The Trends and Directions of Wisdom and Semantic-based Search System

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Abstract— Peoples are able to share their knowledge and information through the online web. A large database is capable to handle global information through the web as well. Thus huge number of databases is grown due to store information. In this information handling cases, it is needed to search by using dedicated tools; broadly known as search engine. Though a number of search engines are on hand these days but recovering of authenticated information is quite complicated now. Furthermore, these existing search engines are not able to indicate the authenticated and doubtful retrieved information. On the other hand, to overcome these limitations in investigating systems to rescue authenticate data smartly; wisdom and semantic web search systems are performing main responsibility. An intensive literature survey on the search engine in wisdom and semantic search technologies are presented in this paper.

Keywords— data rescue; wisdom and semantic search, search systems.

I. INTRODUCTION

"Wisdom" is a word which contains the meaning of the thoughtful theory and function of awareness. It is a full of meaning accepting and awareness of persons, possessions, dealings or situations, consequential in the ability to apply perceptions, judgments and actions in keeping with this understanding. It often requires control of one's emotional reactions (the "passions") so that universal principles, reason and knowledge prevail to determine one's actions. Wisdom is also the comprehension of what is true coupled with optimum judgment as to action (wikipedia). The Wisdom web is a such kind of search system which will perform the authenticate data retrieval system from the authorized database. However, wisdom-based search systems are not revealed vastly in the current search systems.

Additional room of current web is Semantic Web which permits the precise data explained with such terminologies that can be easily understand by human and intelligent machines [1]. An updated W3C model is known as Resource Description Framework (RDF) is used in description of semantic web information. Human and computer could be collect available data from semantic web by using current web sites. Semantic web contains significant concept named ontology [2]. Web Ontology Languages (OWL) is another W3C model is used for ontology representation. Existing web systems cannot resolve the internal operational problem where semantic web can able to demonstrate efficiently data detection, computerization and incorporation. Semantic search systems are still in primary phase considering in research scale, whether the existing web search systems such as msn, yahoo, google etc are still control the web world. Maximum search systems are used keyword to the user input data search in the web page to retrieve. Nevertheless they use sophisticated algorithms to verify the real information searching from the pointless webs. It can able to reply according to the subject of the searching information. On the other hand, lack of their web information dependency, it fails to reply answer of the intellectual enquiries from client. Presenting a semi-precise in less delay is the key goal of this kind of search systems. Therefore most of the users are not satisfied using such kind of search systems. In addition, such systems are enable to retrieve and verify the information from a authenticated source. Thus, semantic web systems are able to be dealt with intelligent enquiries [3] and wisdom-based system be able to dealt with authenticated sources.

Trends and directions of the wisdom and semantic-based search systems are discussed and analyzed in this work.

II. STATE OF ART

Data search and rescue is from the web contains a lot of challenges for the basic data retrieval. For the different types of technologies using in different web search systems, the retrieved results may be vary with their expectation. Though this kind of search systems only retrieve the data from the web only, but currently few researcher are interested to develop semantic-based search systems. Existing web database got lack of semantics' systems that turn it in more difficulties to understand the client expectations. Three types of problem arise during the data surrounding on the web. First, how the search systems make a plan to search data on the web in a intelligent and useful manner, which is important to the user. Second, how the search systems can distinguish the search

results to the several web link. Graph-based query model can solve the second problem [4]. Third, do the search results authenticate? By producing semantic web annotation, it can solve the first stated problem [5-6]. Authenticated ontology research is still in early stage to solve the third problem. Semantic web layer working principle is shown in Fig. 1.
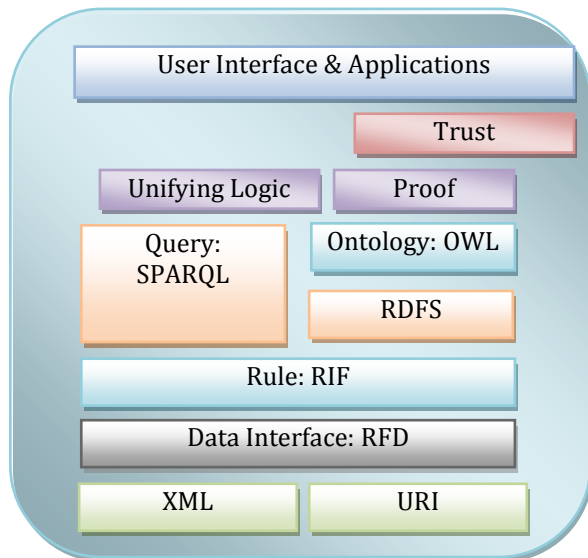

