iJRASET
International Journal For Research in
Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 4 Issue: III Month of publication: March 2016

DOI:

www.ijraset.com
IC Value: 13.98
Volume 4 Issue III, March 2016
ISSN: 2321-9653
International Journal for Research in Applied Science & Engineering Technology (IJRASET)

Enabling Scalable VGS with Weighted Imprecise Voronoi Cell

D.Densifer[1], S.Keerthana2, D.Mahalakshmi.[3]
G.K.M College of Engineering and Technology
(Affiliated to Anna University) Perungalathur, Chennai-600063.

Abstract:- In this paper, we provide techniques that enable a scalable so-called Volunteered Geographic Services system. This system targets the increasing populations of online mobile users, e.g., smart phone users, enabling such users to provide location-based services to each other, thus enabling citizen reporter or citizen as a sensor scenarios. More specifically, the system allows users to register as service volunteers, by accepting service descriptions and periodically updated locations from such volunteers; and the system allows users to subscribe to notifications of available, nearby relevant services by accepting subscriptions with timing, formalized as continuous queries, that take service preferences and user locations as arguments and return relevant services. Services are ranked according to their relevance and distance to a query, and the highest ranked services are returned. The key challenge addressed is that of accessible providing up-to-date results to queries when the query locations change continuously. And the elapsed time will be increased for no response. Then query users need only notify the system when they exit their current location. And if the query or response are blocked if any fake/dummy users. The new model is enabled by weighted and Voronoi cells. The paper covers underlying concepts, properties, and algorithms, and it covers applications in VGS tracking and presents findings of empirical performance studies.
Keywords: Volunteered Geographic Service, Weighted Imprecise Voronoi Cells, Up-to-date results, Micro service provider.

I. INTRODUCTION

Data Mining is interdisciplinary subfield of computer science. It is the computational process of discovering patterns in large data sets ("big data") involving methods at the intersection of artificial intelligence, machine learning, statistics, and database systems.

It is exactly, a contribution is a continuous query that takes (i) keywords is used to defines the user's interests and (ii) the user's continuously changing location as a opinion. In response to a query, the system continuously ranks all available services according to their relevance to the query keywords and the query location, and it returns the highest ranked services to the query user. The weighted imprecise Voronoi cell of an object contains all locations that have non-zero probability of having the object as their weighted nearest neighbour(PNN)

First, we define half spaces, given by higher-order polynomials, and define the resulting Voronoi cells; and we propose brief approximations with simple geometries, thus avoiding expensive manifestation. Second, we provide two ways of rendering Voronoi cells, namely using an object representation and a shape representation thus improving adaptability. Third, we show how to support different weighted distance functions and randomly shaped imprecise regions, further improving the versatility.

II. RELATED WORK

In this section we envision about Volunteered Geographic Service(VGS) and Voronoi Cells.

A. VGS Tracking

We visualize a so-called Volunteered Geographic Service (VGS) system that enables this scenario. Service volunteers can provide service descriptions and periodically updated locations to the system. Potential service users can provide contributions for relevant, nearby services, thus receiving in return notifications when there are changes to the services available. Figure 1 describes the setting. Here, users serve in two roles: as service users and as service providers.

More precisely, we call the service users query users, or simply users, when this does not cause ambiguity because they issue subscriptions to the system that take the form of continuous queries; and we call the service providers volunteers because they volunteer their services to other users. The volunteers register descriptions of their services and provide their maximum speeds to the system. In addition, they periodically send their location to the system. In the figure, two users have volunteered services that are described by keywords. Query users issue subscriptions with the objective of being notified of available services that match their

Volume 4 Issue III, March 2016
ISSN: 2321-9653
International Journal for Research in Applied Science & Engineering Technology (IJRASET)

sub-scriptions.

