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Slaying the Search Engine Dragon: Smarter, More Efficient Internet Searches

Zanada Joyner
University of Georgia School of Law Library, ztjoyner@uga.edu

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Zanada Joyner

Alexander Campbell King Law Library

University of Georgia School of Law

Athens, Georgia

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I. Introduction

Most people would say that they are good at surfing the internet. Privately many people admit that they might not be efficiently searching. Although we have grown accustom to having information readily available via the Internet; using different search engines and search strategies can lead to results that vary considerably. For most of us, the desired information is usually retrieved in the first few entries when performing a basic Google search. When you are trying to retrieve information needed to conduct business negotiations or prepare for a client meeting, you want to find the best results with the least amount of time spent.

This paper discusses several search engines, including Google, as well as sites designed to provide answers to questions. In addition, this paper will describe a variety of handy tools, techniques and strategies to efficiently search the web.

II. Tools for Battle: Common Search Engines

Search engines vary in size, frequency of updates and search capabilities. Using a search engine consists of entering keywords that are run against a database. Too often we become frustrated if we cannot find the desired information on our first Google search. Skilled researchers are familiar with several search engines and know that due to the uniqueness of these databases the results tend to vary from site to site. Google still leads the United States search marketplace with a 64.5 percent share according to comScore’s analysis of web searching activity. In March 2015, Bing (Microsoft) hit 20 percent market share in the United States. Databases are continually changing in an attempt to provide researchers with the most relevant
results and savvy researchers are taking notice. The following search engines are worth keeping in mind.

Google
www.google.com

Google still leads the U.S. search marketplace and for most of us the term “google” has come to be synonymous with searching the web. Google says its mission is to organize the world’s information and make it universally accessible and useful. Best known for the “PageRank” algorithm, Google returns a relevant list of results that are arranged in order of importance. This is not the only algorithm used by Google to order results but, this was the first and best known algorithm.

Bing
www.bing.com

Microsoft’s search engine, Bing, while still a distant second to Google in the search engine market, is gaining in popularity.\(^1\) As of March 2015, Bing now commands a 20 percent market share in U.S. web traffic. The popularity of Bing can likely be attributed to Microsoft’s aggressive “Pepsi Challenge”-like 2012 marketing campaign “Bing it On.”\(^2\) Although Microsoft claimed to be the preferred search engine in side-by-side comparisons with Google among internet searchers; Americans still prefer Google when searching online.

Bing is a good alternative to Google and worth exploring. PC World magazine conducted a showdown between these two search engines in April 2012. While neither outright won the competition, the tests showed that sometimes “binging it” might be a better way to go.\(^3\)

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\(^3\) [http://www.pcworld.com/article/254405/bing_versus_google_search_engine_showdown.html](http://www.pcworld.com/article/254405/bing_versus_google_search_engine_showdown.html)
instance, according to PC Magazine the Bing search excelled at locating specifics on large websites and thus delivering the right results in less time.

Yahoo!
www.yahoo.com

Yahoo!’s rank in the search engine market grew from 2014 to 2015. According to Forbes magazine, the market share shift is the result of Yahoo, whose search is powered by Microsoft Bing, replacing Google as the default search engine on Firefox Web browsers in the U.S. starting in November 2015. Since 2004, Google had been the default for Firefox, whose share of browser users has fallen precipitously in the years after Google introduced its own Chrome browser in 2008. While the move by Mozilla has definitely changed the search engine landscape, researchers predict that many Firefox users will switch back to Google over time.

Persistent antitrust concerns are Google’s biggest problem. For many the dominance that Google commands over the world’s information is troubling. Google is undergoing scrutiny now in Europe where “their 90% market share activity has made them the target of antitrust prosecution.”

Alternatives to Google searching are continually adding to their market share. Some speculate that Apple may replace Google on its Safari browser when its contract expires next year. Such a move by Apple could further open the door for alternative search engines to take market share away from Google.

DuckDuckGo
www.duckduckgo.com

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5 http://www.huffingtonpost.com/dan-rockmore/too-big-to-search_b_7211898.html
This search engine has gained popularity because it offers far better privacy than Google or other big name engines. DuckDuckGo aggregates results from Bing, Yandex and other search engines and displays them privately to the user. This small start-up is receiving a good bit of attention as a viable alternative to Google, especially for searchers who do not want the search engine to save their usernames, email addresses, social media logins and other identifying information.\(^6\) DuckDuckGo promises that it does not store searches nor does it transmit information to third parties.

