustworthy users. Our contribution is provide and implement Review based Result.To ease the work of the end user we would be introducing the usage of location based services.***

I. INTRODUCTION

A. location-based service (LBS)

is a software-level service that uses location data to control features. As such LBS is an information service and has a number of uses in social networking today as information in entertainment or security, which is accessible with mobile devices through the mobile network and which uses information on the geographical position of the mobile device. This concept of location based systems is not compliant with the standardized concept of real time locating systems (RTLS) and related local services. Location-based services (LBS) are a part of virtually all control and policy systems which work in computers today They have evolved from simple synchronization based service models to authenticated and complex tools for implementing virtually any location based service model or facility.While bridging the gap between physical and virtual world they have presented new way for exploring kNN search on road networks.

Example 1:Figure 1 illustrates and example of kNN search where k is a positive integer ,if k=1 then k is assigned to the class of single nearest neighbour.suppose k=3,a classes are A and B and we find the class for A.Given a query point and a time interval it returns top-k locations that have the smallest weighted sum of spatial distance to query point and a temporal aggregate on a Certain attribute over time interval.

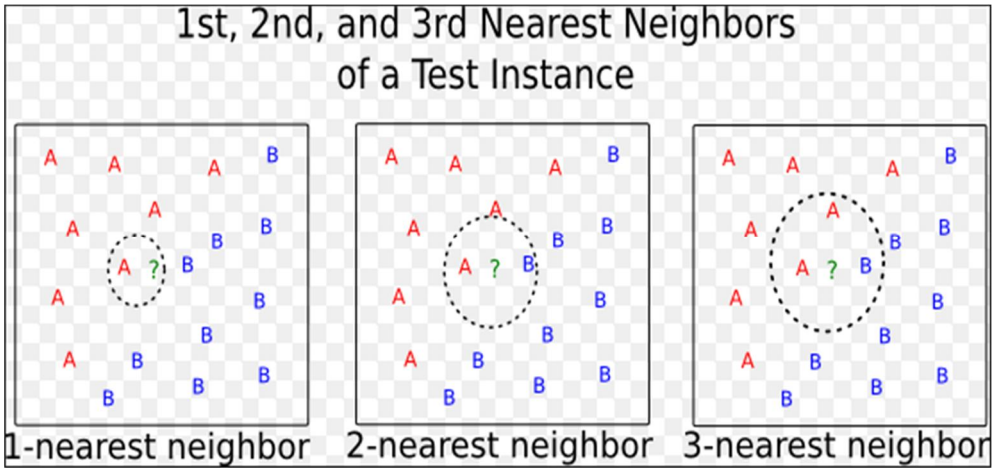

Fig 1:Example of K nearest neighbour

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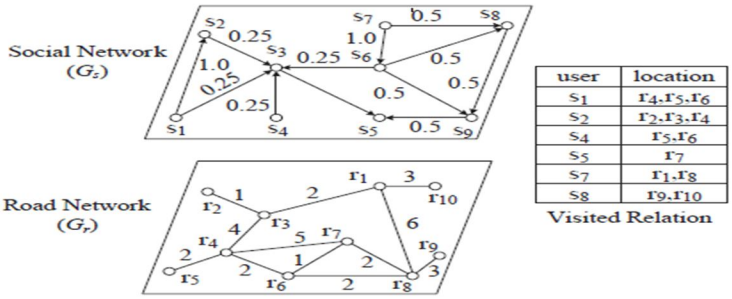

Fig 2: Example of road-social network. The visited relation gives a Mapping that users have visited the location

Figure 2 illustrates an example of Knn search over road-social network where road-social networks into a social layer (Gs) and road layer and a road layer (*Gr*) for clear presentation. The integer on an edge (*u*, *v*) of *Gr* represents the shortest-path distance between vertices *u* and *v* on the road network *Gr*. The visited relation gives a mapping that a user *vs* ∈ *Gs* has been to a location *vr* ∈ *Gr*. Suppose that a user named Alex (*s*3 in *Gs*) wants to find a mall closest to his current location, i.e., *r*3 in *Gr*. In this example, assume that *r*1 and *r*4 are both malls. In *Gr*, the mall *r*1 is the nearest one, and the mall *r*4 is a little farther than *r*1 to *r*3. A traditional kNN search will return *r*1 to Alex. However, as observed in the social layer, two one-hop friends alex(*s*3), *s*1 and *s*2, have visited *r*4, while only one two-hop friend of John, *s*7 has visited *r*1. Obviously, Alex will be influenced by many friends to choose *r*4 instead of *r*1, since *r*4 may turn out to be a better place for shopping variety of things to Alex and is not far from *r*3.

II. PROBLEM STATEMENT

Today's social and road networks are very large. For example, Twitter has 1 billion users and the road network of India has more than 30 million vertices. Which could lead to a complications in efficient query search Therefore, it is quite challengeable to answer the RS*k*NN query efficiently over large road-social networks. To address this challenge we have introduced the usage of three different indexing algorithms.