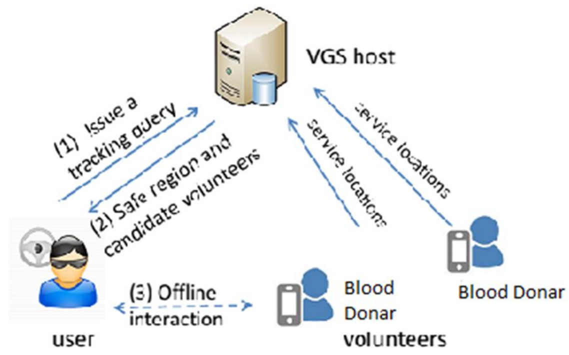
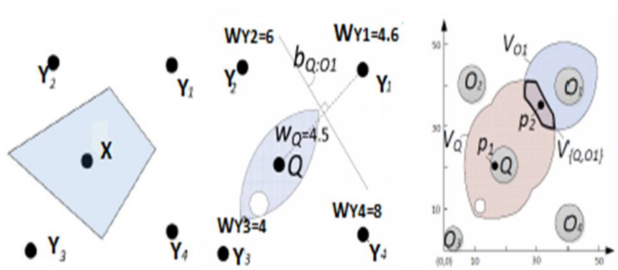


Figure:1

B. Voronio Cells

It is possible to use plain Voronoi Cells. Given a set of point locations, the Voronoi cell for a point is the part of space that contains all other points in the underlying space that have the point as their nearest neighbor. Figure 2(a) shows the Voronoi cell of Y. The cell is allocated by perpendicular bisectors between Y and the four other objects.



(a) Plain Voronoi Cell (b) Weighted Voronoi Cell (c) Weighted Imprecise Voronoi Cell

Instead, we proposition so-called Weighted Imprecise Voronoi cells that can be used as location identification in our setting. The weighted imprecise Voronoi cell of an object contains divisions that have non-zero probability of having the object as their weighted nearest neighbor (PNN). A PNN query returns all objects that possibly have the smallest weighted distance to a query point p.

C. Non-determinacy: an object is in the result if it is possibly, but possibly not definitely, p 's nearest neighbor.

D. Non-uniqueness: a query result may contain multiple objects. It is non-trivial to support such Voronoi cells. First, we shall see that such cells are allocated by complex curves. Second, cells can have holes and may even consist of divided regions. To the best of our knowledge, this paper presents the first study of weighted imprecise Voronoi cells.

E. Contributions: We study location for service sub-scriptions in VGS settings, offering a complete exposure of the concepts, properties, and algorithms needed for the use of weighted imprecise Voronoi cells. First, we define half spaces, given by higher-order polynomials, and define the resultant Voronoi cells; and we propose brief approximations with simple geometries, thus avoiding expensive manifestation. Second, we provide two ways of rendering Voronoi cells, namely using an object representation and a shape representation , thus improving adaptability. Third, we show how to support different weighted distance functions and randomly shaped imprecise regions, further improving the versatility. Fourth, we report on empirical performance studies of our proposals with different index structures (e.g., aggregate R-tree, IR-tree) using synthetic and real data.

Table 1
Weighted Imprecise Distances in Figure 2 (c)

Objects	Center	Radius	Weight
Y	(20,21)	4.6	4.6
Y_1	(40,40)	4.6	4.6
Y_2	(9,40)	4.6	6
Y_3	(3,3)	4	4
Y_4	(40,7)	4.6	8

Points	Locations
p_1	(23,23)
p_2	(31,35)

	Imprecise Distance		Weighted Imprecise Distance	
Obj	$\|p_1, Y\|_E$	$\|p_2, Y\|_E$	$\|p_1, Y\|$	$\|p_2, Y\|$
Y	[0, 8.1]	[13.3, 22.3]	[0, 1.8]	[3.0, 5.0]
Y_1	[19.6, 28.6]	[5.8, 14.8]	[4.3, 6.3]	[1.3,3.3]
Y_2	[17.5, 26.5]	[18.0, 27.0]	[3.5, 5.3]	[3.6, 5.4]
Y_3	[25.3, 31.3]	[39.5, 45.5]	[8.4, 10.4]	[13.2, 15.2]
Y_4	[18.9, 27.9]	[24.9, 33.9]	[2.7, 4.0]	[3.6, 4.8]

III. BENCHMARKS

In this section, we describe the benchmarks (datasets) that we consider in this work. The major structures of each one and in the following we describe their details.

A. Weighted Imprecise Distance

Let $|p,Y|_E$ be the Euclidean distance between point p and object Y. If object Y is precise, i.e., a point, distance $|p,Y|_E$ is a deterministic value. Existing work on weighted distances assumes that O is precise. Weighted Distance.

