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RESEARCH ARTICLE

Retrieving Information by Using Personalized Mobile Search Engine (PMSE)

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Abstract - In this paper, we give an overview of a personalized mobile search engine (PMSE), which provides area of searching different information from current position. In this technology, Information is access on mobile devices from the current context i.e. location of the user and the content. PMSE captures the user's preferences in the form of concepts i.e. location and content by mining their clickthrough data. User's locations are capture by Global Positioning System (GPS) in PMSE. The user preferences are grouped and rank them by personalized ranking function for the future search results. Architecture and design for implementation of PMSE can be described by using client-server model. In PMSE, client collects and stores locally the clickthrough data or Queries, whereas server different operation such as extraction, training and re-ranking on the clickthrough data. In PMSE, local clickthrough data Provides privacy.

Keywords- PMSE; GPS; Clickthrough; Mobile search engine

I. Introduction

Search engines provides limited information search to the mobile devices, because mobile users submit shorter queries and these queries are more ambiguous compared to web search queries. Hence now a days it is requirement that mobile search engines must be able to provide a profile that contains users' interests or needs and different personalize search results. Personalize search is nothing but the users queries, which are mostly used by the users.

Personalized search captures user interests and provides the middleware between user query and general search engines. Personalized search is provides the search results obtained from general search engines. In this system, user profile is important module because it keeps continuous track on the users search activities and hence it is necessary to be trained constantly.

A practical approach to capturing a user's interests for personalization is to analyze the user's click through data Leung, et. al., developed a search engine personalization method based on users' concept preferences and showed that it is more effective than methods that are based on page preferences. However, most of the previous work assumed that all concepts are of the same type. Observing the need for different types of concepts, we present in this paper a personalized mobile search engine,

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PMSE, which represents different types of concepts in different ontology. In particular, recognizing the importance of location information in mobile search, we separate concepts into location concepts and content concepts [11].

In personalized mobile search engine (PMSE) first step is to maintain the user's profile hence it is necessary to build the user's profile space. Maintaining users profile is difficult task because it requires continuously updating. For updating and keeping track on the users profile ontology is used. Ontology's keep track on the encountered concepts from past search activities and also capture the relation-ships among various concepts, hence ontology plays an important role in our personalization process as well as in PMSE.

Ontology is nothing but the study of the nature of existence, or reality, and deals with questions concerning what entities exist, how such entities can be grouped, relationship between entities, and subdividing them according to similarities and differences

In computer science engineering defines an ontology is nothing but represents knowledge that is concepts within a domain properties and interrelationships of those concepts.

II. Related work

A decision tree under our uncertainty model resembles that Thorsten Joachims,"Optimizing Search Engines using Clickthrough Data" in [6] described an approach to automatically optimizing the retrieval quality of search engines using clickthrough data. In this paper, a method is developed that utilizes clickthrough data for training. They used query-log of the search engine in connection with the log of links the users clicked on in the presented ranking. This paper presents a method for learning retrieval functions by using a Support Vector Machine (SVM) approach.

Sukanta Sinha, Rana Dattagupta and Debajyoti Mukhopadhyay in [3], describe Ontology based Domain Specific Web Search Engine for Commonly used Products using RDF. Search engine is used for information retrieval system from World Wide Web (WWW). Web-search engines hold title tag with URL and meta-tag information from the Web-page content in their main search result.

In this paper, they proposed a prototype of a domain specific Web-search engine, which supports multiple domains. They define a prototype which is highly scalable and mainly designed for few commonly used products such as book, mobile handset, medicine, jewelry, etc. they also used supporting domains by introducing new approaches like Ontology, RDF format and other details such as weight table, syntable, etc. By just adding new properties in the RDF format they increase basic information attributes in the search result.

Mr. V. Dilip kumar and Mr. S. Ravi kumar in [4] presents Ontology Based Android Mobile Search Engine (OBMASE), which captures the users' preferences in the form of concepts by mining their click through data. OBAMSE system is based on the two concepts and classifies these concepts into content and location concepts. By using **Global Positioning System (GPS)** OBAMSE system capture users location. The user inputs or preferences are organized in an ontology-based, which are used to adapt a personalized ranking function for rank adaptation of future search results. For understanding the concepts of association of query and the users need, four entropy's are introduced for balancing the weights between the content and location of the users [4]. Construction of OBAMSE system contains mobile users, main server, and ontology.

Mobile users are nothing but the Android mobile client, these users access a service made available by a server. Main server is a computer program running to serve the clients request. Ontology is knowledge or a set of concepts within a domain, and defines the relationships between these concepts. Figure 1 show the General process flow of OBAMSE.

