

## Automatically Diversifies XML Keyword Search

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### Abstract

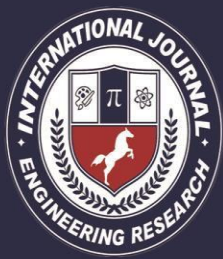
Keyword query allows ordinary users to search large amounts of data, the ambiguity of keyword query makes it difficult to respond effectively keyword queries, especially for queries short and vague key words. To resolve this problem a challenge, in this paper an approach that automatically diversify ca XML search keyword based on their different contexts in the XML data is proposed. Given a query keyword small and vague and XML data to be searched, first it is derived from the keyword search query candidates by a simple model feature selection. And then, we design a keyword search diversified XML model effective cation of measuring the quality of each candidate. After that, two efficient algorithms are proposed to calculate incrementally quelled top-k query candidates as diverse search intentions. Two criteria are targeted: the selected candidate's consultation are most relevant to the query given before they have to cover the maximum number of different results. At last, a full assessment of the sets of real and synthetic data demonstrates the effectiveness of our model of diversification and efficiency of proposed algorithms.

Keywords :XML Keyword Search, Context-Based Diversification.

### I. Introduction

Search words structured data and semi aroused the interest of research much more recently by allowing joint customers to

recover information from those sources of structured data, without need to learn how the languages of complex queries and structure base [1].



In general, the more keywords a given query keyword contains, the easier the semantic search query keywords can be identified.

However, when the given query keyword contains only a small number of vague keywords, it will become very difficult to derive the semantic search query due to the high ambiguity of such queries using keywords problem. Although sometimes user participation is useful to identify the semantic search query keywords, which is not always applicable to rely on users due to keyword queries can also come from implementation of the system. In this application, web or search engine database may need to automatically calculate the semantic search queries by short and frequent keywords only based on the data to be recorded. Search semantics derivatives are maintained and updated off-line. Once a keyword query is issued by real users, their corresponding semantic search can be used directly to make an instant response. In this paper, it lends itself particularly effectively address the problem of deriving the semantics of keyword search queries by considering only data that does not receive much more attention in previous works. By

exploring of various terms of features of query keywords, we have two advantages: the first is the diversification of search results keyword automatically by the different search intentions, you can find various and diversified information for users; and the second is that of improving the efficiency of the keyword search because fraudsters texts diversified keyword queries can use to reduce the size or f node lists of relevant keywords. Therefore, we are motivated, the problem of keyword searchable studying diversification on the contexts query keywords in XML data based which called Intent diversification. Although the intention of diversification has been in Information Retrieval (IR) discussed, for example, [5,8] intentions user models at the current level of the taxonomy and [6] obtains the possible query intentions of mining query logs, they are not always applicable -cause on the one hand, it is not easy to get the useful taxonomy and query logs; on the other hand, results are diversified modeled at different level, i.e. Documents in IR vs. Fragments in XML. To the best of my knowledge and belief, [7] is the most important work, the first maps each

keyword to a set of attribute-keyword pairs, and then created a series of structured queries. It assumes that any structured query is a query interpretation. However, the assumption is applied too strict for XML data because the context information may not necessarily be structured, that is, it will appear in the form of either attribute labels or texts.

II. Problem Definition

Now days XML is the language to send the messages, used and designing websites documents. XML keyword performed by the exact user-entered search can in the effective search users run not Uncertainty about keywords. XML data classification and outlier documents may not contain keywords. A search is binary trees may not result in the return of documents of AVL trees and red black trees. XML can be effective in this method, as it can help to classify synonyms to a keyword. Let denote  $T$  as a keyword query  $q$  and an XML data, a number of possible search intentions  $Q$  consider that the user above  $k$  qualified inquiries regarding of each query to a connection with its corresponding functional terms in  $T$ . the high relevance are generated and diversification.

Table 1: Determines the Search Engine Analysis

|                            |          |            |              |             |             |
|----------------------------|----------|------------|--------------|-------------|-------------|
| database                   | system   | relational | protein      | distributed | oriented    |
|                            | 7.06     | 3.84       | 2.79         | 2.25        | 2.06        |
| Mutual score ( $10^{-4}$ ) | image    | sequence   | search       | model       | large       |
|                            | 1.73     | 1.31       | 1.1          | 1.04        | 1.02        |
| query                      | language | expansion  | optimization | evaluation  | complexity  |
|                            | 3.63     | 2.97       | 2.3          | 1.71        | 1.41        |
| Mutual score ( $10^{-4}$ ) | log      | efficient  | distributed  | semantic    | translation |
|                            | 1.17     | 1.03       | 0.99         | 0.86        | 0.70        |

With reference to mutual information, the various pairs selected on the basis used for functions transformation in machine learning to criterion, the variables redundancy feature selection an XML tree  $T$  and its result set  $R(T)$ . Query  $q$  is a combination of database query XML data set shows the mutual information score for the query keywords in  $q$ , which represents each relative to the matrix a search intent with the specific semantic query expansion database systems aims to locate the publication, the problem for query expansion discuss in the field of database systems. Query Expansion of Information Retrieval in Encyclopedia of Database Systems Relational then the generated query to be changed to seek specific query expansion over relational database, in which the returned results are empty because no

work for the problem is reported that about relational Database.