The weighted distance, between point p and object Y is denoted by |p,Y| and is defined in terms of the Euclidean distance $|p,Y|_E$ and the weight w_Y.

$$|p, Y| = \frac{|p, Y|_E}{w_Y} \qquad (w_Y > 0)$$

B. Imprecise Euclidean Distance

For an imprecise object Y,the Euclidean distance |p,O|E is a random variable, the values of which are bounded by the interval $[|p,O|^{l}E, |p,O|_{UEs}]$.

$$|p, Y|_E^l = \begin{cases} |p, c_Y|_E - r_Y & \text{if } p \notin \odot(c_Y, r_Y) \\ 0 & \text{otherwise} \end{cases}$$

$$|p, Y|_E^u = |p, c_Y|_E + r_Y$$

C. Weighted Imprecise Distance

We obtain the Weighted imprecise distance |p,O| by substituting the Euclidean distance by the imprecise Euclidean distance . This yields the following bounds.

$$|p,\Upsilon|^l = \begin{cases} \frac{|p,c_\Upsilon|_E - r_\Upsilon}{w} & \text{if } p \notin \odot(c\ \ ,r\ \ ) \\ 0 & \end{cases}$$

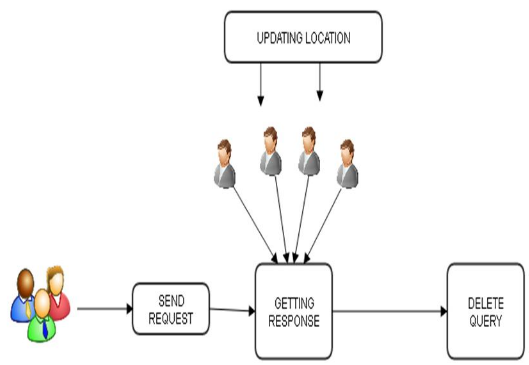
$$|p,\Upsilon|^u = \frac{|p,c_\Upsilon|_E + r_\Upsilon}{w_\Upsilon}$$

IV. METHODOLOGY

A. Existing System

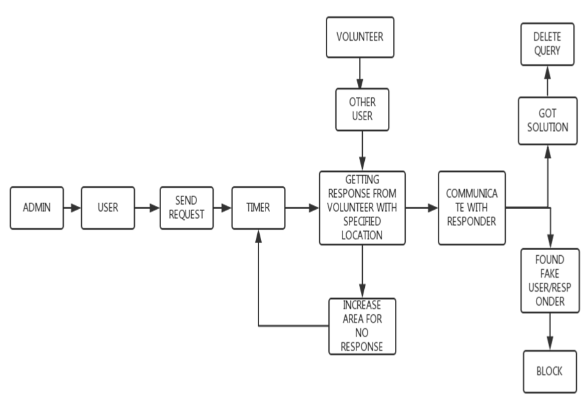
In existing system, user can update their location and receive responses form the volunteers who are all within the respective location until they receive any response or moved out of the location. User has to wait for longer time to get solution for sure.

1) Architecture



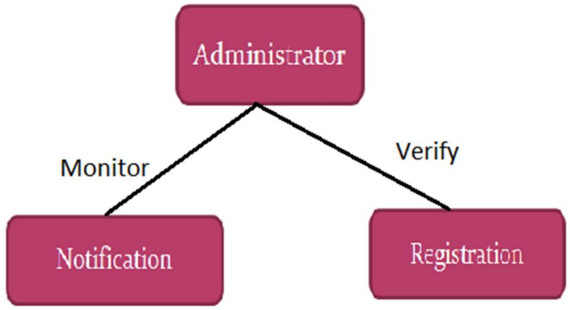
2) *Proposed System:* In proposed system, user can receive a solution within a time, and if not user can increase the location around a wide so that some other volunteer can answer for user's query. User will get a solution for sure for their query (by increasing the time and area). User or Volunteer might block if any fake volunteer or user found.

a) Architecture

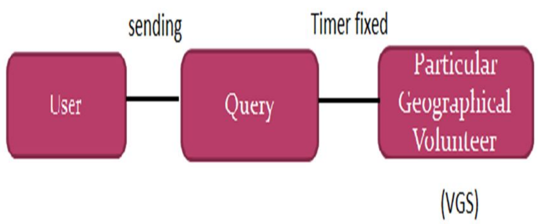


b) Modules

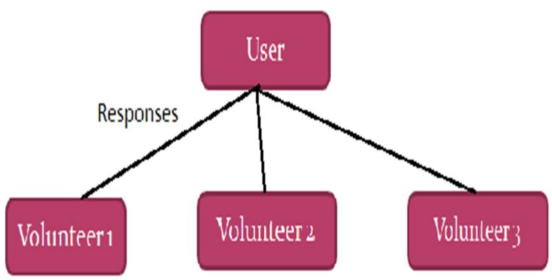
i) Admin: Admin will check the users, who are wants to register in this system in this system are real or fake users by verifying a authorized proof(example: Voter id, pan card, etc).



