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Signal density determination in mobile network for quality of services

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ABSTRACT

Communication and Information technology application leads the country into next generation development. All the mobile users are seeking more quality service from their service provides. This concept paper discussed about to achieve the effective data service to apply reverse engineering for the border range specification and access point for mobile user services. The Quality Data Service to mobile users through sharing infrastructure by replacement of Mobile software concept to determine the range, nearest neighbor and clustering based mobile instead of transmitter. This will increase the efficiency of service to the user, which is provided by the mobile service providers.

Keywords: Mobile data service, reverse engineering, boundary point, clustering, infrastructure sharing.

1. INTRODUCTION

The Digital word permits all the mobile-users to communicate one with another without any limitation. The M-users are not satisfied with the current service offered by service providers one-way with another. This paper address issues to determine mobile users services and its performance. Mobile service border range can be determined based on the mobile instead of transmitter. Based on the performance of mobile signal determination efficiency the border range can be determined for the effective mobile services. Users are allowed to access nearest transmitter and receive the high-density signals. The current service system signals are determined based on the existing transmitter owned by service providers. This technical study highlights on border point specification for mobile users, allow the users to access the service based on clustering instead of branding, fix the nearest neighbor query for the selection of service and noise removal with conceptual graph based on the mobile instead of transmitters. The quality data sharing can be achievable through the determination of mobile signals replacement of existing identification methods.

2. BOUNDARY POINT

The mobile users are utilizing service based on the service providers' boundary and their service area. According to the range and the frequency the signal density also differs. If the signal is weak for one service provider in the same area another service provide signal is strong. This realization occurs based on the software and signal density, which provided by the mobile service providers. The identification of object based on the existing transmitter, which is located in the region. The boundary points can be determinable with the existing users and data-mining concept from the mobile instead of transmitter. Boundary points are data points that are located at the margin of densely distributed data such as cluster [1]. A boundary point p is an object that satisfies the following condition

- It is within a dense range IR.
- ∃ region IR' near P, Density (IR') > Density(IR) or Density(IR') < Density(IR)

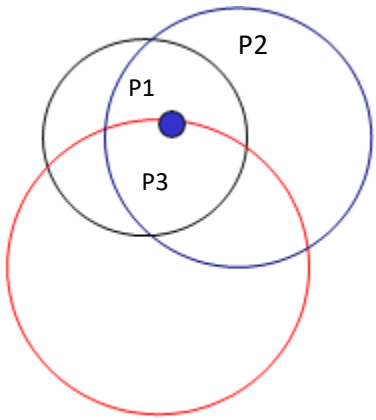

Figure 1
Boundary Specification for an object

The boundary points are differing from outliners or statistical counterpart-the change point. While outlines are located in the sparsely populated area, a boundary point occurs at the margin of dense region. According to reverse K-nearest , a given data set DB, a query point p, a position integer k, and a distance metric l(), reverse k nearest neighbors of p, denoted as $RkNN_p(k)$ ia set of points p_i the $P_i \in DB$ and $\forall p_i .p \in kNN_{Pi}$ (k) are the nearest of point p_i. RkNN has properties that are uniquely different from the conventional k-nearest neighbors (kNN): Reverse k-nearest neighbors are not localized to the neighborhood of the query point. The cardinality of a point's reverse k-nearest neighbors various by data distribution. This boundary point fixation process used to determine the nearest access point to the mobile user. This point fixation determine the nearest high density transmitter in the mobile user region or usage area. Boundary and the access point can be transfer to the control system by them the mobile can be automatically reorganize the nearest high density transmitter; the mobile user can utilize the high-density transmitter in the specified location [2-8].

In this diagram the point belongs to boundary area p2, but its lies center to the p1 density area. Though this belongs to p2, the density level can be compare and determine high-density region to adopt the determined transmitter services. This adaptation can be done through the software, which is used in the mobile. All the mobiles are detecting the signal and network access permission if it fulfills the m-device utilizable for our services. The first boundary and access point issue will be solvable using BORDER

algorithm. To determine the border and access point service provide area and the regions are classified based on clustering concept.

3. REVERSE ENGINEERING

The Border range specification is based on the transmitter. Instead of transmitter, the border range fixed by the mobile, the range will be various according the mobile traverse with in the region. If the object moves from one place to another; the borders range also various from one to another. During the movement, the mobile will generate the acknowledgement signals from the moving object to nearest transmitter. According to the existing transmitter and its density, we can adopt or select the transmitter for our services irrespective of service providers.