III. ALGORITHMS USED

A. Algorithm 1 RN_BASED ALGORITHM

1) Require: The road network index *IRN*, social network *Gs* and query *q*;
2) Ensure: Query answer set *Aq*
3) *Aq* = *φ*;
4) for each returned object *or* ∈ *Cr* by the shortest-pathalgorithm from *qr* (in an increasing order of distance) by traversing *IRN* do
5) if *UpperBound*(*SI*(*or*)) < _ the
6) Prune object *or*;
7) else if *LowerBound*(*SI*(*or*)) > _ then
8) *Aq* ← *Aq* ∪ *or*;
9) Else
10) *SI*(*or*)=Sample(*Gr*, *Gs*, *q*);
11) end if
12) if *SI*(*or*) ≥ _ then
13) *Aq* ← *Aq* ∪ *or*;
14) end if
15) if |*Aq*| == *k* then
16) return *Aq*;
17) end if
18) end for

B. Algorithm 2:Sn_Based Algorithm

A road network *Gr*, social network *Gs* and query *q*;

Ensure The set of candidate objects *Cq*
1) *Cq* = *φ*;
2) for (each *or* in *Cr*) do
3) Based on *T* find cutmarks *{cj}* ⊂ *φ*(*or*), such that *cj* is an *or*, *qs*-cut in *Gr s*.
4) if (cutmarks *{cj}* exist) then
5) Compute an upper bound for each *cj* as the method in Theorem 4, and then obtain the tightest upper bound *UpperB*(*SI*(*or*)).
6) if (*UpperB*(*SI*(*or*)) < _) then
7) *Cr* = *Cr**or*;
8) end if
9) end if
10) end for
11) return *Cq* = *Cr*;

C. Algoritm 3:Hybrid Indexing
1) *Require:* Graph *Gr s* constructed from *Gr* and *Gs*; The size of cutmark set *k*
2) *Ensure:* The optimal cutmark set *D*
3) if (|*D*| < *k*) then
4) Run the all vertex-pair shortest path algorithm;
5) Choose two vertices *s, d* ∈ *Gr s* with the largest shortestpath distance;
6) Determine the minimum vertex cut *c* of (*s, d*) and remained subgraphs *g*1, ..., *gf* after removing *c* from *Gr s*;
7) *D* = *D* ∪ *c*;
8) for (*i* from 1 to *f*) do
9) MinCutCover(*gi*, *k*)
10) end for
11) end if
12) return *D*;

IV. PROPOSED SYSTEM

One of the challenges was to hurry up the computation of the social influence over massive road and social networks. To deal with this challenge, three economical index-based search algorithms was planned, i.e. road network-based (RN based), social network-based (SN-based) and hybrid categorisation algorithms. Within the RN-based algorithmic rule, employs a filtering-and-verification framework for coping with the onerous downside of computing social influence. SN-based algorithmic rule, enter social cuts into the index, thus to hurry up the question. Within the hybrid algorithmic rule, index was planned, summarizing the road and social networks, supported that question answers will be obtained expeditiously. In planned system recommendation is given supported the reviews of authorized users wherein to ease the work of the authorized users in finding the query locations Gmaps are also incorporated.

V. SYSTEM DESIGN

A. Input Design

Input Design plays a vital role in the life cycle of software development, it requires very careful attention of developers. The input design is to feed data to the application as accurate as possible. So inputs are supposed to be designed effectively so that the errors occurring while feeding are minimized. According to Software Engineering Concepts, the input forms or screens are designed to provide to have a validation control over the input limit, range and other related validations.

This system has input screens in almost all the modules. Error messages are developed to alert the user whenever he commits some mistakes and guides him in the right way so that invalid entries are not made. Let us see deeply about this under module design.

Input design is the process of converting the user created input into a computer-based format. The goal of the input design is to make the data entry logical and free from errors. The error is in the input are controlled by the input design. The application has been developed in user-friendly manner. The forms have been designed in such a way during the processing the cursor is placed in the position where must be entered. The user is also provided with in an option to select an appropriate input from various alternatives related to the field in certain cases.

Validations are required for each data entered. Whenever a user enters an erroneous data, error message is displayed and the user

can move on to the subsequent pages after completing all the entries in the current page.

B. Output Design

The Output from the computer is required to mainly create an efficient method of communication within the company primarily among the project leader and his team members, in other words, the administrator and the clients. The output of VPN is the system which allows the project leader to manage his clients in terms of creating new clients and assigning new projects to them, maintaining a record of the project validity and providing folder level access to each client on the user side depending on the projects allotted to him. After completion of a project, a new project may be assigned to the client. User authentication procedures are maintained at the initial stages itself. A new user may be created by the administrator himself or a user can himself register as a new user but the task of assigning projects and validating a new user rests with the administrator only.