ii) *Dispatch Query:* Once the user has registered, they will be into VGS system. They can use this system if they want solution for any problem, or need some information, or to communicate with the local persons. By the way, user can send a query by mentioning their issue within a mentioned area covered.

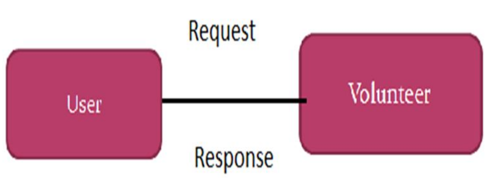


iii) *Getting Response:* As the query is into the system, it will be visible to the volunteers who are all in the mentioned location. They can view your queries within the time and the interested volunteers can answer your queries. There might be n number of volunteers around the locations and only interested volunteers can help user.

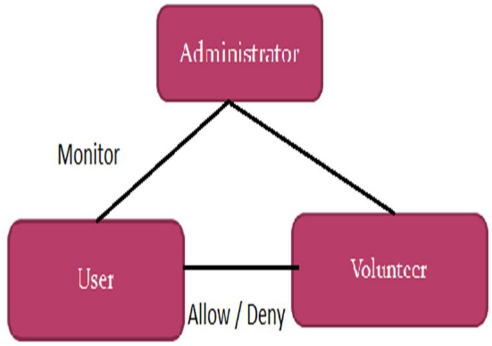


iv) *Timer:* A timer set to get a response from the user. The elapsed area will vary if the there is no response from any of volunteer. So that user can get a help from some other volunteers in enlarged locations.

v) *Communication:* Use can communicate with the volunteer for many other clarification about their queries and ideas. In this module the user can share their personal detail with the responder(volunteer), only if and if the user want to.



vi) Allow/Block: User or Responder can block the Responder/user, if the user or responder are not satisfied with responder or user respectively, or if they found any fake request or responding persons too.

