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Examples to Demonstrate Needlebot's Advanced Search Capabilities using the Internet Subset Database



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Introduction

Needlebot, Inc. is a Princeton, New Jersey-based software-company that has developed a proprietary, patent-pending technology for dramatically improving Enterprise document search capabilities by abstracting the content of a document into a "mathematical fingerprint." The "mathematical fingerprint" of a document is much more easily understood and manipulated by computers than conventional language-based search approaches, allowing Needlebot to demonstrate superior search results and provide users with a new and attractive menu of search features, several of which were previously unavailable.

The following test database was used for the examples shown in this document.

• An **Internet Subset database** - this database contains approximately 40,000 pre-fingerprinted web pages and was created by Needlebot to demonstrate potential Internet search engines applications.

The examples described in this document are intended to demonstrate the benefits of some of Needlebot's unique search features, described below, with a particular emphasis on our advanced **Similar Pages** tool which could be easily integrated into any existing Enterprise search engine to provide users with a unique and extremely powerful conceptual search capability.

Needlebot's advanced Similar Pages search tool has two distinct search capabilities:

- More like this <u>with</u> keywords
 - This option retrieves documents which contain the chosen keyword and are the most relevant to the selected document based upon their conceptual similarity and displays them in order of this relevance.
- More like this <u>without</u> keywords
 - This option retrieves documents which are the most relevant to the selected document based upon their conceptual similarity, whether or not they contain the selected keywords, and displays them in order of this relevance.

Needlebot's **Similar Pages** tool, based on content analysis, works much more effectively than other similar pages found in other online search engines, retrieving very relevant hits to the users' needs.

Needlebot's **User Profiles** search tool also provides a powerful search personalization technology that discerns an individual's interests and provide superior search results that are highly relevant to each user. Each user's profile evolves over time as interests in text retrieval change. In addition, multiple past profiles can be stored by the user and employed in future searches.

Finally, Needlebot's **Concept-based** search tool, (paragraph search tool), allows the user to search for concepts rather than keywords by pasting a paragraph as opposed to keywords into the search window. Results are then ordered based upon the level of overlap of their fingerprints when compared to that of the search paragraph. This unique approach, once fully developed, will avoid many of the limitations associated with current keyword-based search methods.

Commonly, users try several creative keyword combinations to retrieve results most relevant to their needs. This practice is obviously successful, yet can be very time consuming, particularly since some





people appear to be more skilled than others in selecting the correct keywords to relay their needs to the search engine.

It is our intention, in the rest of this document, to demonstrate that these three features, implemented using Needlebot's patent-pending technology, provide a quantum leap to help users relay their intentions to the Search Engine and enable it to retrieve relevant hits very efficiently. We are also currently working on the implementation of other enhanced features that would provide a significant improvement in the user's enterprise and online search experience and also allow the delivery of highly targeted advertisements.

In most of the examples shown in this document, we usually focus on the top 5 search results returned for each query, partly because of space constraints but also because recent research* indicates that the majority of search interactions occur within the first five hits. (The top hit alone accounts for over 40% of all search interactions and the top five hits combined account for 74% of all click-throughs).

* Based on 36.4 million search queries with 19.4 million click-throughs using AOL-data.tgx files, (March-May 2006).





Examples using the Internet Subset Database



Original Results from Needlebot's Keyword Search Tool

Example 1: Example of disambiguation using three distinct user profiles

When an ambiguous keyword, such as "Eagles" is used, traditional keyword-based search engines typically display a mixture of relevant and irrelevant hits as shown below

Database: Internet Subset Keywords Searched: Eagles

1 - high rank: 196 - keyword rank: 1 <u>Eagles Official Website</u> Includes news and tour dates. http://eaglesband.com/ more like this <u>with</u> or <u>without</u> keywords

2 - high rank: 197 - keyword rank: 2 <u>Eagles - Wikipedia, the free encyclopedia</u> The Eagles are an American rock band that was formed in Los Angeles, California in the early 1970s. With five number-one singles and four number-one albums, ... http://en.wikipedia.org/wiki/The_Eagles more like this <u>with</u> or <u>without</u> keywords