The DuckDuckGo search interface is simple and clean. For image, video and map searching use the dropdown menu to the right of the DuckDuckGo search box to pass a search query through to other sites, including Bing, Google and YouTube (note that this could negate the privacy-related advantages of the search engine). Use the dropdown box to sort the search results by date, category or alphabetically. Another attractive feature is the Voice Search that allows searchers to search by speaking into a microphone.

Yandex
www.yandex.com

Yandex is a Russian Internet company that operates the largest search engine in Russia and is the fourth largest search engine in the World. According to Yandex the “happiness of the user” is of crucial importance.\(^7\) Yandex provides its users with lots of services such as images, video, mail, maps, metrica (similar to Google Analytics), mobile apps, cloud storage, translate, and a browser. Because Yandex offers such a broad expanse of services it is easily a very good alternative to Google.

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\(^6\) [http://thenextweb.com/opinion/2015/07/03/why-i-switched-from-google-to-duckduckgo-its-all-about-the-bangs/#gref]

\(^7\) [https://yandex.com/company/general_info/yandex_today/]
III. More Tools of Trade: Less Common Search Engines

Rather than searching an index of “crawled” web pages, sites like Wolfram Alpha, Ask, and Quora attempt to answer questions. The question/answer format is especially useful for researchers who have a specific query or may want to connect with experts in a given field.

Wolfram Alpha
www.wolframalpha.com

Wolfram Alpha is a question and answer site where the answers are computer generated. When the site debuted the developer claimed that the website was not a search engine but a synthesis of the world’s knowledge in a computable form. Users submit a textual question in the input box which is invitingly labeled “enter what you want to calculate or know about.” The results box includes a statement of how the system interpreted the question. In other words, Google looks externally to find what it thinks you want Wolfram looks within crunching facts the same way a computer crunches number. The results also suggest additional queries that the system determines may be relevant. As a result the website often returns disappointing results and error messages “Wolfram Alpha doesn’t understand your query” to the typical researcher. While the website does have an app available both for Android and iPhone, most internet researchers will not find the website useful to ordinary searching.

Ask
www.ask.com

Formerly known as AskJeeves this website provides answers to queries by looking at several search engines. It will group the results by engine as well as by the sites that seem to provide answers closer to your question. Ask.com features support for search based on plain

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English (natural language) as well as traditional keyword searching. To its credit, Ask.com aims to be more intuitive and user-friendly than other search engines. Another important feature of Ask.com is that the website generates SmartAnswers at the top of the results list. SmartAnswers chosen by the developers are considered related and authoritative. SmartAnswers provide key information, quickly and intuitively.

Quora
www.quora.com

Quora is a question and answer site founded in 2009 by two former Facebook employees. The questions are posed, answered, edited and organized by its community of users. The advantage of this question/answer site is the community of reputable experts. The answers are rated by readers, who also rate the questions by indicating interest in an answer. Quora covers a wide variety of topics and interests. The site is free to use but registration is required. There are apps available for both iPhone and Android devices.

IV. Honing Your Skill: Crafting Advanced Searching Queries

The results you get from a web search are only as good as your query. Spend some time in the beginning of your search crafting a precise search strategy. Failure to do this might result in meandering through page after page of irrelevant results. Following a few conventions and learning some key symbols to include in the string of characters entered into the search box can greatly improve your results. Many of these strategies will work across several search engines, but look for links to “search help” or “search tools” or “advanced searching tips” to get the exact symbols that operate on the search engine:
- Google: https://support.google.com/websearch links to several search help pages within Google, including Search Operators, Image Search and Voice Search.

- Bing: http://help.bing.microsoft.com provides searching tips and techniques for customizing the Bing bar.

- Yahoo: https://help.yahoo.com/kb/search has assistance with many Yahoo services. There is a link to an article that offers tips for improving the search query https://help.yahoo.com/kb/search/improve-yahoo-search-results-sln2242.html?impressions=true

- DuckDuckGo: https://duck.co/help/results/syntax gives information for fine tuning your search queries.

