

International and Indian Search Engines in Engineering Discipline

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Abstract

This article introduces the various Indian and International search engines in detail with followed by engineering disciplines also in detail. The article goes on to summarize the mean characteristics that these engines should have in order to serve the complexity of scholarly information and the thoroughness of the scientific community. A brief history of these engines is given. Finally, the article looks at the challenges these services will face in the future as they try to establish themselves within the landscape of research evaluation and information retrieval.

Keywords: Search Engines, Search Strategy, Web Search Strategy

The Internet is a collection of electronic libraries containing millions of Information entities housed in thousands of computers world. It is not enough just to have information available in repository; rather it is necessary to have tools enabling us to retrieve the required information with the least possible amount of effort. Even the libraries in medieval times had rudimentary catalogues, or rather inventory lists. This stimulated the rapid growth of library collections, bibliographic etc.

One of the most serious problems faced by web users is to retrieve valuable information on the net. This has led to the improvement of the retrieval tools known as web search engines. Search engines and web directories are for the Internet catalogues, bibliographic and indexes are for libraries acting as tools for the organization and retrieval of the information resources. Search engines are widely used by web surfers in order to find information. They work by crawling an interface, normally via a web page, for interrogating that database. Search engines are used to describe their listings in three types i.e. Crawler-based search engines, Human-powered directories and Hybrid Search Engines.

• **Crawler-Based Search Engines**

Crawler-based search engines create their listings automatically, as they crawl or spider the web, those people search through what they have found. Any changes in the web pages will be taken care by the crawler-based search engines and eventually it will find these changes. The most common Crawler-based search engine is Goggle.

• **Human-Powered Directories**

A human-powered directory is open Directory, depends on humans for its listings. Changing of web pages has no effect on the listing. Things that are useful for improving a listing with a search engine have nothing to do with improving a listing in a directory. The only exception is that a good site, with good content, might be more likely to get reviewed for free than a poor site.

• **Hybrid Search Engines**

This search engine is combination of crawler-based results and human-powered listings. Usually, hybrid search engine will favor one type of listings over another. For instance. MSN Search is more likely to present human-powered listings from Look Smart. However, it does also present crawler-based results, especially for more obscure queries.

Web Search Strategies

Internet is a vast treasure of information containing hundreds and millions of web pages. Search engines come to the rescue of net users for finding information spreading out across the most widely used portions of the Web. Searching through an index involves a user in building a query and submits it through the search engine. The query can be quite simple, a single word at minimum. Building a more complex query requires the use of search skills and Boolean operators that allow refining and extending the terms of the search. In this context, Boolean operators play a significant role to refine the search strategy to get précised results. These Boolean commands must be used in uppercase and set the menu option on the home page or advanced search page to Boolean phrase while using Boolean commands. The Boolean operators most often used are:

- **OR:** This operator is used to join “OR” must in the pages or documents. Some search engines substitute the operator. “For the worked AND.
- **AND:** All the terms joined by “AND” MUST appear in the pages or documents. Some search engines substitute the operator “+” for the word AND
- **NOT:** This Boolean operator is used in order to require that a particular search term should not be present on web pages listed in results, which will exclude search. Some search engines substitute this operator “-“.
- **FOLLOWED BY:** The other term must directly follow one of the terms, in searching information on the net.
- **NEAR:** This command is used in order to specify how close terms should appear to each other between two terms.
- **QUOTATION MARKS:** The words between the quotation marks are treated as a phrase, and that phrase must be found within the document or file, as exactly s it appears.
- **NESTING ():** Nesting allows building complex queries. Nesting refers to use of parentheses for building complex queries. For instance the query- Management AND (Fayola OR Taylor)

The Tips for Searching Information on the Net is as follows:

- Analyze the search query carefully by identifying the relevant search terms and Boolean relations among the terms.
- Select the tools to be used Meta search engine, directory, general search engine.
- Translate the search terms into search statements of the selected engine.
- Use as many synonyms as possible-search engines use statistical retrieval methods and produce better results with more query words
- Avoid use of very common words (e.g., ‘computer’)
- Enter search terms in lower case, Use upper case to force exact match (e.g.’ Indian Air Force’, ‘IAF’)

Major Search Engines the on Web

The latest trend in search engine technology started by Northern Light, now defunct, and taken up by WuseNut, Teoma, and AltaVista Prisma, is automatic analysis and classification into categories of search results. Google does not have such automatic evaluation but does link to the catalogue in open Directory Project, which contains web pages already classified. Updated figures on the size of search engines show that Google holds its supreme positions, followed by All the Web were and Alta Vista. A test search showed that Google, the first choice for users, and All the Web have introduced a news service and developed new ways of limiting search to type of document (Flood, 2003). An attempt has been made to enlist search engines

of international scope with brief descriptions, followed by Indian search engines and subject gateways.

International Search Engines

- **AltaVista (<http://www.altavista.com/>)**

AltaVista is the premier search engine on the web. Currently, it is the largest, fastest, and most sophisticated search engine, index 10 billion words, 21 million Web pages, and full text index of over 12,000 news groups. This has the ability to choose to search the Web or the Usenet, with several display formats and excellent online help for search phrases.

