International Academic Institute for Science and Technology

International Academic Journal of Science and Engineering
Vol.11, No.1, 2024, pp.317-321.

ISSN 2454-3896

International Academic Journal of Science and Engineering

www.iaiest.com

Smart Search Engine

Simaa Hassan Hadi Al-anbaki [a]

[a] *Researcher, Department Computer Center, University of Information Technology and Communications, Iraq.*
E-mail: cemaahassan2020@gmail.com

Abstract

Existing information retrieval systems, such search engines, must be improved due to the issue of having too much information on the web or in broad sectors. More consideration is needed. Integrated search tools that can manage searches and filters effectively and show relevant results The main sitting technology is bloated with ever-increasing volumes of data, much like the Internet. You'll have finished your keyword research and all of this information one day. Its capacity to deliver timely information that people are seeking. Search engines work to overcome the restrictions imposed by the conventional method of keyword research as a result. This study seeks to outline the primary issues that keyword search engines currently face in order to keep up with the rapid expansion of the web and to meet all user expectations in a timely manner. In the next section, it examines a number of models that are not dependent on keywords that have been created, created, or used by researchers and search engines, and rates those technologies in accordance with the aspects that each search engine prioritizes in order to deliver results.

Keywords: Computational Knowledge Engine, Semantic Web Search, Search Engine, Question-Answering.

DOI:10.71086/IAJSE/V11I1/IAJSE1137
Received: 04 May 2024/Revised: 20 May 2024/Accepted: 31 May 2024/Published: 05 June 2024

Introduction

One of the things that makes the internet successful is research. By making it possible to obtain material on any topic, search engines have profoundly transformed how people access and acquire knowledge. Within seconds, quickly and efficiently retrieve them (Alshuwaier et al., 2013; Sarhan, 2014). Yes, the average person does access the web using the small box that looks like a computer. Make a list of connections to the supplies they want by using a few words to help them organize their thoughts. It is impossible to recall how people were able to obtain any prior keyword search information on the Internet, and it is challenging to picture seeking or desiring any other information finding tool given how effective this way of information discovery has grown. Successful models frequently make it more difficult to imagine other lines of inquiry that might yield fresh and more effective solutions. It enables the individual to perform so a lot of information locating that it is tough to envision what, he unable to achieve what they wanted via the continuous search form words in order to assist the busy person to locate a better job quickly and effectively that matches his passion and skills (Naeem & Asif, 2011; Shroff, 2013; Li & Liu, 2021). If the person needed additional instructions to prove that expertise to land for a better career, how would the Google paradigm introduce that important information It is not included in the scope About the keyword Look for it? There are many different data kinds on the modern web, and search engines must offer the data in line with the user's search. As the need for giving users the ability to conduct exploration rather than keyword searches increases daily, search engines are making an effort to offer new dimensions or features to aid these alternative types of investigation and understanding creation. The web search engine typically follows the trend of semantic web browsing, which tries in order to increase search accuracy by understanding the intention of the searcher and the context in which phrases are used (Modi et al., 2011; Liang et al., 2019).

Keyword Search

Probably the most popular kind of web text search is this one. The majority of search engines employ keywords to retrieve and query text. exact definition of a keyword Any phrase on a website can serve as the source. In essence, A keyword is equivalent to an index. element which recognizes a specific record or written work. Absent the writer specifically specifies keywords, the search engine will choose them for a web document. Search engines follow the guidelines that their designers established for words that are often significant in a variety of documents because they are software and not logical humans. For instance, the page title frequently includes pertinent information about the subject of a file. Most search engines give more weight to the terms that are mentioned first of the document. The same holds true for words that appear numerous times in the essay. Some search engines include each word on every page in their index. Some just index a portion of the document (Goehler et al., 2006; Dou et al., 2001).

The Trouble of Keyword Research

It can be challenging to distinguish between unstructured information since words might have various meanings and keyword searches frequently provide irrelevant results (false positives). For instance, a keyword search for the term "AIDS" may return results for both "acquired immunodeficiency syndrome" and information regarding hearing organs.

