

# Customizable Personalized Mobile Search Engine (PMSE) for Multiple Uses

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## Abstract –

*Mobile search engine is used widespread by smart phone users to gather relevant information. While PMSE exists in the market, the customizable component appended here with primary techniques to fit various servers. The personalization enables users to apply metasearch that combines search engine techniques. The proposed subject has broader scope when embedded with GPS or other artificial intelligence techniques.*

**Keywords**-ontology, search engine, artificial intelligence

## 1. INTRODUCTION

Mobile search is primarily used in association with search engines. The problem lies in the limitedness of opinion. The search engine are

created in general perspective while Personalized Mobile Search Engine (PMSE) presents user specific search engine. The former engine involves higher degree of ambiguities and the search results might remain inaccurate at certain cases. With large number of users the general search engines have not addressed individual queries and consideration <sup>[1]</sup>. In PMSE, user's individual preferences are regarded. The data mining concept performs retrieval of search result information based on the clickthrough data. The ontology building process adapts multifaceted users and offers space to categorize information in terms of content and location <sup>[2]</sup>.

Section 2 discusses on the current amenities of the PMSE system. Section 3 discusses on the proposed PMSE system. Section 4 performs a comparison between the systems to evaluate performance. Section 5 concludes the presentation with suggestion of future works.

## 2. EXISTING PMSE SYSTEM

PMSE is used for multiple applications and serves as the base for search engine optimization, ontology and user management researches. The following are the major aspects of the existing system.

1. Users can manually set the location. By this way, the user's location preference is identified [2][3].
2. Users can finalize a list of topics. By this way, the user's content preferences identified [3].

The GPS and clicks direct search engine to derive relevant search results. The mechanism is rather simple. The accessibility to search engine is permitted to the user and the necessary result presented. The system, as a whole, lacks interactivity with the users. There is no primary technique deployed. Additionally, the degree of personalization is extremely less.

The existing PMSE system has higher chances to pose security threats to the users. This demands for an enriched system.

## 3. PROPOSED PMSE SYSTEM

### 3.1 System Overview

The PMSE system adopts a metasearch approach and has a link with the commercial search engine. Similar to the existing system, the user's

request is accepted and relevant information is retrieved from server. However the internal function is entirely different. The search results are displayed based on the evaluation of the following factors:

- a) the history of user's clickthrough [4]
- b) Related searches [5]

These are individually stored in the server. The PMSE clients on Google Android will experience personalized suggestion. Ultimately, PMSE server has the ability to mitigate privacy issues and establish high quality of ranking.

### 3.2 System architecture

The architecture is classified into 2 modules namely, PMSE server and PMSE client. The interaction is initiated from the client's end where the query is entered. The browser results

#### SYSTEM ARCHITECTURE

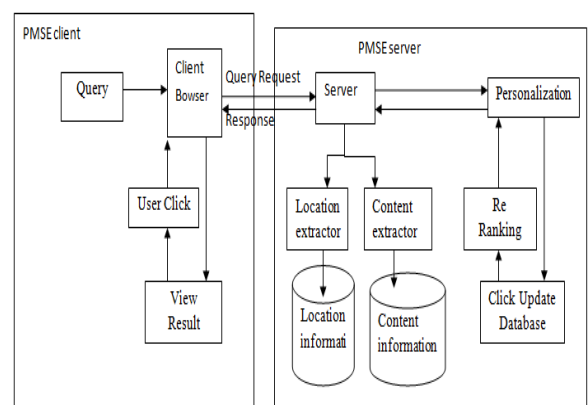


Figure 1 System architecture

vary as and when the user clicks change. The interaction is terminated by the server at the

client's respective browser. The PMSE server functions in a secured manner as represented in Fig. 1.

The server maintains 2 different ontologies- location information coupled with extractor and content information coupled with extractor. The personalized customization involves four major steps-

1. Ontology extraction
2. Reranking search results with instant update of ontology and clickthrough collection for that particular client. The reranking takes place based on the weight vectors present in RSVM training module
3. Clickthrough database is updated <sup>[6]</sup>
4. Optimizing search engines <sup>[6][7]</sup>

These take place internally and can be customized at any instance.

#### 4. EVALUATION OF PERFORMANCE

The proposed system highlights a good information retrieval system with high relevance/ accuracy whereas the existing system that displays lengthy results. The semantic technique in the existing system makes use of query-log which is a log of links personally used by a user <sup>[8][9]</sup>. The storage space required for proposed system is lesser. When the user creates profile on PMSE server, the privacy is

highly maintained. Therefore, every activity is well recorded so that the system can direct the user in future <sup>[10]</sup>. The interaction of the system with the user is limited, yet appropriate.

Based on factors such as usability, speed, quality, storage and cost, it is evident that the proposed PMSE system guarantees enriched performance to the users.

#### 5. CONCLUSION

The proposed PMSE is not an enriched version of existing PMSE. Instead, it completely overtakes the existing one with the quality retrieval procedure, semantic quality and ontology effectiveness. The PMSE server maintains only the essential information thereby facilitating smoother control to privacy.

The customizable PMSE has a broader scope such that it can be applied to global geographic pattern in association with GPS. Virtual systems can also be used as the target regions to access this system.

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