- Yandex: https://yandex.com/support/search/how-to-search/search-operators.xml explains how operators work to create a highly specific search query.

The following tips and tricks focus on Google due to its ubiquitous use; however, a few different conventions for Bing, Yahoo, and Yandex are also noted.

**Use of quotation marks**

Surrounding a phrase with quotation marks is the most common way to accomplish exact phrase searching. The use of quotation marks works in Google, Yahoo, Bing, Yandex and DuckDuckGo.

**Use of AND operator**
Use AND (uppercase) when you want to make sure your results contain two terms. If you use AND in your query, the search engine will only retrieve documents that contain both words.

**Search for synonyms using ~**

Google searches for synonyms, but inserting the tilde symbol ~ directly in front of a word will search for even more synonyms. It also searches for the term with alternative endings. The tilde operator works best when applied to general terms and terms with many synonyms. For example, ~food will also retrieve pages including “nutrition” and “restaurant.”

**Find definitions**

Google will return the definition of a specified word. Type “define:” followed by the word you want defined and Google will return a list of websites providing definition. In Yandex type “!!” followed by the word you would like defined.

**Exclude words from your results**

Use of the minus sign directly in front of words you do not want to appear in your results will work with Google, Bing and Yahoo.

**Use of the Advanced Search Box**

Searchers can use the search engine’s “advanced search” function to build a search query incorporating many of the tools mentioned. Google no longer links to its advanced search from the home page. Instead, type “Google Advanced Search” in the search box and the page will be retrieved. At present, use the following to access the advanced search:
• Yahoo – either search for “advanced search” or navigate to
  http://us.yhs4.search.yahoo.com/web/advanced

• Yandex – either search for “advanced search” or navigate to
  https://www.yandex.com/search/advanced

V. Ready for Battle: Google Enhancements and Services

Finally this section discusses just a few of the numerous useful options and tools provided by
Google (similar enhancements are found in Bing and other search engines). Google’s “even
more” page at https://www.google.com/intl/en/about/products/ lists many different products,
from specialized search tools to social networking to collaboration tools and many more.

**Google Scholar**

scholar.google.com

Google Scholar provides access to scholarly articles, papers, books, theses, and abstracts
through a full-text search of research materials from academic presses, university and scholarly
organizations, preprint repositories, and professional societies. Scholar allows you to search a
wide breath of subject areas and materials in a single search. The results are ranked for not only
appearance of your search term but, more importantly for the scholarliness of the publication
(number of times cited in other works).

In addition to scholarly works, Google Scholar allows you to search an extensive
database of state and federal cases. Check the option for “Case law” on the left navigation bar to
find the cases relevant to your search term. From the navigation bar you can choose to limit your
results to specific courts. Google Scholar also serves as a citatory by listing in the sidebar the
cases that subsequently cite the displayed case.
Google’s inclusion of the following disclaimer on their About page

Legal opinions in Google Scholar are provided for informational purposes only and should not be relied on as a substitute for legal advice from a licensed lawyer. Google does not warrant that the information is complete or accurate.

leads to a similar disclaimer here: do not assume that Scholar results include all relevant case law on a legal issue. This search engine should serve only to give the researcher an idea of the legal issue or help to locate a specific case.

**Google Translate**
translate.google.com

Like many translation websites, Google Translate allows you to enter text or a webpage URL requiring translation. The site will automatically translate between over 50 languages. Most recently Google has launched a free mobile applications that can translate via photo, voice and real-time video. As with any automated translator, this tool is useful for ascertaining the basic idea but, should not be relied upon for sophisticated translation.

**Google Images**
images.google.com

Google Images is a search service that allows users to search the web for image content. The keywords for the image search are based on the filename of the image, the link text pointing to the image and adjacent text to the image.\(^{10}\) According to Google this search was created initially in 2000 when users wanted to view Jennifer Lopez in her Versace dress but were limited to simple pages of text with links. Developers at Google went to work improving their search engine to display images to answer search queries.

\(^{10}\) http://www.abstract-thoughts.com/tech/google-search-by-images-explained-and-analysed
More recently Google began offering reverse image searches. Unlike traditional image retrieval, you do not need to type keywords into the search box. Instead, users can drag and drop an image into the search box, upload an image, copy and paste the URL for an image or simply right-click an image on the web. The precision of the search is higher for more popular images.