### III. System Architecture

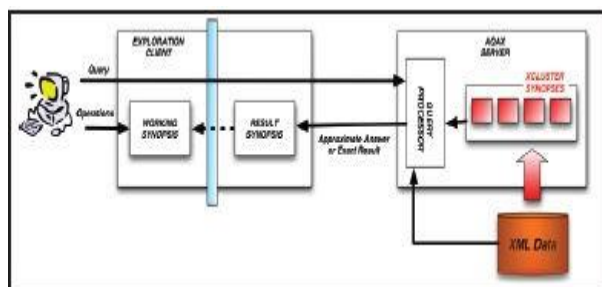


Fig. 1: System Architecture

Search engine optimization is process of the visibility of the website to improve natural search engine rankings by increasing search engine ranking page can of affecting the visibility of a website in the search engine different types of search target as image hyperlinks, HTML, XML, video industry search defined as the process. Database is huge and dynamic collection includes highlighting points datasets usage information therefore requires effective mining is challenge in knowledge discovery. XML pages are more complex than text data follow no uniform structure containing raw data, which is therefore not indicated in the Web data mining complex has become time-consuming and difficult. The process of a query to generate from the original keyword

file, the corresponding function terms for each query keyword to search, retrieve first keyword query  $q$  and the construct matrix on a mutual information scores ranked based provides a search intent. The aggregate score for the mutual information any search intention is to some extent the confidence of the context of the query keywords with no other skills to produce search intentions, and then clickthe appropriate queries to descending by aggregated mutual information scores. 20 Feature conditions for each query keyword and then generate all possible search intentions, which we continue to the top  $k$ -qualified and diversified queries identify the original query. Baseline-Algorithm calls the predicted function in terms of match query from the XML data  $T$  and then generate all possible intended queries based on the retrieved functions terms last calculate the social balance sheets as keyword search results for any query and measure their diversification of the guest. Recognizing different traditional XML keyword search and remove the duplicates to compare by the results generated cover several search

algorithms can meet the requirement of diversification keyword search.

#### **IV. Keyword Search Diversification Algorithms**

We first introduce the process of a new query from the matrix of the original keyword query generating the data to be searched. And then, we proposed on the basis of a matrix-based algorithm to retrieve the diversified keyword search results. Finally two anchorbased pruning developed algorithms to improve the efficiency of keyword search diversification by the interim results will be used.

##### **A. Generate Search Intentions**

When a keyword query  $q$ , we first select the corresponding function terms for each query to retrieve keyword and then an array of Web design intentions. In the matrix, the characteristic conditions in each column based on their mutual information scores are ranked. Any combination of the characteristic conditions (a term per column) provides a search intent. We choose iteratively combining with the maximum total mutual information score than the next best search intent until the terminal needs to be achieved. As discussed above, the sum of

the mutual information score of each search intent, to some extent, the confidence of the context of the query keywords. With no other knowledge we want to create the search intentions and then check the appropriate queries. Through their entire mutual information scores in descending order In this paper we choose Feature 20 terms for each query and then all possible search to generate keyword intentions, which we continue to identify the top  $k$  qualified and diverse queries w.r.t. the original request.

##### **B. Baseline Solution**

When a keyword query is the intuitive idea of the baseline algorithm, we first retrieve the predicted function in terms of match query from the XML data  $T$ ; and then we generate all possible intended queries based on the retrieved function terms; Finally, we calculate the social balance sheets as keyword search results for any query and measure their diversification score. As such, diversifies the top  $-k$  inquiries and the results in user can be returned.

Unlike traditional XML keyword search, we have to detect and remove, by comparing the newly generated results with the previously

generated ones or the duplicated ancestor results. This is because covering a result of multiple search intentions. To meet the requirement of Keyword diversification justice, but we are obliged to return the distinct SLCA results to the user.

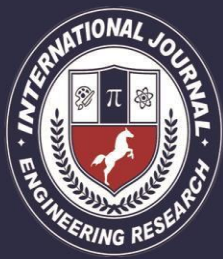
## **V. Conclusion**

In this work, we first approach a diversified results of keyword querying XML data on the contexts of the query to search for keywords in the basis of the data. The diversification of the contexts were measured by exploring their relevance to the original query and the novelty of their results. In addition, we developed three effective on the observed properties of XML keyword search results based algorithms. Finally, we have shown the effectiveness of our proposed algorithms executed by significant number of queries over both DBLP and XMark records. Meanwhile, we also confirmed the effectiveness of our diversification model through the returned search analyze intentions for keyword queries about DBLP record. From the experimental results, we obtain that our proposed diversification algorithms

qualified search return intentions and results to users in a short time.

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