4. CONCEPT OF CLUSTERING

The object of clustering has been widely quoted as to reorganize the input data set in an unsupervised way such that data points in the same cluster are more similar to each other than to points in different cluster. When explaining this objective in the quantitative manner, it is to minimize the distance among the data points in individual clusters and to maximize the distance between clusters. Therefore, it is a natural way to validate the intra-cluster homogeneity and the inter-cluster separation of the clustering output in a global fashion, using the quantities inherent to the distribution of the output data.

This clustering concept used to determine the area density of the particular brand users; the region and the signal-density wise the m-users clusters are determined. These clustering techniques used to determine the border specification according to the signals as an input. Though different service provider's lies in the same clustering area, the high-density signal service provides to be automatically selected for services. The high-density level can be adopted from the existing location using m-software. The clustering concept used to determine the boundary area and the service region. The service providers area and offering service will be vary according to the clustering area. For an example mobile banking, Internet service and other services vary depends on the area and service provider. The cluster concept aid to determine the tree structure to made the mapping process between same service providers and their business partners. Clustering system determine the service and density signal area for effective services. The mobile lies in a cluster that sharable and accessible and provide service to more then one service providers; we can select the service using range nearest –neighbor query.

5. RANGE NEAREST –NEIGHBOR QUERY

A range nearest –neighbor query retrieves the nearest neighbor (NN) for every point in a range. It is a natural generalization of point and continuous nearest-neighbor queries and has much application in the mobile user application environment. In mobile environment users do not have the accurate knowledge about their location to specify their query point because all location identification methods have errors. Even if they have such knowledge, they may not want to expose this location to service providers for privacy reasons. Range nearest-neighbor query address these issues allowing users to specify range rather then points for nearest-neighbor queries. They are particularly appealing to the large number of 2G/3G mobile subscribers whose devices are incapable of pinpointing locations. While these devices can't support conventional NN queries, they can issue RNN quires through text message to find nearest transmitter.

A user may continuously ask for nearest neighbors while moving around It's inefficient to submit many PNN queries individually to the server. A better alternative is to submit a single RNN query around the current location to fetch all possible nearest neighbors for that area. Any PNN query issues in that area processed locally by a nearest –neighbor search in the perfected set, saving both computation and communication cost. Processing the points individually is inefficient because spatially adjacent PNN queries often access the same R-tree nodes. It's more efficient to group and process them in a batch by first issuing an RNN query whose range is the boundary box of all the PNN query points and then resolving the PNN results with in the RNN results.

The RNN queries used to identify the nearest service providers high-density transmitter. There are two phases are involved

- Developed efficient pruning heuristic for state of the art NN searching paradigms. Such as depth-first search and Best first Search.
- Trivial for PNN query: The distances between all the objects in a leaf index node and query point are calculated and the object with the shortest distance is recorded as the PNN candidate.

The RNN used to identify the range where the mobile lies while accessing services. This application leads to determine the nearest service provider's transmitter and high-density area location. This process used to identify the mobile service accessibility. The identification process support to classify the clusters and device identification. After identifying the RNN, we can reduce the data Noise using Noise removal procedure.

6. NOISE REMOVAL PROCEDURE

Noise is "Irrelevant or meaningless data". For most existing data cleaning methods, the focus is on the detection and removal of noise that is the result of an impact data collection process. Most existing data cleaning methods focus on removing noise that is the product of low-level data error that result from an imperfect data collection process, but data object that are irrelevant or only weakly relevant also significantly hider data analysis. Data cleaning address a variety of data quality problem including noise and outliers, inconsistent data, duplicate data and missing values. Data cleaning techniques developed at the data collection stage are focused on detecting and removing low-level error and inconsistencies due to an imperfect data collection process. There is a comprehensive data cleaning system which includes four types of data transformation – mapping, matching, clustering and merging – that can eliminating errors, inconsistencies or duplicate.

The following techniques are suggested for data cleaning to enhance data analysis in the presence of high noise level.

- Distance based
- Clustering based
- Approached based and
- Hyperclique based.

The collected and error free data will be used for communication process.

7. CONCLUSION

The border range identification using reverse engineering using mobile will improve the quality of services as well as reduce the cost of service. It will provide a common environment for technology development and technical applications in the real world. The further research continues towards that how the software can be replaced automatically for the above issues. The effective quality mobile service will be achievable through border range specification according to the moving object. This will lead India become a pioneer in communication and information technology applications.

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