TALKING FINGERS

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Abstract

Real time communication with Visually impaired is always a challenge. There are very few interpreters at limited locations. The most common challenge faced by the blind people is to communicate with others. One of the technologies which aid the blind person to call in android mobile is Virtual Reality. Even though virtual reality is employed to carry out the operations, it's very difficult for them to make a call from their phone memory manually. This App will help the blind people to call the other persons based on "HAPTIC TECHNOLOGY" and used to share their location. Haptic is the "science of applying tactile sensation to human interaction with computers". This technology integrates the information through the sense of touch. The implementation of this mechanism is done by the means of haptic rendering and contact detection by storing and retrieving of haptic data.

Keywords :*Haptic Technology,Gesture,Android,Haptic rendering,HCI.*

I. INTRODUCTION

The main aim of this project is to develop a Mobile Application for students with low vision or who are blind are often disadvantaged when information is presented in the regular classroom. Detailed visual information can take on many forms from textbook pictures to computer simulations. These visual presentation methods are not readily accessible to students with visual impairments and can lead to a lack of understanding and weak concept development. The students may not understand what they are missing and the teacher may not know how to sufficiently convey the information. This is especially true for math, which often rely on visuals to deliver key aspects of content. There are a number of excellent methods that provide accessibility to students with visual impairments.

II. LITERATURE SURVEY

[1] There is more and more commercial and research interest in location-based web search, i.e. finding web content whose topic is related to a particular place or region. In this type of search, location information should be indexed as well as text information. However, the index of conventional text search engine is set-oriented, while location information is two-dimensional and in Euclidean space. This brings new research problems on how to efficiently represent the location attributes of web pages and how to combine two types of indexes. In this paper, we propose to use a hybrid index structure, which integrates inverted files and R*-trees, to handle both textual and location aware queries. Three different combining schemes are studied: (1) inverted file and R*-tree double index, (2) first inverted file then R*-tree, (3) first R*-tree then inverted file. To validate the performance of proposed index structures, we design and implement a complete location-based web search engine which mainly consists of four parts: (1) an extractor which detects geographical scopes of web pages and represents geographical scopes as multiple MBRs based on geographical coordinates; (2) an indexer which builds hybrid index structures to integrate text and location information; (3) a ranker which ranks results by geographical relevance as well as non-geographical relevance; (4) an interface which is friendly for users to input location-based search queries and to obtain geographical and textual relevant results. Experiments on large real-world web dataset show that both the second and the third structures are superior in query time and the second is slightly better than the third. Additionally, indexes based on R*-trees are proven to be more efficient than indexes based on grid structures.

[2] The conventional Internet is acquiring a geo-spatial dimension. Web documents are being geo-tagged, and geo-referenced objects such as points of interest are being associated with descriptive text documents. The resulting fusion of geo-location and documents enables a new kind of top-k query that takes into account both location proximity and text relevancy. To our knowledge, only naive techniques exist that are capable of computing a general web information retrieval query while also taking location into account. This paper proposes a new indexing framework for location aware top-k text

retrieval. The framework leverages the inverted file for text retrieval and the R-tree for spatial proximity querying. Several indexing approaches are explored within the framework. The framework encompasses algorithms that utilize the proposed indexes for computing the top-k query, thus taking into account both text relevancy and location proximity to prune the search space. Results of empirical studies with an implementation of the framework demonstrate that the paper's proposal offers scalability and is capable of excellent performance.

[3] Location-based information contained in publicly available GIS databases is invaluable for many applications such as disaster response, national infrastructure protection, crime analysis, and numerous others. The information entities of such databases have both spatial and textual descriptions. Likewise, queries issued to the databases also contain spatial and textual components, for example, "Find shelters with emergency medical facilities in Orange County," or "Find earthquake-prone zones in Southern California." We refer to such queries as spatial-keyword queries or SK queries for short. In recent times, a lot of interest has been generated in efficient processing of SK queries for a variety of applications from Web-search to GIS decision support systems. We refer to systems built for enabling such applications as Geographic Information Retrieval (GIR) Systems. An example GIR system that we address in this paper is a search engine built on top of hundreds of thousands of publicly available GIS databases. Building a search engine over such large repositories is a challenge. One of the key aspects of such a search engine is the performance. In this paper, we propose a framework for GIR systems and focus on indexing strategies that can process SK queries efficiently. We show through experiments that our indexing strategies lead to significant improvement in efficiency of answering SK queries over existing techniques.

[4] We compare two different techniques for browsing through a collection of spatial objects stored in an R-tree spatial data structure on the basis of their distances from an arbitrary spatial query object. The conventional approach is one that makes use of a k-nearest neighbour algorithm where k is known prior to the invocation of the algorithm. Thus if m. k neighbours are needed, the k-nearest neighbour algorithm has to be revoked form neighbours, thereby possibly performing some redundant computations. The second approach is incremental in the sense that having obtained the k nearest neighbours, the k 1 1st neighbour can be obtained without having to calculate the k 1 1 nearest neighbours from scratch. The incremental approach is useful when processing complex queries where one of the conditions involves spatial proximity (e.g., the nearest city to Chicago with population greater than a million), in which case a query engine can make use of a pipelined strategy. We present a general incremental nearest neighbour algorithm that is applicable to a large class of hierarchical spatial data structures. This algorithm is adapted to the R-tree and its performance is compared to an existing k-nearest neighbour algorithm for R-trees [Roussopoulos et al. 1995]. Experiments show that the incremental nearest neighbour algorithm significantly outperforms the k-nearest neighbour algorithm for distance browsing queries in a spatial database that uses the R-tree as a spatial index. Moreover, the incremental nearest neighbour algorithm usually outperforms the k-nearest neighbour algorithm when applied to the k-nearest neighbour problem for the R-tree, although the improvement is not nearly as large as for distance browsing queries. In fact, we prove informally that at any step in its execution the incremental nearest neighbour algorithm is optimal with respect to the spatial data structure that is employed. Furthermore, based on some simplifying assumptions, we prove that in two dimensions the number of distance computations and leaf nodes accesses made by the algorithm for finding k neighbours is O (k1 k).