Related Works

The vast amount of data on the internet makes it challenging for the current keyword-based search engines to provide the precise information we require at our fingertips. As consumers interact more with multimedia data like audio, video, and images and as the amount of information available for these forms of information rises daily, search engines will also offer searching using content as opposed to just text. In this context, "content" could, for instance, refer to any information that can be deduced from the image itself, such as the colors, shapes, or themes (Piximilar: Image). Chang et al ground breakings interactive web-based system (Sun, 2009). The idea has spatiotemporal characteristics and is based on the visual model. It is the first online video search engine to offer object-based self-indexing and spatiotemporal queries. The IBM researchers, who have also made significant contributions to Offering object-based self-indexing and spatiotemporal queries, it is the first online video search engine of its kind. is subject, came up with the idea for the QBIC system, which is based on querying picture and video content.

Search Type Classification

They are also known as topical or specialty search engines. A vertical search engine that focuses on a single type of web content. Enterprise search is the process of making content from diverse enterprise-type sources, such as databases and intranets, searchable for a particular audience. File systems, intranets, document management

systems, email, and databases are just a few of the sources that it indexes. Desktop search, which searches It's a user's personal computer data instead of the Internet, is the personal version of corporate search. These implements are intended for locate data stored on a user's PC, including web browsing history, email archives, text files, music files, photographs, and video. Large businesses now place a high focus on desktop search due to the possibility for improved security and productivity. Comparatively speaking search includes locating data without centralized control in networks of computers or nodes. While initially designed as a tool for sharing music, this kind of study is now applicable to any group of people who share the same interests or, in the case of mobile devices, are local residents.

search engines, and crawler-based engines for searching are all commonly referred to as "search engines" in the broadest sense. There are various methods these search engines get their entries: directories administered by people, mixed searches, and crawler-based searches.

Directories run by people: In a human-powered directory such as the Open Directory Project, listings must be submitted by humans. Human-led directories are subject-based search engines with a human component. Directories are less comprehensive than most search engines and do not contain the entire content of the web pages they connect to. For people with a broad research interest, these guides are helpful.

Advanced Keyword Searching in Search Engines

- **Content based Search**

Even for the most seasoned users, getting reliable information online is a challenging and time-consuming effort today. The point is the important thing, and a picture speaks a thousand words. Compared to textual language, pictures are more larger and have more sub-information. crowded video Compared to text or even individual images or graphics, the difficulty of information retrieval is double by streaming imagery for a variety of reasons. But content-based picture retrieval is crucial for many applications, much as many word retrieval strategies. Due to this, companies like IBM, Excalibur, and Virage have created helpful image search tools. Qatar Business Incubator's "Query by Image Content", The capacity of searching for still images and video archives based on qualities like shape, texture, graphics, and other features is offered by IBM Image Management System. Choose its pure image while utilizing word search with IBM friends. Instead of using inverted word frequency pointers, Excaliburs “neural network technology” use what is known as processing for adaptive pattern recognition (APRP). Recent partnerships with Yahoo and the acquisition of Interpix Software Corporation allowed Excalibur to expand multimedia search and retrieval to web servers. The static or dynamically linkable VIRAGE Image Search Engine Library ( ) offers simple features that are applicable to add photos to a collection that may be searched later on, and then query that collection. The Vigor Engine is precise and skillful in processing image attributes. Distribution, texture, color mode, and texture are the four main components of the Visage Photo Collection. TinEye Reverse Picture Search is an additional superb illustration of a content-based search engine. Search for images in reverse with TinEye. To find the location of a photo, you can upload it to TinEye. Whether or not the picture variants are present, their source, intended usage, or where to find higher-resolution versions. TinEye frequently searches the web for fresh images and encourages submissions from comprehensive online image archives. We can easily locate visually related photos by searching through large sets of photographs without utilizing keywords or other metadata using the Piximilar Visual Search API (Piximilar: Image). It can be used in conjunction with keywords to focus searches on very big groups.

- **Question-Answering (QA) System**

The QA method looks for answers to specific queries rather than searching for entire texts or the best matched fragments, as most information retrieval systems now do. Most question-answering systems incorporate methods from knowledge representation, information retrieval, and computational linguistics to get answers. A web search engine is the framework that only partially responds to queries. One crucial capability that search engines lack is the capacity to produce an answer to a question utilizing combinations of data from various sections of the database of knowledge. The search engine is currently attempting to go beyond the standard keyword-based search for an answering service. Yahoo Answers is a good illustration of this. It functions as a platform for open Q & A sessions. In order to create an online knowledge base, Yahoo! Answers also makes it simple to save and retrieve queries. Every subject, including parenting, science, and activities like dining out and travel, is intended to be covered by the website. Yahoo! The answers is a relatively new service, but as of February 2007, Another way to use the question-answer system is to deliver straight answers created by the system rather than responses from system members, as seen in other newly released systems like Microsoft's Live QnA and Amazon's Askville. Wolfram—Alpha is a nice illustration.