3 - high rank: 198 - keyword rank: 3 <u>Eagle - Wikipedia, the free encyclopedia</u> Eagles are large birds of prey which inhabit mainly the Old World, with only two species (the Bald Eagle and Golden Eagle) found in North America north of ... http://en.wikipedia.org/wiki/Eagle more like this with or without keywords

4 - high rank: 199 - keyword rank: 4 <u>L&M's Eagles Fastlane--Eagles News Since 1996</u> The Fastlane is the most extensive Eagles fan community on the Internet. Daily updates keep you abreast of tours and news. We've got thousands of photos and ... http://www.eaglesfans.com/ more like this <u>with</u> or <u>without</u> keywords

5 - high rank: 200 - keyword rank: 5 <u>American Bald Eagle Information</u> In-depth bald eagle information, photos, general facts sheet, viewing directory, status of bald eagle, screen savers, greeting cards, and stories as well as ... http://www.baldeagleinfo.com/ more like this with or without keywords

6 - high rank: 201 - keyword rank: 6 <u>American Bald Eagle Facts and Information</u> Tennessee group dedicated to the preservation and protection of the Bald Eagle.http://www.eagles.org/ more like this <u>with</u> or <u>without</u> keywords

7 - high rank: 202 - keyword rank: 7 <u>Fraternal Order of Eagles International Website</u> Fraternal Order of Eagles International Website - FOE - Home of the Grand Aerie, Grand Auxiliary and Eagles in over 1700 cities across the United States and ... http://www.foe.com/ more like this <u>with</u> or <u>without</u> keywords

8 - high rank: 203 - keyword rank: 8 NATURE: Eagles



Read the story of an eagle that was long believed to have vanished from the planet. Find more eagle facts, both in print and on the Web. ... http://www.pbs.org/wnet/nature/eagles/ more like this with or without keywords

9 - high rank: 204 - keyword rank: 9 <u>Philadelphia Eagles News, Scores, Schedule, Stats - Yahoo! Sports</u> Comprehensive and up-to-date Philadelphia Eagles news, scores, schedule, stats and roster. http://sports.yahoo.com/nfl/teams/phi more like this <u>with</u> or <u>without</u> keywords

10 - high rank: 205 - keyword rank: 10 <u>Philadelphia Eagles</u> Eagles news via the Philadelphia Inquirer and Daily News. http://www.philly.com/philly/sports/eagles/ more like this <u>with</u> or <u>without</u> keywords

Note: When a simple keyword search was performed for the keyword "**Eagles**" the top page of results contained hits related to many different topics such as:

- The Philadelphia Eagles: (see hits #9 & 10 on page 33)
- The eagle bird of prey: (see hits #3, 5, 7, & 8 on page 32)
- The 70's rock band called the Eagles: (see hits #1, 2, & 4 on page 32)

Needlebot's User Profiles (personalized search tool) can be used to disambiguate the keyword "**Eagles**" by selecting the appropriate User Profile that reflects the user's current interests. (See pages 34-35 for results when the "**Music Fan**" profile is selected).



Disambiguated Results using Needlebot's User Profiles Tool (User Profile: Music fan)

Example 1a: User seeks URL's related to the Eagles rock band

Needlebot's User Profiles deliver personalized search results that reflect the user's current interests. Hence, when the Music Fan profile is selected, the search term Eagles is disambiguated to display only those URL's related to the 70's rock band at the top of the search results list

Database: Internet Subset Keywords Searched: Eagles Selected User Profile: Music Fan

1 - high rank: 197 - keyword rank: 2 Eagles - Wikipedia, the free encyclopedia The Eagles are an American rock band that was formed in Los Angeles, California in the early 1970s. With five number-one singles and four number-one albums, ... http://en.wikipedia.org/wiki/The_Eagles more like this with or without keywords add to profile Music Fan

2 - high rank: 8 - keyword rank: 134 Eagles Discography and Songs at CD Universe Low prices on Eagles discography of music at CD Universe, with top rated service, Eagles songs, discography, biography, cover art pictures, sound samples, ... http://www.cduniverse.com/search/xx/music/artist/Eagles/a/Eagles.htm more like this with or without keywords add to profile Music Fan