III.PROPOSED METHODOLOGY

EXISTING SYSTEM

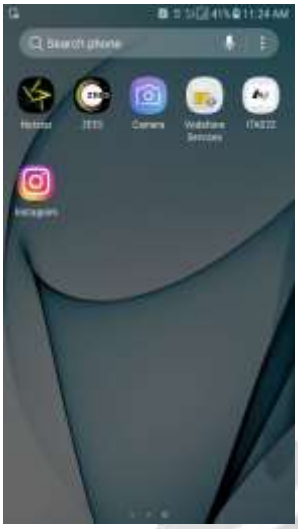
Already existing techniques of mobile calls for Blind Person is done by searching the contacts in the phone memory. This facility is not appreciable for blind person to make a call for emergency purpose.

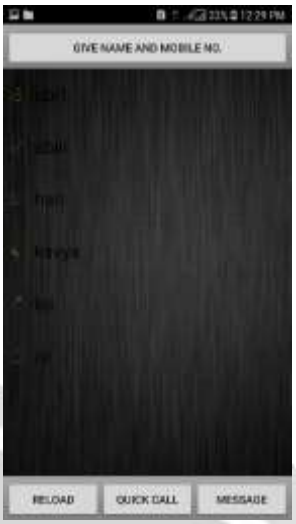
DISADVANTAGES

- Time consuming
- Not effective
- Required manual search

3.2 PROPOSED SYSTEM

This innovative technology and software can integrate rich information through the sense of touch to add to the information being provided through auditory and visual means. Application will help the blind people to call the other persons and used to share their location. Blind person phone calling is done by drawing pattern i.e. Gestures. So Blind Person can be independently use their Apps for calling others and share their location.





IV.PURPOSE

One of the technologies which aid a blind person to call using the android mobile is Virtual Reality. Even though virtual reality is employed to carry out the operations, It's very difficult for them to make a call from their phone memory manually. This Application will help the Blind people to call the other persons without help of others. They can communicate to others independently by using the simple gestures.

4.2 PROJECT SCOPE

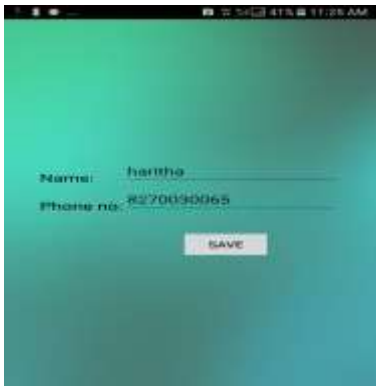
This Application is based on "HAPTIC TECHNOLOGY". Haptic is the "science of applying tactile sensation to human interaction with computers". Our technology integrates the information through the sense of touch. The implementation of this mechanism is done by the means of haptic rendering and contact detection by storing and retrieving the haptic data.

Additionally, this application will allow the user to share their location to others by tapping the button. When the user taps the button, message will be send to the emergency contacts.

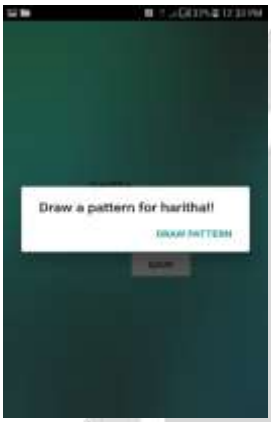
V.EXPERIMENTAL RESULTS

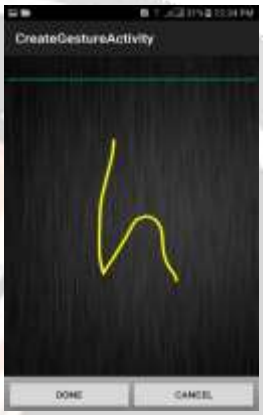
The concept of the application is to help the blind people in emergency situations and send the location of the person to emergency contacts. Our application is under beta stage we have a few limitations to overcome. The pattern cannot be drawn exactly each time as the user might have multiple contacts some of them under the same name as pattern must be given with the at most perfection and minute changes might access a different number we have to optimize the application in the future. We are planning to add voice access for the pattern which the user types, so that we can access the contact list and get the contact we want.

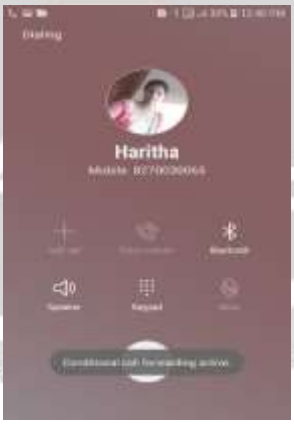
We can save the name and contact of the person for the first time.



The blind people can call the person using the gestures.







VI. CONCLUSION

Innovative technology and software can integrate rich information through the sense of touch to add to the information being provided through auditory and visual means. Blind person also calls in android mobile with help of apps. Calling done by drawing patterns i.e., gesture haptic-based Application can be a useful tool for blind persons. The algorithms perform disabilities to use android mobile for call, different design pattern applied for each contacts in contact list. Not search based algorithm. Our innovative technology and software can integrate rich information through the sense of touch to add to the information being provided through auditory and visual means.

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