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Survey on Extracting the Web Data through Deep Web Interfaces

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ABSTRACT: Deep web is growing very fastly. So,there has been increased interest in techniques which help for efficiently locating deep-web interfaces. Nowadays, achieving wide coverage and high efficiency is a challenging issue because of the large quantity of web resources and the dynamic nature of deep web. A two-stage framework, namely SmartCrawler is used for efficient harvesting deep web interfaces. At first, SmartCrawlerperform site-based searching for center pages with the help of search engines, avoiding visiting a large number of pages. To get accurate results for a focused crawl, Smart Crawler ranks websites to arrange highly relevant ones for a given topic. At second, Smart Crawler accomplish fast in-site searching by exclusing most relevant links with an adaptive link-ranking. So design a link tree data structure to accomplish wider coverage for a website.Results on a set of representative domains show the agility and accuracy of crawler framework, which efficiently harvest deep-web interfaces from large-scale sites and achieves higher harvest rates than other crawlers.

KEYWORDS: Deep web, Two stage crawler, feature selection, ranking, adaptive learning

I. INTRODUCTION

Web Crawler is a system for downloading bulk of web pages. Web crawlers are used for a variety of purposes.Most prominently, they are one of the main components of web search engines, systems that assemble a corpus of web pages, index them, and allowusers to issue queries against the index and the web pages that match the queries. A related use is web archiving where large sets of web pages are periodically collected and archived for posterity. A third use is web data mining, where web pages areanalyzed for statistical properties, or where data analytics is performed onthem.Finally, web monitoring servicesallow their clients to submit standing queries, or triggers, and they continuously crawl the web and notify clients of pages that match those queries.Thedeep (or hidden) web refers to the contents lie behind searchable web interfaces that cannot be indexed by searching engines. An IDC report estimates that the total of all digital data created, replicated,and consumed will reach 6 zettabytes in 2014. A significant portion of thishuge amount of data is estimated to be stored as structured or relationaldata in web databases deep web makes 96 percent of all the content on theInternet, which is 500-550 times larger than the surface web. These datacontain a vast amount of valuable information and entities such as Infomine,Clusty, may be interested in building an index of the deepweb sources in a given domain. Because these entities cannotaccess the proprietary web indices of search engines (e.g., Google and Baidu) there is a need for an efficient.

II. RELATED WORK

1. "WHITE PAPER: THE DEEP WEB: SURFACING HIDDEN VALUE." JOURNAL OF ELECTRONIC PUBLISHING, 2001.[1]

From this paper we referred:

Traditional search engines create their indices by spidering or crawling surface Web pages. To be discovered, the page must be static and linked to other pages. Traditional search engines cannot "see" or retrieve content in the deep Web — those pages do not exist until they are created dynamically as the result

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of a specific search. Because traditional search engine crawlers cannot probe beneath the surface, the deep Web has heretofore been hidden. The deep Webisqualitatively different from the surface Web. Deep Web sources store their content in searchable databases that only produce results dynamically in response to a direct request. But a direct query is a "one at a time" laborious way to search. BrightPlanet's search technology automates the process of making dozens of direct queries simultaneously using multiple-thread technology and thus is the only search technology, so far, that is capable of identifying, retrieving, qualifying, classifying, and organizing both "deep" and "surface" content. If the most coveted commodity of the Information Age is indeed information, then the value of deep Web content is immeasurable. With this in mind, BrightPlanet has quantified the size and relevancy of the deep Web in a study based on data collected between March 13 and 30, 2000.

2. CRAWLING DEEP WEB ENTITY PAGES.[2]

From this paper we referred:

Deep-web crawl is concerned with the problem of surfacing hidden content behind search interfaces on the Web. While many deep-web sites maintain document-oriented textual content (e.g., Wikipedia, PubMed, Twitter, etc.), which has traditionally been the focus of the deep-web literature, it observe that a significant portion of deep-web sites, including almost all online shopping sites, curate structured entities as opposed to text documents. Although crawling such entity-oriented content is clearly useful for a variety of purposes, existing crawling techniques optimized for document oriented content are not best suited for entity-oriented sites. In this work, It describe a prototype system It has built that specializes in crawling entity-oriented deep-web sites. The techniques tailored to tackle important sub problems including query generation, empty page filtering and URL duplication in the specific context of entity oriented deep-web sites. These techniques are experimentally evaluated and shown to be effective.

3. ASSESSING RELEVANCE AND TRUST OF THE DEEP WEBSOURCES AND RESULTS BASED ON INTER-SOURCE AGREEMENT.[3]

From this paper we referred:

Deep web search engines face the formidable challenge of retrieving high-quality results from the vast collection of searchable databases. Deep web search is a two-step process of selecting the high-quality sources and ranking the results from the selected sources. Though there are existing methods for both the steps, they assess the relevance of the sources and the results using the query-result similarity. When applied to the deep web these methods have two deficiencies. First is that they are agnostic to the correctness (trustworthiness) of the results. Second, the query-based relevance does not consider the importance of the results and sources. These two considerations are essential for the deep web and open collections in general.Since a number of deep web sources provide answers to any query, so conjuncture that the agreements between these answers are helpful in assessing the importance and the trustworthiness of the sources and the results.

