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Automatic Modifying Semantic Focused Crawler Based Knowledge Mining Services

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ABSTRACT

Onto the Internet, large amount of data is available we have to decide which data should be mined. There is numerous problems at the time of mining services over the internet i.e. Heterogeneity of data, Universality and Ambiguity. To overcome this drawback we have design automatic modifying semantic focussed crawler to mine the services. It will proficiently finding, arranging and indexing the data and it will increase the performance of the crawler. This structures assembles the automatic modifying semantic focused crawler with machine learning. Automatic modifying semantic focused crawler will solve the above three issues and Machine learning will increase the performance of the crawler and perform prediction on data. Here, also provides the implementation of the projects with snapshots.

KEYWORDS Knowledge mining; Word Net; AMSF crawler; machine learning; information discovery.

I. INTRODUCTION

Crawlers also known as spiders it is a tools for assembling Web content locally. Focused crawlers in particular, have been introduced for satisfying the need of domain expert or organizations to create and maintain subject-specific web portals or web document collections locally or for addressing complex information needs. Crawlers are given s starting set of web pages as their input, extract outgoing links appearing in the seed pages and determine what links to visit next based on certain criteria.

A significant number of people use Web search engines to formulate queries and review a list of suggested answers. Search engines are built from practical implementations of information retrieval techniques devised to handle large-scale Web collections. An increasing interest in the use of new specialized search engines has focused many efforts in the development of vertical search technologies.

Heterogeneity which provides diversity of services in the real world, there is number of schemes have been proposed to distribute the services from various perspectives, which includes ownership of service instruments, the effect of services[12], the nature of the service act, delivery, need and supply[13] and so on.

Universality in which service providers can be registered the service advertisements through various service registries which includes global business search engines, such as Business. com2 and Kompass3.

Equivocalness means amount of information present over the internet is described in natural language therefore it may be unclear. Moreover, online service information does not have a coherent format and standard, and differs from Web page to Web page [1].

In order to solve the above problems the framework of a Automatic Modifying Semantic Focused (AMSF) crawler, by mixing the technologies of semantic focused crawling and machine learning is design, whereby semantic focused crawling technology is used to resolve the issues of heterogeneity, universality and ambiguity of mining ploy information [2], and machine learning technology is used to nurture the high performance of crawling in the uncontrolled network environment. This crawler is designed with the motive of helping search engines to precisely and capable of search mining service information by semantically finding, arranging, and indexing information [3].

Also, here we are using machine learning , Machine learning traverse the study and construction of algorithms that can learn from and make prediction on data [4]. Such algorithm operate by building a model from example inputs in order to make data-driven prediction or decision, rather than following strictly static program instructions [5].

II PROBLEM DEFINITION

In order to address the three major issues-heterogeneity, ubiquity and ambiguity. We propose the framework of a novel automatic modifying semantic focused crawler, by combining the technologies of semantic focused crawling and machine learning. whereby semantic focused crawling technology is used to solve the issues of heterogeneity, ubiquity and ambiguity of mining service information and machine learning technology is useful to maintaining the high performance of crawling in the uncontrolled Web environment. Here, I proposed crawler is designed with the purpose of helping search engines to precisely and efficiently search mining service information by semantically discovering, formatting, and indexing information

III. LITERATURE SURVEY

We briefly introduce the fields of semantic focused crawling and critique previous work on ontology learning based focused crawling. H. Dong et al.[1] proposed a self adaptive semantic focused crawler for mining services information discovery. It is based on ontology learning approach. It uses the ontology as repository and generate the metadata [6].It has drawback regarding the performance of the self adaptive model did not completely meet expectations regarding the parameters of precision and recall. W. Wong et al.[7] proposed a crawler in which attention is towards the enhancing semantic focused crawling technologies by combining them with ontology learning technologies. It contains drawback ralating to the differentiation and dynamism. Dong et al.[8] proposed a crawler in which a large portion of the crawler in this space make utilization of ontology to speak to the information fundamentals themes and web archives.It has drawback regarding, the ontology based semantic focused crawler is that

the crawling performance crucially depends on the quality of ontologies. Zheng et al.[9] proposed a supervised ontology learning based focused crawler that aims to maintain the harvest rate of the crawler in the crawling process. The prime idea of this crawler is to construct an artificial neural network model to determine the relatedness during a web documents and an ontology.It does not have the function of classification. It cannot be used to resolve ontologies by enriching the vocabulary of ontologies. The supervised learning may not work within an uncontrolled network environment with unpredicted new terms [10].