3 - high rank: 80 - keyword rank: 178 Eagles Lyrics Guitar Tabs Bios Pics and More My Eagles page has images, midi, chat, forum, wav, lyrics, bio, guitar tabs, sound clips and links to other Eagles pages. http://www.mattsmusicpage.com/neagles.htm more like this with or without keywords add to profile Music Fan

4 - high rank: 217 - keyword rank: 34 Eagles < Rock and Pop in the Yahoo! Directory Yahoo! reviewed these sites and found them related to Rock and Pop > Eagles. http://dir.yahoo.com/Entertainment/music/artists/by_genre/rock_and_pop/eagles/ more like this with or without keywords add to profile Music Fan

5 - high rank: 206 - keyword rank: 11 The Eagles The Eagles chronicled America in the high-flying Seventies, a time of rapidly changing social mores leading up to what they called "life in the fast lane. ... http://www.rockhall.com/inductee/the-eagles more like this with or without keywords add to profile Music Fan

6 - high rank: 51 - keyword rank: 77 The Rave/Eagles Club - Milwaukee, WI [Milwaukee concerts, Internet ... Multiple venues in one entertainment complex, with up to 4 stages of live national entertainment can be seen in one night. Includes a calendar and contests. http://www.therave.com/ more like this with or without keywords add to profile Music Fan

7 - high rank: 218 - keyword rank: 22 VH1.com : The Eagles : Artist Main



Get the complete artist information on The Eagles, including new videos, albums, song clips, ringtones, photo galleries, news, bios, message boards, ... http://www.vhi.com/artists/az/eagles/artist.jhtml more like this with or without keywords add to profile Music Fan

8 - high rank: 227 - keyword rank: 33 <u>Amazon.com: Eagles : The Very Best of: Music: Eagles</u> Amazon.com: Eagles : The Very Best of: Music: Eagles by Eagles. http://www.amazon.com/Eagles-Very-Best/dp/BooooCD5FR more like this with or without keywords add to profile Music Fan

9 - high rank: 123 - keyword rank: 115 <u>Rolling Stone : The Eagles</u> Rolling Stone gives you total The Eagles coverage including free music, videos, photos, music news and exclusive Rolling Stone articles. http://www.rollingstone.com/artists/theeagles more like this <u>with</u> or <u>without</u> keywords <u>add to profile Music Fan</u>

10 - high rank: 186 - keyword rank: 57 Eagles MP3 Downloads - Eagles Music Downloads - Eagles Music Videos Eagles MP3 Downloads - MP3.com offers legal Eagles music downloads as well as all of your favorite Eagles music videos. http://www.mp3.com/artist/eagles/summary/ more like this with or without keywords add to profile Music Fan

In the above example, **Needlebot's User Profiles** (personalized search tool) has successfully disambiguated the keyword "**Eagles**" by displaying the Eagles rock band URL's at the top of the revised search results list. Clearly, these URL's are more likely to be of interest to a user who has selected the "**Music Fan**" profile since these results will closely match the user's current interests.

If the user were to now select a different User Profile, e.g. "**Nature Lover**" profile, the results list would alter to reflect the change in the user's current interests and display documents related to birds of prey at the top of the results list when the same keyword "**Eagles**" is searched. (See pages 36-37).



Disambiguated Results using Needlebot's User Profiles Tool (User Profile: Nature Lover)

Example 1b: User seeks URL's related to eagles (birds of prey)

Needlebot's User Profiles deliver personalized search results that reflect the user's current interests. Hence, when the Nature Lover profile is selected, the search term Eagles is disambiguated to display only those URL's related to bird of prey at the top of the search results list

Database: Internet Subset Keywords Searched: Eagles Selected User Profile: Nature Lover

1 - high rank: 192 - keyword rank: 63 Bald Eagles Soar Off Endangered Species List, But Will Act Be. The eagle's recovery is a wildlife success story, but conservationists say animals that remain on the list may be less protected due to recent rulings that ... http://news.nationalgeographic.com/news/2007/06/070628-bald-eagles.html more like this with or without keywords add to profile NATURE LOVER

2 - high rank: 25 - keyword rank: 194 **Bald Eagle Viewing Directory** When viewing eagles, please stay in your car, unless you're visiting a manned eagle observation deck. Your car acts as an excellent blind.... http://www.baldeagleinfo.com/eagle/eagle1.html more like this with or without keywords add to profile NATURE LOVER