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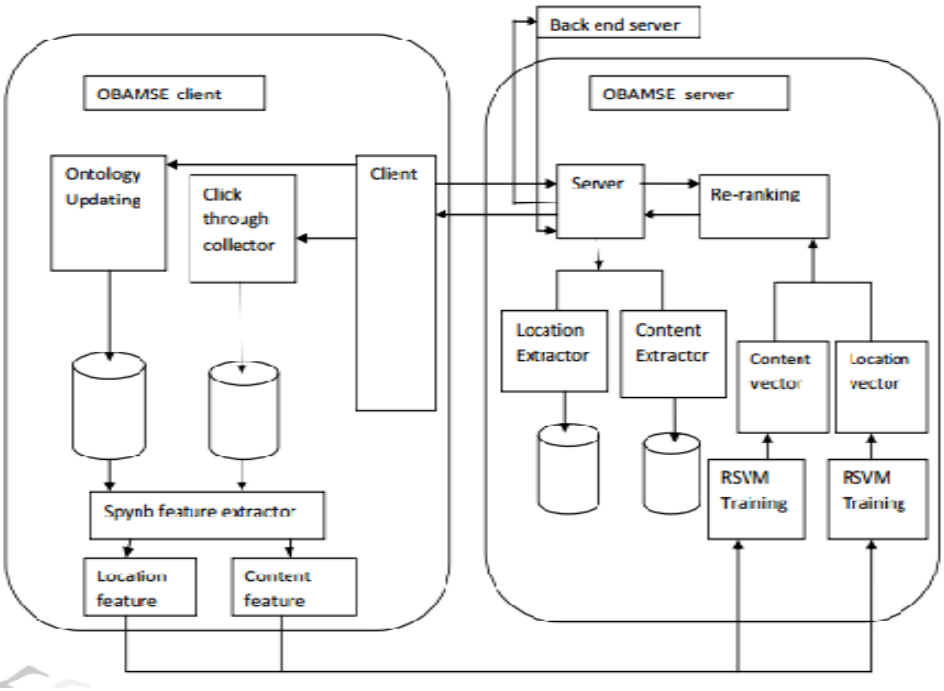

Fig. 1 The General process flow of OBAMSE *[4].*

As shown in the architecture it mainly contains OBAMSE client and the OBAMSE server .The OBAMSE client access the data from the OBAMSE server, it contains the backend server, from there the OBAMSE fetch the data then it sends to the client.

Jaime Teevan, Meredith Ringel Morris and Steve Bush in [7], describe a Personalized Web search which provides information about an individual to identify the most relevant results for that person. This paper, describes the potential for using information from a group of related users to enhance the personalization of Web search results. First groups people and be used to benefit personalized search and found that several of the groups are similar in many respects like task, occupation, and interest etc. and considering these respects queries are related to their group's theme.

For grouping system used the similarity of query selection from user profile, desktop information, and explicit relevance judgment is applied on the query and desktop information. The groupings of people divided into two dimensions: the group member's relationship, and how group is formed. They find that, from these two types of grouping, some groupings provide valuable insight into what members. But it can be difficult to identify valuable groups implicitly. We explore an algorithm to groupize the user's queries, which is opposite to personalize algorithm, Web search results that leads to a significant improvement in result ranking on group-relevant queries.

Heasoo Hwang, Hady W. Lauw, Lise Getoor, and Alexandros Ntoulas in [8], describes the organizing User Search Histories. In this paper, they describes search engines which keeps track on the users queries and clicks while searching online and they supports users in their long-term information quests on the web. In this paper, system presents problem of organizing a user's historical queries into groups. Different search engine components and applications use automatically identifying query groups. These groups are divided into algorithms such as result ranking; query suggestions for grouping, query alterations, sessionization, and collaborative search on the user's data, by using these points query groups are automatically identified. In this paper, they propose a robust approach that leverages search query logs and they also experimentally study the performance of different techniques especially when combined together.

The proposed system shows how organizing user search histories into query groups for this system used query reformulation and click graphs for grouping information when searching online. In this paper, system defines an approach that is based on probabilistic; query fusion graph is nothing but the combination of two graphs, time-based and keyword similarity-based approaches.

Qingzhao Tan, Xiaoyong Chai, Wilfred Ng, and Dik-Lun Lee in [9], describe a new algorithm that is Ranking SVM in a Co-training Framework (RSCF). This algorithm takes the click through data i.e. the data have been clicked on by a user as an input and generates adaptive rankers as an output. RSCF algorithm first categorizes the data as the labeled data set and the

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unlabeled data set. Labeled data set is nothing but the items that have been scanned already and unlabeled data set is nothing but the items that have not yet been scanned.

In utilizing click through data is the data that only provides a small set of training. RSCF algorithm solves this problem by using co-training framework by augmenting the training data set. RSCF algorithm, the labeled data is then compared with unlabeled data and result is used to obtain a larger data set for training the rankers.in this way RSCF algorithm produces better ranking results than the standard Ranking SVM algorithm.

Yanshan Xiao, Bo Liu,,Jie Yin, Longbing Cao, Chengqi Zhang, and Zhifeng Hao in [10],describe an Positive and unlabelled learning (PU learning) method. PU learning has been investigated to deal with the positive examples and the unlabeled examples.

In this paper, an approach is proposing known as similarity-based PU learning (SPUL) method. In this method, by associating the ambiguous examples with two similarity weights. These weights are used to find the similarity of an ambiguous ex-ample towards or between the positive class and the negative class, respectively.

III. Conclusions

The proposed system is a personalized mobile search engine which is a new idea for personalizing (i.e., from user's interest) web search results. By mining content and location concepts for user profiling, it makes a use of both the content and location preferences to personalize search results for a user. The possible outcome will improve Retrieval effectiveness for location queries (i.e., queries that retrieve lots of location information).

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