- **Semantic Web Search**

The semantic search engine tries to comprehend the search outcomes. It understands the organizing concepts of the content automatically. For instance, a semantic search apparatus may return documents that mention "vote," "campaign," and "ballot" even when the original page does not mention "election". A crucial stage in this process is to make the questions and the online content clear. This means that if you search for "jaguar," the search engine will be able to tell through natural language processing if you're seeking for an automobile or a large cat An apparatus for semantic search has the potential To optimize conventional online search, but it cannot take the role of it. Because they make up a large portion of queries, navigational inquiries cannot be replaced by semantic search. On the other side, research questions will gain from web semantic search. All four of the search engines below use semantic analysis to group and present data. Everyone can tell that they do not approach it in the same manner, though. General-purpose semantic search engine, in contrast to Google, for instance. Unlike instruments like SenseBot and Powerset, that looks for a structured text collection similar to Wikipedia (explained below). For some inquiries, Hakia generates resumes (usually well known queries and queries with little ambiguity). These act as starting points for a range of subject-related resources . A fast reference index with connections to the information on the page is included with each resume. The search engine tries to comprehend what is on the results pages. Web pages are examined to discover their fundamental semantic concepts for this purpose using text mining. The summary serves as a summary of the search topic by compiling the most significant and pertinent information from the search results. Along with a tag cloud that connects your search to other connected topics, it also offers a set of statements that are thought to identify or characterize your query. After each statement, there is a quotation from the source.

Conclusions

In this article, we've covered a number of search models, including exploratory search, semantic search (concept-based search), content-based search with open questions, and a special development in semantic search known as computational knowledge engines. Additionally, a variety of problems, restrictions, and challenges that now exist for keyword-based search engines have been investigated. Though hopes may be too high, semantic search seems to be a promising technological advancement. Despite the recent release of a few systems, there is still more work to be done and many unanswered questions. To better understand customers and their wants, more research must first be conducted on their questions. secondly, It will take more work to close the semantic gap, with a focus on concept-based research, so that people may get correct, pertinent information. Third, if you want search engines to retrieve content more precisely, you must standardize each multimedia description (audio, image, and video). Fourth, in order to accurately handle the vast number of high-dimensional features required by the online environment, large-scale and effective indexing and retrieval techniques must be built. Other significant issues to be resolved include guaranteeing better web coverage.

References

Sun, L. (2009). *Smart search engine for information retrieval* (Doctoral dissertation, Durham University).

Modi, A., Bhandari, A., Desai, K., & Shah, N. (2011, February). Smart search engine using artificial intelligence. *In Proceedings of the International Conference & Workshop on Emerging Trends in Technology (pp. 707-710).*

Liang, F., Qian, C., Hatcher, W. G., & Yu, W. (2019). Search engine for the internet of things: Lessons from web search, vision, and opportunities. *IEEE Access, 7,* 104673-104691.

Naeem, M. A., & Asif, N. (2011). A web smart space framework for intelligent search engines. *International Journal of Emerging Sciences, 1(1),* 1-10.

Shroff, G. (2013). *The Intelligent Web: Search, smart algorithms, and big data*. OUP Oxford.

Li, C., & Liu, K. (2021). Smart Search Engine: A Design and Test of Intelligent Search of News with Classification.

Alshuwaier, F. A., Almutairi, W. A., & Areshey, A. M. (2013, November). Smart search tools using named entity recognition. *In 2013 International Conference on Information Technology and Applications* (pp. 304-311). IEEE.

Sarhan, S. (2014). Smart voice search engine. International Journal of Computer Applications, 90(3).

Goehler, S., Cader, M., & Szu, H. (2006, April). Smart internet search engine through 6W. *In Independent Component Analyses, Wavelets, Unsupervised Smart Sensors, and Neural Networks IV (Vol. 6247, pp. 304-318). SPIE.*

Dou, W., Linn, R., & Yang, S. (2001). How smart are ‘smart banners’?. *Journal of Advertising Research, 41(4),* 31-43.