Fig. 1. Structure of Semantic Web

A. *Existing Web Limitations*

Lack of uses of semantic technology in existing World Wide Web causes search systems ambiguous search result. Therefore semantic and wisdom-based search systems can be defeat some problems; such as, lack of proper retrieved data representation structure, ambiguous problem in proper search results representation, lack of intelligent data distribution, etc.

One of the best semantic search engines is 'Hakia' can be able to perform structured search [7-8]. The strategy of this search is to depend on the meaning of the queries. All the features of these search systems are used of semantic technology, which can be produced digital object [7], [9].

III. WISDOM BASED SEARCH SYSTEMS

A. *Search Systems*

Few numbers of wisdom-based search systems are designed for several working situations and the techniques that understand are diverse. A semantic base search system is designed for perform automation search systems by combining digital ontology and description logic inference system [10]. This search system presents a recipe which is able to formulating the demands of wisdom search system and makes a solution of the efficiency of search system. To incorporate

ontology library with the client assumption by using Descriptive Logic Inference System [11] which enable the search system to accomplish the complete search for wisdom-base search system.

Only texts are used for searching purpose on a web by the maximum existing search systems. Some operation could be done by the representative for a client of the computer. Every search systems' representative helps to assist their every client of the system. To propose its own client and communicate with other representatives is the main objective for the representative of a client. This representative may be used for various external sources information. Actually this representative [12] is software made representative which is working in the server system. A precision augmentation search engine was developed for retrieval of information which tries to follow the techniques of wisdom-based search systems [13]. The default and assumption of the information was used in this technique. The default information was used for search information's' returns data that comprise distinctive comfortable data of a issue. Information assumption was used for search information's' returns data that comprise data close to expected enquiries. They have implemented this system using a limited database with a potential returns. The analyses were conducted using fuzzy and heuristic satisfaction function [14]. Another intellectual methods was used for authenticate search system depends on client inclination [15]. These systems are very helpful to different client data search system for quality assurance of the retrieve data. Another researchers are presumptuous a search system that perform general mechanism for wisdom-based search system. Results are verified in a practical method of following the supple managing of data consistent with intangible systems [16].

IV. SEMANTIC SEARCH SYSTEMS

Huge meaning of information from a search result using a special process is called semantic system. Semantic systems contain a series of code that are used to converse denotation, and this converse could be influence the behaviour. Future generation web has been driven by semantic web. An indication has been made of 'Semantic' that the significance of information on the web can be discovered not just by individuals, but also by computers. Then the Semantic Web was created to extend the web and make data easy to reuse everywhere. Semantic web is being developed to overcome the following main limitations of the existing Web [17]; such as, lack of proper data representation problem, weak data intercommunication represent the ambiguous information, lack of data transformation automation, not able to communicate huge number of user and not capable to capture the global format of the data.

At present numerous semantic search systems are executed in diverse running situation. This system may be keep using to comprehend the existing search systems. Semantic systems keep data of websites possessions which enable it to resolve compound enquiries, taking into consideration to the circumstance where websites possessions are beleaguered [18].

A huge contribution is done by semantic systems over the improvement of digital applications [19]. General query language is used in this system which proceeds semantically associated data remains to assure the clients' enquiry using XSEarch system. The presentation of the diverse methods and also the reminder and the accuracy had calculated experimentally. XSEarch efficiency is justified in terms of scalability by this experiment. Another proposed Semantic-based search systems was proposed to use an assumption replica to construct the contacts among records [20]. This system has two divisions: first is the crawler division. Here files are extracted from file system to produce two indices: the file rank metrics will ranked in index and the other one is the keyword index for recording the keywords. The second division is evolved with the query system using the keyword corresponding with the search item to identify the similar files. Then File Rank is used to rank the query files. A semantic search system was developed by Wang et al. to extract information from tables with the following steps: mark the table cells semantic relation, convert and store the table information into the database and using query language extract the objective data [21]. Avatar was developed by Kandogan et al. for the text search engine using the ontology [22]. Avatar consists of two functions, UIMA frame work and automatic transforming of the interpreting keywords. Fig. 2 shows the working flow of the AVATAR search engine.
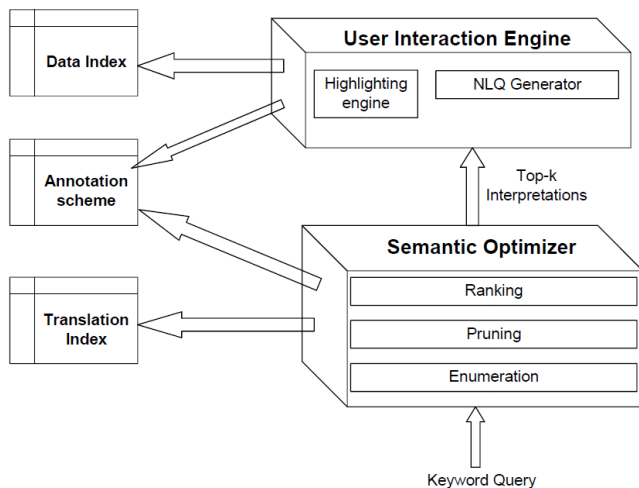

Fig. 2.   Working flow of AVATAR search engine [22]

V.   ONTOLOGY BASED SEARCH SYSTEMS

Ontology search system was developed by Maedche et al. [23]. An ontology registry is premeditated to accumulate the data about ontology in its architecture. In ontology registry, ontology search is operated in two conditions query by example is to query by term is to restrict the hyponyms of terms for search and restrict search fields. The search system is shown in Fig. 3 for stating the whole process of the search system.
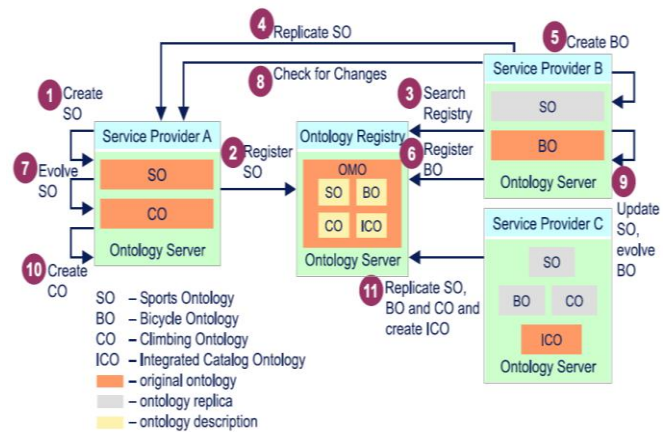

Fig. 3.   Working flow of Ontology Search Engine [23]

VI.   GENERAL CONCERNS

A review is conducted on the current and vibrant part in wisdom and semantic search systems. Some general issues are tinted in the existing semantic and wisdom search systems are done as follows:

A. Less accuracy and maximum reminder

Few of the semantic search systems are not able to demonstrate their important presentation for upgrading the accuracy. An experiment was done in a search system [24-25] which present the less accuracy and maximum reminder during returning the search result.

B. Client Identification Intention

Semantic search system contains client identification. A method was developed for investigating the demand provisions set the client identification intention, thus the search system activity will be more appropriate for the client.

C. Ambiguous returns

Client can be key in an ambiguous word which will result the wrong reply from the search system. For example, client type java but the system returns coffee bean etc.

D. Incorrect enquiries

Clients are sometimes plays are wrong role with the search system by key in the improper keywords. Thus the system will return irrelevant results.

E. Authenticated Information

The retrieved data from semantic or wisdom-based search systems are not claimed 100% precise correct data which are authenticated by real source.

VII.   CONCLUSIONS

A brief survey of the existing literature regarding wisdom and semantic web search system is discussed in this paper. A short review is done against those features correspondingly. Additionally, the concerns in the surveyed semantic and wisdom search systems are over and done with five viewpoints within the programmer and clients' awareness, techniques, less accuracy and maximum reminder, short of experiment and information authentication.

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