- **Excite (<http://excite.com/>)**

Excite uses a combination of text and subject indices to search either by keyword or by concept. Concept searches find documents related to the idea of the search, and not just documents related to the idea of the search, and not just documents containing the search terms entered. It facilitates to search web documents, reviews, Usenet, newsgroups or classified with simple and advanced features.

- **WebCrawler (<http://www.webcrawler.com/>)**

WebCrawler, now sponsored by America On-Line, is an outstanding search engine very much in the mold of AltaVista. In fact, it has more power than AltaVista in implementing advanced features such as the proximity operators NEAR AND ADJ. It also includes a catalog of pre-classified subjects (directory services). It implements features of further searching based on pre-set search terms from the subject/catalogue, very much like Excite.

- **Lycos (<http://www.Lycos.com/>)**

Lycos provides short description, based on header information found on each page, thus preventing users from browsing through tons of irrelevant hits, now also includes pre-selected subject categories. Search results are very precise and it is also the only engine that provides search on sounds and pictures so far.

- **Info seek (<http://infoseek.go.com/>)**

Info seek was once the only Netscape default search engine. It is not the best available. Its virtues are speed and ease of use. Its defects are a lack of sophistication and teaser approach to showing the first 100 hits and offering to show more for pay. It is both a search engine, and a searchable subject catalog, with options to search Usenet groups and email addresses.

- **Yahoo (<http://www.yahoo.com/>)**

Yahoo is not a search engine, but strictly a hierarchically arranged subject index. It has developed over long time, with lots of editorial care, so the quality is very high. Browsing Yahoo is the best way to surf for good sites, especially for the incumbents of Internet.

- **The Internet Sleuth (<http://www.isleuth.com/>)**

The Internet Sleuth searches the contents of over 2,000 databases by keyword, just enter queries in convenient forms for a variety of popular search engines, and alternatively browse pre-selected categories. It indexes a large number of databases, and provides a front end from which they may be searched. Therefore, in the opening search box it is best to put as broad a single term as possible, and then from the resulting search windows(s) be more specific. Where the database being searched allows for Booleans or wildcards, the Sleuth gives search hints next to the appropriate search window. Even the Yahoo index can be searched from within the Internet Sleuth.

- **Magellan (<http://www.mckinley.com/>)**

Magellan is not actually a search engine, but rather an on-line guide to the Internet that contains directory of rated and reviewed sites, along with an index to lots of un-reviewed sites.

It is like Yahoo, only less inclusive with a more through rating system. One to four stars, rather than Yahoo's shaded to indicate a cool site; Magellan's strength is its system of reviews. It is not a good starting place to do a search, but is rather more useful when looking for sites, which are tried and true.

- **Google (<http://www.google.co.in>)**

Google is the most popular search engine, which came into existence in 1995. And with in no time it has become very Profile and Propitious. Overall it is a very easy and consistent site. It has indexed 1.5 billion pages, but because of the way Google uses link data, it can actually return listings for additional pages that it has never actually visited. The 1.5 billion pages also include some PDF files, Microsoft Office documents and others text-oriented material. The 1.5 billion figures do not include the Google Groups discussion posts of about 700 million posts or about 330 million image files. It supports the Boolean commands also, which must be in uppercase.

Indian engines

The following are the important search engines available in India.

- **Rediff:** It is one of the big Indian portal/search engines used quite widely for e-mail service along with locating news, gifts, stocks and other information.
- **Khoj:** Good Indian portal with articles on real estate and other business related information
- **Jadoo:** This is a good site information on India and plenty of good links and promoted as India's first engine
- **123india.com:** Another one of the big Indian search engines contains information on India, Chat E-mail.
- **Yahoo India:** The Indian version of the most popular search engine Yahoo
- **Web India:** A significant portal covering all about India.

Engineering Related Search Engines

These search Engines available on the Internet are fully devoted to Engineering Sciences which are also known as Subject Gateways, acting as a national and International gateway to engineering information and thereby helping the engineering scientists to meet their nascent and research information.

- EngNet is a directory engineering-related websites (<http://www.enginetglobal.com/>)
- Australian Virtual Engineering Library (AVEL) lists engineering resources (<http://www.avel.edu.au/>)
- The Ultimate Civil Engineering Directory is specific to civil engineering (<http://www.tenlinks.com/engineering/civil/index.htm>)
- EEVL searches the internet for engineering-related websites (<http://www.eevl.ac.uk/>)
- The Engineering Subject Gateway is a German-based site for engineering sources (<http://viftec.tib.uni-hannover.de/index.php.3?L=e>)
- WWW: Engineering is a directory including engineering, math and computing (<http://www.eevlacuk/wwwvl.html>)

The significance of Search Engines for searching information on the net is just like finding a needle in the haystack. Thus it can be concluded that, systematic knowledge of Search Engines and its search techniques will certainly provide a great boon to the Internet users in getting the desired information on the net without loss of time.

Conclusion

Scientists and engineers need quick and timely electronic access to a variety of information resources to support their research. This search engines for science/technology/engineering collects useful web-based resources that will facilitate searches for professional materials in these subjects. The aim is to offer a starting point for the experienced librarian and the engineer to discover resources beyond fee-based databases and journals. It is important to remember that Google and similar search engines crawl the surface web only and by using specialized search engines, one can discover authoritative information hidden deeply within the web.

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