4. CRAWLING FOR DOMAINSPECIFICHIDDEN WEB RESOURCES.[4]

From this paper we referred:

The Hidden Web, the part of the Web that remains unavailable for standard crawlers, has become an important research topic during recent years. Its size is estimated to 400 to 500 times larger than that of the publicly index able Web (PIW). Furthermore, the information on the hidden Web is assumed to be more structured, because it is usually stored in databases. It describe a crawler which starting from the PIW finds entry points into the hidden Web. The crawler is domain-specific and is initialized with pre-classified documents and relevant keywords. So the approach is to automatic identification of Hidden Web resources among encountered HTML forms. It conduct a series of experiments using the top-level categories in the Google directory and report out analysis of the discovered Hidden Web resources.

5. CRAWLING THEHIDDEN WEB.[5]

From this paper we referred:

Current-day crawlers retrieve content only from the publicly index able Web, i.e., the set of Web pages reachable purely by following hypertext links, ignoring searchformsandpages that require authorization or prior registration. In particular, they ignore the tremendous amount of high quality content “hidden” behind search forms, in

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large searchable electronic databases. It address the problem of designing a crawler capable of extracting content from this hidden Web. It introduce a generic operational model of a hidden Web crawler and describe how this model is realized in HiWE (Hidden Web Exposer), a prototype crawler built at Stanford.Anew Layout-based Information Extraction Technique (LITE) and demonstrate its use in automatically extracting semantic information from search forms and response pages.Italso present results from experiments conducted to test and validate the techniques.

III. SYSTEM ARCHITECTURE

To efficiently and effectively discover deep web data sources, SmartCrawleris designed with two stage architecture, site locating and in-site exploring, as shown in Figure 1. The first site locating stage finds the most relevant site for a given topic, and then the second in-site exploring stage uncovers searchable forms from the site. Specifically, the site locating stage starts with a seed set of sites in a site database. Seeds sites are candidate sites given for SmartCrawlerto start crawling, which begins by following URLs from chosen seed sites to explore other pages and other domains. When the number of unvisited URLs in the database is less than a threshold during the crawling process, SmartCrawler performs ”reverse searching” of known deep web sites for center pages (highly ranked pages that have many links to other domains) and feeds these pages back to the site database. Site Frontier fetches homepage URLs from the site database, it going to rank the relevant information.

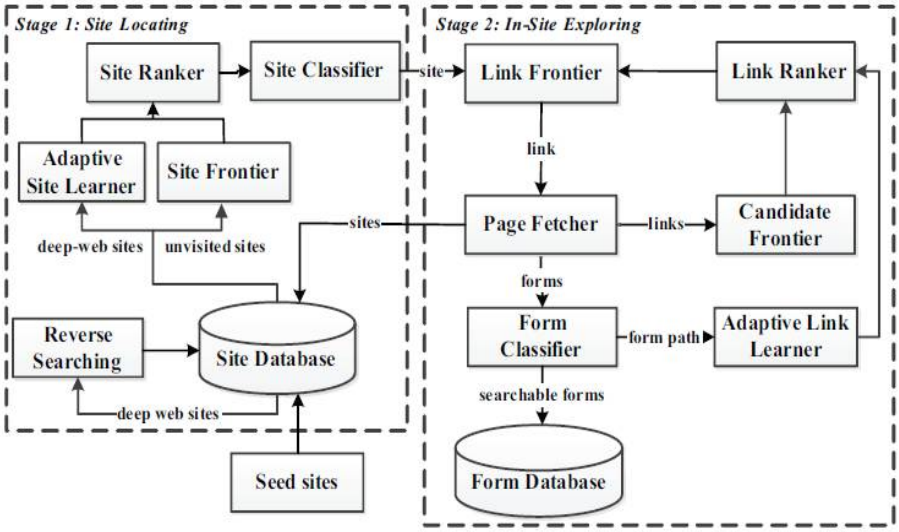

FIG NO 1. SYSTEM ARCHITECTURE: (TWO STAGE ARCHITECTURE)

SYSTEM ARCHITECTURE HAVE TWO STAGES:

1.SITE LOCATING
2.IN-SITE EXPLORING

1. SITE LOCATING :

Seed sites is the candidate sides given to the crawler for searching.Sitedatabase which is seed sites are start in site database.Reverse searching is a deep web search for centre pages which are known and where unvisited URLs in database is less than visited(threshold) ,crawler performs reverse searching.Site frontier which is fetches the homepage URLs from site database.Adaptive learner improve site learning and deep web sites are found by adaptively lerans from

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features.Site Ranker rank the pages which are fetches from frontier.Site Classifier classifies URLs into relevant or irrelevant according to homepage.

2. **IN-SITE EXPLORING** :

Link frontier having store the link sites.page fetcher is fetches the pages from link frontier.Form classifier done a searchable forms by corresponding pages are fetched.From Candidate frontier extracting the links in these pages.Then crawler ranks them from Link Ranker.Adaptive Link Leraner is adaptively improved of link ranker.And site's URLs are inserted into Site Database when crawler was create a new site.

IV. CONCLUSION

An effective harvesting framework for deep-web interfaces, a software is required namely Smart-Crawler.As it shown that it achieves both wide coverage for deep web interfaces and maintains highly efficient crawling. Smart Crawler is a focused crawler consisting of two stages: efficient site locating and balanced in-site exploring. Smart Crawler performs site-based locating by reversely searching the known deep web sites for center pages, which can effectively and many data sources for sparse domains. By ranking collected sites and by focusing the crawling on a topic, Smart Crawler achieves more accurate results.

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