IV. SYSTEM ARCHITECTURE

In this context, we will explain the system workflow of the automatic modifying semantic focused crawler step by step as shown in fig 1. The initial goals of this crawler include- to generate mining service metadata from web pages and to exactly associate between the semantically pertinent mining service concepts and mining service metadata with relatively low computing cost. In fig1. system architecture of the proposed automatic modifying semantic focused crawler is shown it is based on the machine learning approach [11].

The first step is preprocessing in which processing is done on word net, next step is crawling in which it will download the k web pages from internet for further used.

Next steps are term extraction and term processing , in which term will extract from web and perform the processing on that term, if term get matched with existing word net then metadata generation and association take place otherwise algorithm based string matching will done and generate the new term with help of machine learning and put that keyword and their related information in mining service word net base and mining service metadata base database for further used. If the algorithm based string matching will not performed then that term will be filtered out.

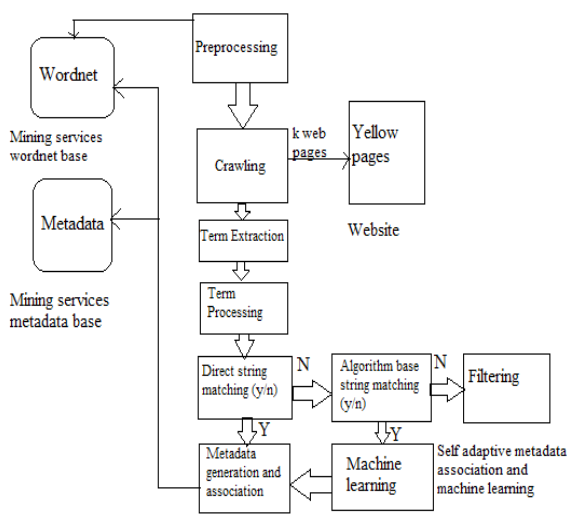

Fig 1: System architecture of the proposed automatic modifying semantic focused crawler

Machine Learning

It is a sub domain of computer science that evolved from the practice of pattern recognition and computational learning theory in artificial intelligence. It performed prediction on data by using some algorithm [14]. Also it focuses more on exploratory data analysis. Machine learning tasks include- unsupervised learning, supervised learning and reinforcement learning.

V IMPLEMENTATION

In this section, we have design a web crawler which is shown in fig 2.

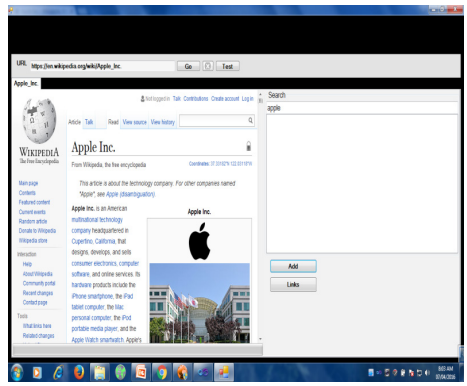

Fig 2: Screen shot of web crawler page

In this web crawler we have design two panel, one panel for to download the web information that will come when you enter the URL in URL box and other panel for to give the information about searched documents. Also there is close button is provided to close the tabs. Also processing is shown in fig 2. When we entered the URL.

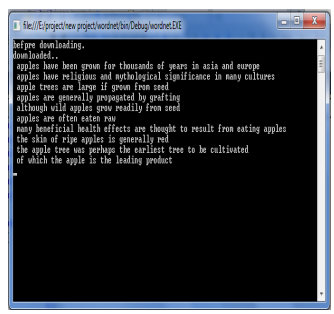

Fig 3. Screen shot of Retrieving data for word apple

In fig 3 data is retrieved for word apple from Wikipedia. It is done manually, we searched the service i.e. word apple manually first of all it will check with word net if suppose not found then that word is also check with our self adaptive dictionary and also it is not match then, then information for that services is searched from internet i.e. mainly from Wikipedia up to ten lines and other information from word net will filtered out [15].

VI. CONCLUSION

In this paper, we develop Automatic Modifying Semantic Focused Crawler to mined any kind of services. It based on real time system to avoid Heterogeneity, Universality and Ambiguity. Also in snapshot manually checking of services are shown in which filtering is done on irrelevant data and up to ten line will shown of any services that you want mine. Because of this performance of the crawler increase more than previous one. Further, in future research, it is important to enrich the vocabulary of mining service word net by surveying those unmatched but relevant data, in order to improve the performance of the AMSF crawler.

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