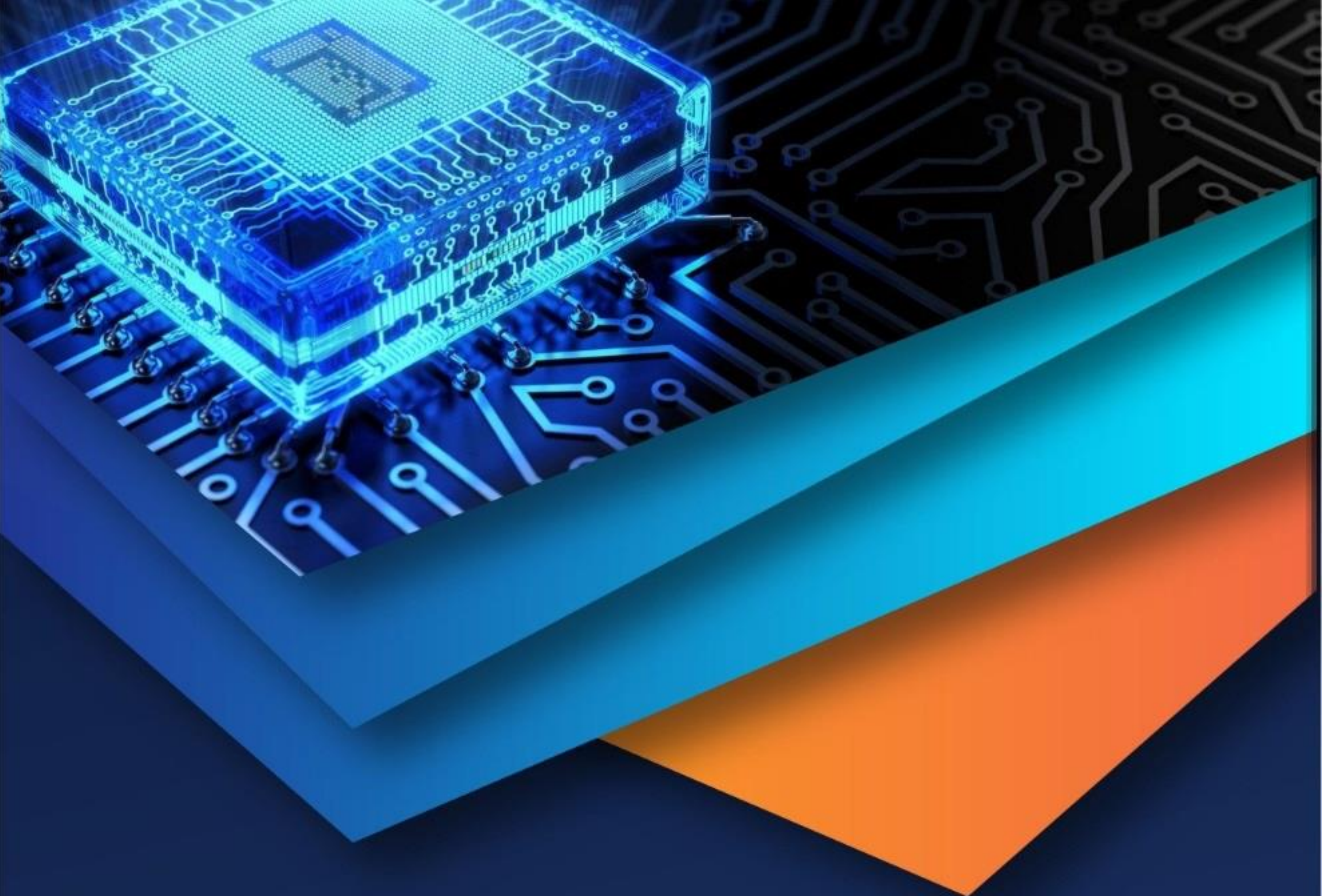


V. ACKNOWLEDGEMET

We would like to express our gratitude and greatest appreciation towards Prof. D. Mahalakshmi for giving us an opportunity to work under her for the project.

REFERENCES

[1] K. Zheng, Y. Zheng, X. Xie, and X. Zhou, "Reducing uncertainty of low-sampling-rate trajectories," in ICDE, 2012.
[2] C. Li, Y. Gu, J. Qi, G. Yu, R. Zhang, and Y. Wang, "Processing moving knn queries using influential neighbor sets," PVLDB, 2015.
[3] R. Cheng, D. Kalashnikov, and S. Prabhakar, "Evaluating probabilistic queries over imprecise data, "SIGMOD, 2003.
[4] X. Lian and L. Chen, "Efficient processing of probabilistic reverse nearest neighbor queries over uncertain data." VLDBJ, 2009.
[5] M. A. Cheema, X. Lin, W. Wang, W. Zhang, and J. Pei, "Probabilistic reverse nearest neighbor queries on uncertain data." TKDE, 2010.
[6] K. Zheng, G. P. C. Fung, and X. Zhou, "K-nearest neighbor search for fuzzy objects," SIGMOD, 2010.
[7] T. Emrich, H.-P. Kriegel, P. Kroger, M. Renz, and A. Z ufle, "Boosting spatial pruning: on optimal pruning of mbrs," SIGMOD, 2010.
[8] G. Trajcevski, R. Tamassia, H. Ding, P. Scheuermann, and I. F. Cruz, "Continuous probabilistic nearest-neighbor queries for uncertain trajec-tories," EDBT, 2009.
[9] J. Xu and B. Zheng, "Energy efficient index for querying location-dependent data in mobile broadcast environments," ICDE, 2003.
[10] P. Wang et al, "Understanding the spreading patterns of mobile phone viruses," Science Express, 2009.
[11] L. Kazemi and C. Shahabi, "A privacy-aware framework for participatory sensing," SIGKDD Explor. Newsl., 2011.
[12] K. Zheng, G. Trajcevski, X. Zhou, and P. Scheuermann, "Probabilistic range queries for uncertain trajectories on road networks," inEDBT, 2011.



10.22214/IJRASET

INDEX COPERNICUS

45.98

IMPACT FACTOR:
7.129

TOGETHER WE REACH THE GOAL

IMPACT FACTOR:
7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY