Global Journal of Advanced Engineering Technologies and Sciences

A SURVEY ON WEB SEARCH RESULT BASED ON USER PREFERENCE

N.S.Sindhu*, S. Sibi, B. Vanitha, B. Vinitha
*Assistant Professor Department of Computer Science and Engineering KPR Institute of Engineering and Technology Coimbatore, TamilNadu, India,
Research Scholar Department of Computer Science and Engineering KPR Institute of Engineering and Technology Coimbatore, TamilNadu, India,
Research Scholar Department of Computer Science and Engineering KPR Institute of Engineering and Technology Coimbatore, TamilNadu, India,
Research Scholar Department of Computer Science and Engineering KPR Institute of Engineering and Technology Coimbatore, TamilNadu, India,.

Abstract
Internet usages are rapidly increasing as the users are dependent on the web search results for the needs of information. To obtain effective results based on the user preference, the user profile and re-ranking techniques are used mostly. A user profile is the collection of information about the user. From the user profile, the user preference can be obtained. Re-ranking technique represents the user preference results. The paper contains a review of various methods for building user profile and different techniques for re-ranking. A detailed discussion of different methods purpose, performance, features; related issues, advantage, and disadvantage are explained. The review of various methods that are discussed in this paper is to improve the level of personalization based on user preference.

Keywords: Personalization, User Profile, Re-ranking.

Introduction
Web search plays a major role for the need of information. The users are dependent on the information in internet that increases day by day. The web search provides huge amount of information to the user but sometimes it fails to give the result based on the user preference. To avoid such problems many research has been made on the personalized web search. The major solution to the problem based on the survey is building user profile, re-ranking technique. A survey of these solutions has been made in this paper, that which deals with the content based method, function based method, concept extraction, adaptive re-ranking, building user profile, PTY rank, Re-ranking algorithm, link-click algorithm etc.,The above all methods are used to identify the preference of the user and to rank the results that are obtained from the personalized web search. Thus an improved personalization can be obtained with the help of methods and algorithm of the survey.

Literature survey
2.1. BASED ON USER PROFILE AND USER CLICKS [1].
Web search engines involve a wide range of platform to serve the users with their individual needs. Personalization of web search is to retrieve the information from the user's interest. In this paper, the personalized web search is based on two methods user profile and user clicks. These methods are used to enrich the web based search and increase in the personalization level.

The personalization techniques are broadly classified into content based model, function based model and link based model. In this model the content and functions based methods are combined. The content based method is to represent user's interest and the function based method, uses the algorithm to obtain the weight of the page and ranks the result. User profile is built for content based and user clicks for function based method. Each method is developed as separate caliber and outputs from these two calibers are mapped to find effective personalized web search.

Ranking is done in sequential manner, in which data items in the web pages are matched with the two data models, that is user profile and click through data. Ranking is based on user profile and it is also based on the click through content only, if there is no match in the web page. The main advantage in this paper is that we can extract personalized web page and efficient user profile, makes the search engines performance level to increase.

2.2. USER PROFILING BASED RE-RANKING APPROACH FOR MOBILE SEARCH ENGINE [2].

This paper describes that search engines are used to retrieve the needed data from web. To avoid the ambiguity that is occurred in mobile web search due to display constraint. This paper denotes need of improvement in systems that retrieve the data and proposes a personalized user profiling based on re-ranking approach. The personalization is the process of providing the information and service for each user based on their preference and behavior. In this paper personalization is provided by mining, joining of user's content, and by picking the location from the web interaction that occurred previously.

The query is given by the user as an input to the web. The user profile is built from the search result, this user profile has three main tasks they are, it maintains the records that are registered by the user, it keep on tracks the query status, and the clicked URLs are recorded. Then the concept is extracted by using the click through, it also has three tasks they are, it examines the clicked URLs, related information's are obtained, duplications are removed and stop words. Then adaptive re-ranking technique is applied to compute the score for each document based on the similarity of the concept and document. Then the documents are ranked with their relevancy score.

The concept extraction and adaptive re-ranking are combined in the smartPMS. This algorithm is used to obtain the user's interest by their occurrence frequency. The frequencies are analyzed using two methods.ARR is the average rank of relevant documents. Average Precision is the average number of relevant record to the total number of relevant record. The advantage is that on using the implicit feedback, quality of the results are improved by combining the original web search result with the personalized result.

2.3. PERSONALIZED WEB SEARCH WITH USER'S PROFILE IN RE-RANKING [3].

This article proposes that the search engines are most important for retrieving the information from web. The author states that, though the engines use 'one size fits all' method, it is not suitable for each user's individually. The main purpose of this article is to get better personalized web search. An important input is provided by the user's profile, which is used in the performance of personalized web search. A user profile modeling is build based on the browsing history and the domain knowledge modeling is build from the web directory. From the user's browsing history and with the help of domain knowledge a framework is created for constructing the enhanced user profile. Based on the domain knowledge and the user profile, the system updates the process continuously in user profile and then the enhanced user profile is built. Thus enhanced user profile are mainly used to suggest the relevant pages to the user, and used to develop an improved personalized web search. Thus it is stated that the enhanced user profile is better than the user profile.

The author describes that this paper is a small start in personalized web search field. In future the author may create a framework in re-ranking the web pages that are retrieved from the search engine based on the user priorities, and a collaborate filter for personalized web search.

2.4. A PERSONALIZED RE-RANKING TECHNIQUE FOR ACADEMIC PAPER SEARCHING BASED ON USER PROFILE [4].

The researchers propose that the digital content usage on social web-based system is a part of human daily life, nowadays. An example of social web based system is social bookmarking for academic papers, which allows various researchers around the world to create own research commodities, sharing of research papers to others and can find the other researchers, who are working in the same research area. To improve the search results, the personalized re-ranking approach is utilized; by creating the personalized algorithm in the re-ranking method the user profiles are investigated. Personalized re-ranking technique is proposed for the academic paper searching. Thus the research papers investigates, which are obtained from search engines based on TTA indexer. A search function gets the data from web, based on the academic paper a keyword is given to index from search engine. An index relies on the TTA indexer; as a result first 10 relevant documents are displayed.

Then on the other side, a social tagging is the one, which is suitable to create a user profile. The user preference is obtained from the user profile, on comparing the result that is obtained from academic paper search and user profile, a personalized re-ranking is obtained in which ranking is adjusted. On combining the year of paper publication with personalized re-ranking technique, the PTYrank is obtained. The PTYrank provides the best performance than other ranking. The average score of NDCG between PTYrank and citeVlike varies in top ten ranks, this result is indicated

from the statistical testing results. As a future work, the researchers will focus on the academic papers on combining with other factors like posted time, priority, for proposing a improved personalized re-ranking technique.

2.5. RE-RANKING THE RESULTS BASED ON USER PROFILE [5].

This article states that, nowadays search engines have become a crucial gateway to large amount of data on the web. Because, usually the user will view only the first few pages on of the search results, ranking provides an critical bias to the user's view of the web and for retrieving the information. Two problems may occur mostly and they are, the top-ranked results may not have the relevant data that the user needs, pages that is used by various user frequently is displayed at the top which may not be useful for the user. Such problems can be solved only if the user's preference is understood well. This paper proposes a re-ranking method, to improve the quality of search results. The re-ranking method works based on the user profile data (USD). The re-ranking method fetches the top N results from search engine, with the help of semantic similarity between query and the candidate, the results are re-ranked. For each candidate, the ranking position is converted into the importance score by using the importance algorithm. Then the semantic similarity score is combined with the initial importance score and the new rank is obtained. Since re-ranking method works on the USD, the data that is obtained in the new rank is re-ranked according to the relevance of USD. Then semantic search method is used to remove the duplication of records and the effective result that is relevant to the user is obtained.

2.6. A NEW RANKING ALGORITHM FOR RANKING SEARCH RESULTS OF SEARCH ENGINE BASED ON PERSONALIZED USER PROFILE [6].

The important of user profile is discussed in this paper. This paper proposes that an improvement in search engine's performance with the help of exact user profile. By finding the information that are required for each individual user. This required information is obtained by giving the corresponding query, various queries gives different kinds of information. The information that is accurately matches the given query is identified and is evaluated. In search engine, the documents are ranked by the user profile for the given query. At first the user profiling strategies depends on positive preference later on it was dependent on both positive and negative preferences. The count of the click evaluation is existing; this paper proposes a ranking algorithm based on click count as well as link-click algorithm.

In user profiling strategy the count of click is evaluated and also the count of the link that is clicked for the given query is also evaluated. The pertinence among the given query and the information's that are obtained is analyzed, evaluated and then they are ranked. Thus the main goal of this article is to provide a more satisfied result to the user, based on link and click approach instead of the click count approach.

2.7. MODELING AND CONSTRUCTION OF A USER PROFILE ON THE ONTOLOGY'S STRUCTURE BIAS [7].

This article deals with the modeling and construction of user profile. Thus the author proposed that research information is not a recent activity, it is a rediscovered process, which is more required frequently. For instance, it is important to know how browsing of information is quick and efficient. The information browsing systems goal is to provide the appropriate information for the user according to the user's need and interest. Initially the information browsing system models the user, based on the profile and then the access channel is included to answer efficiently. Here the author introduces a model and construction of user profile based on the ontology's structure.

The ontology domain ODP is used as a reference for extracting the concept, which is the source of the semantic knowledge. This semantic of an ontology is connected with an 'is-a' relationship, which is an area of user's interest. The ODP data's are represented with two types of RDF files. The structure.rdf file has the ontology's tree structure and the content.rdf contains the list of web pages that which is associated with each category. These pages are the most relevant results for the selected query. The user profile is built with the same structure of content.rdf file, which is an ontology structure. In future the authors are planned to develop the system called diagnostic, which is used to access the Meta search engine.

2.8. A QUERY SUGGESTION METHOD COMBINING TF-IDF AND JACCARD CO-EFFICIENT FOR INTERACTIVE WEB SEARCHES [8].

This paper deals with query suggestion method for query expansion. Two ranked retrieval methods are combined together. The TF-IDF and jaccard coefficient is combined as Tfjac method. There are two experiments to evaluate the quality of query and to improve the relevance of returned document by Tfjac method and by performance measure respectively. The two experiments uses 80 test queries related to 8-topics. The Tfjac method is applied for the top10

results to find the duplicate words. The top results can be obtained by the user's feedback both implicitly and explicitly from the user. Ranking for the highly relevant query are ranked first. The relevant documents from Google are judged by 8 participants from university of esser and user's suggestion. The performance measure is applied for the top 10 ranked query suggestion. The mean reciprocal rank, mean average precision, precision at 10 and the discounted cumulated gain are the four performance measure. These evaluations depend on the queries that are used in the experiment and the judgments on the relevant query suggestion with the original queries. The main disadvantage in this paper, it is applicable only to regular user and the user preference is just assumed. As a future work, the research in improving the query suggestion by knowledge base and feedback of the user by click-through data and computational intelligence approach.

Conclusion
This paper describes the measure for user preference based search, classification of building user profile and re-ranking techniques. A detailed introduction of various user preference based search are outlined with the survey of various papers. As discussed before, structure of user profile and re-ranking are advantageous to obtain the user's interest. Probably to increase the accuracy of the results, various performance measures can be calculated.

Reference
1. S.Vanitha, "*A Personalized Web Search Based On User Profile and User Clicks*"   International Journal of Latest Research in Science and Technology, Volume 2, Issue 5: 2013.
2. DishaGupta and Nekita Chavhan, "*SmartPMS: User Profiling Based Re-ranking Approach for Mobile Search Engine*" International Journal of Advance Research in Computer Science and Management Studies ISSN: 2321-7782 (Online) Volume 2, Issue 4, 2014.
3. Panjarkar anmol, G,shete devakinandan.s, S.a.kahate, "*Personalized Web Search With User's Profile In Re-ranking*" International Journal of Science, Engineering and Technology ISSN: 2348-4098 Vol 2 Issue 8 Nov-Dec 2014.
4. Pijitra Jomsri, Siripun Sanguansintukul, Worasit Choochaiwattana, "*A Personalized Re-ranking Technique for Academic Paper Searching Based on User Profiles*" International Journal of Digital Content Technology and its Applications(JDCTA) Volume6, Number16, September 2012 doi:10.4156/jdcta.vol6.issue16.62.
5. Anuradha R. Kale, Prof. V.T. Gaikwad, Prof. H.N. Datir, "*Re-ranking the Results Based on user profile*" International Journal of Advancements in Research & Technology, Volume 2, Issue 6, June-2013 159 ISSN 2278-7763.
6. S.Geetha rani, "*A New Ranking Algorithm for Ranking Search Results of Search Engine based on Personalized User Profile*" International Journal of Computer Applications (0975 – 8887) Volume 74–No.15, July 2013.
7. Issam Abdelbaki1, El habib Ben lahmar2, Elhoussin Labriji3, "*Modeling and Construction of a user profile on the ontology's structure basis*" IJCSI International Journal of Computer Science Issues, Vol. 11, Issue 3, 2014.
8. Suthira Plansangket _, John Q Gan, "*A query suggestion method combining TF-IDF and Jaccard Coefficient for interactive web search*" in 2015, Vol. 4, No. 2, ISSN 1927-6974 E-ISSN 1927-6982.