The application starts running when it is executed for the first time. The server has to be started and then the internet explorer in used as the browser. The project will run on the local area network so the server machine will serve as the administrator while the other connected systems can act as the clients. The developed system is highly user friendly and can be easily understood by anyone using it even for the first time.

VI. ADVANTAGES

Within the RN-based compartmentalization rule, we have a tendency to utilize a balanced tree index IRN, supported that a best-first search will be conducted to get nearest objects to letter of the alphabet.

In question process, through social cuts, we will acquire tight higher bounds for the fascinating social influences, so we will separate out sizable amount of objects expeditiously.

The search on query of concern is simplified wherein the query result could be obtained by the usage of keywords like malls, restaurants, banks etc

VII. CONCLUSION

We have presented a decentralized access control technique with anonymous authentication. The server does not know the identity of the end user who utilizes information and query provider who stores information, but only registration credentials to verify end users and query providers are introduced. Key distribution is done in a decentralized way. One limitation is that the server knows the access policy for each record stored in the cloud. And also authorized query provider can give review on search query that will be beneficial for new authorized end user.

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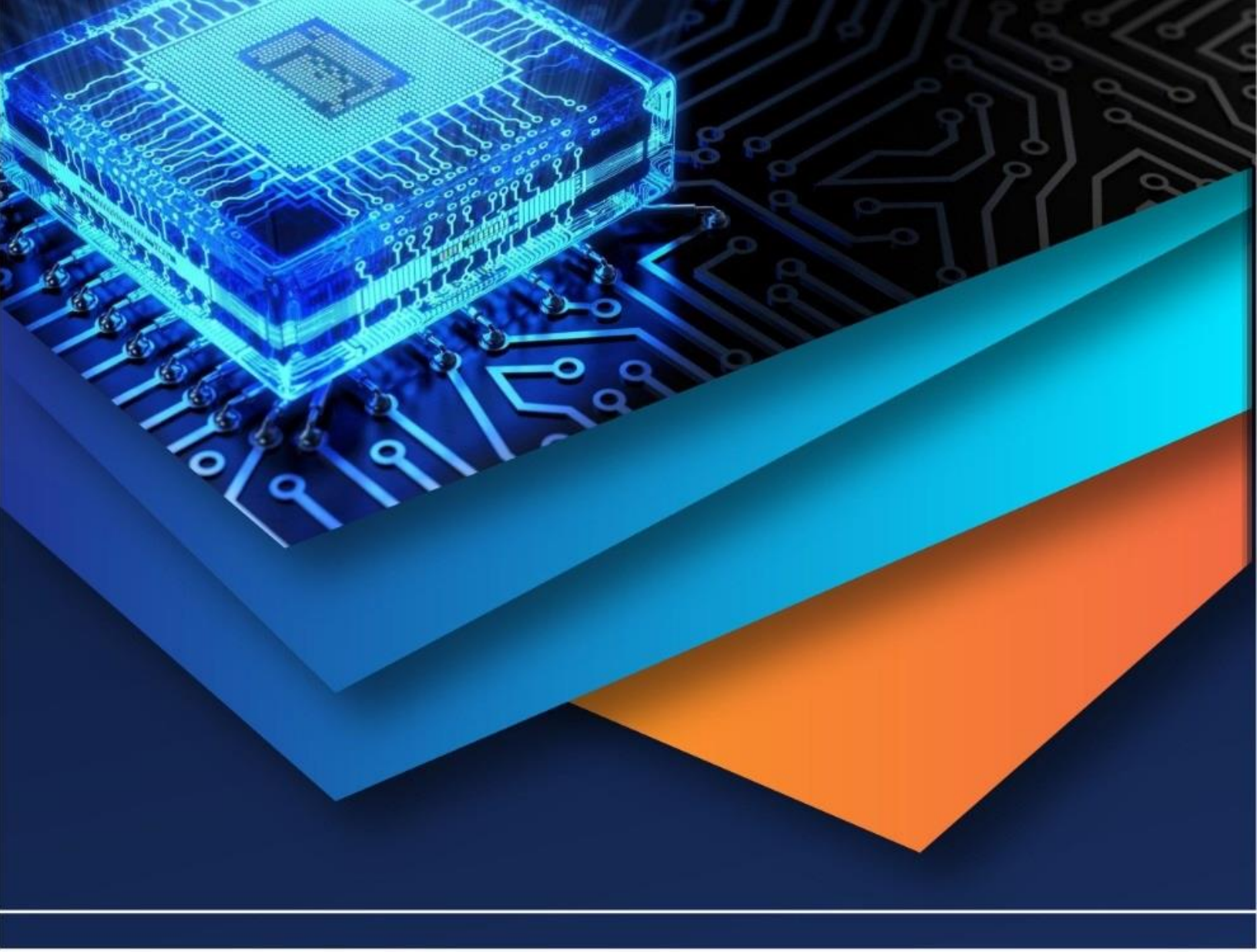

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