3 - high rank: 107 - keyword rank: 97 Bald Eagles @ National Geographic Magazine Throughout the continent, half a million bald eagles may have soared. But settlers blamed them for killing livestock, so shooting beganand the proud birds' ... http://www.nationalgeographic.com/ngm/0207/feature2/ more like this with or without keywords add to profile NATURE LOVER

4 - high rank: 213 - keyword rank: 18 Eagles: Wildlife Notebook Series - Alaska Department of Fish and Game Eagle species description in the 'Alaska Wildlife Notebook Series' publication. http://www.adfg.state.ak.us/pubs/notebook/bird/eagles.php more like this with or without keywords add to profile NATURE LOVER

5 - high rank: 69 - keyword rank: 69 **Birds - Everything About Eagles** Everything about eagles - Photos plus information about their habitat, nesting, behavior. http://birding.about.com/od/birdseagles/Birds_Everything_About_Eagles.htm more like this with or without keywords add to profile NATURE LOVER

6 - high rank: 220 - keyword rank: 24 **Bald Eagle Facts and Information** American Bald Eagle Facts and Information. Learn all about bald eagles, golden eagles & birds of prey, help USA's national symbol by supporting bald eagle ... http://www.eagles.org/moreabout.html more like this with or without keywords add to profile NATURE LOVER

7 - high rank: 22 - keyword rank: 188 What Barbara's Camera Sees From late October through December, the Chilkat Bald Eagle Preserve, ... I went to Juneau to see the Mendenhall Glacier, but saw my first eagles there. ...



http://www.barbarascamera.com/alaska.htm more like this <u>with</u> or <u>without</u> keywords <u>add to profile NATURE LOVER</u>

8 - high rank: 229 - keyword rank: 32 <u>Bald Eagle Printout- EnchantedLearning.com</u> The bald eagle is a large, powerful bird with keen eyesight. http://www.enchantedlearning.com/subjects/birds/printouts/Eaglecoloring.shtml more like this with or without keywords <u>add to profile NATURE LOVER</u>

9 - high rank: 164 - keyword rank: 234 <u>Reelfoot Lake Eagles</u> Information on Bald Eagles in the Reelfoot area of northwest Tennessee. Eagle watching, state park captive eagles, and photos. http://www.reelfoot.com/eagles.htm more like this <u>with</u> or <u>without</u> keywords <u>add to profile NATURE LOVER</u>

10 - high rank: 110 - keyword rank: 100
 <u>Birds of Prev North-West Ireland, Eagles Flying, The Irish Raptor ...</u>
 Birds of Prev North-West Ireland, Eagles Flying, The Irish Raptor Research Centre sanctuary for birds of prev and owls, Ballymote, Sligo.
 http://www.eaglesflying.com/
 more like this with or without keywords add to profile NATURE LOVER

In the above example, **Needlebot's User Profiles** (personalized search tool) has successfully disambiguated the keyword "**Eagles**" by displaying the URL's related to birds of prey at the top of the revised search results list. Clearly, these URL's are more likely to be of interest to a user who has selected the "**Nature Lover**" profile since these results will closely match the user's current interests.

If the user were to now select a different User Profile, e.g. "**Sport Fan**" profile, the results list would alter to reflect the change in the user's current interests and display URL's related the Philadelphia Eagles (or other sports related sites) at the top of the results list when the same keyword "**Eagles**" is searched. (See pages 38-39).





Disambiguated Results using Needlebot's User Profiles Tool (User Profile: Sports Fan)

Example 1c: User seeks URL's related to sports sites including Philadelphia Eagles

Needlebot's User Profiles deliver personalized search results that reflect the user's current interests. Hence, when the Sport Fan profile is selected, the search term Eagles is disambiguated to display only those URL's related to sports sites including the Philadelphia Eagles at the top of the search results list

Database: Internet Subset Keywords Searched: Eagles Selected User Profile: Sports Fan

1 - high rank: 223 - keyword rank: 20 <u>Philadelphia Eagles Tickets : Eagles Football Tickets @ BuySellTix</u> Buy and Sell Philadelphia Eagles tickets for all shows Online. Find Eagles ticket prices from BuySellTix.com. http://www.buyselltix.com/nfl/eagles.php more like this <u>with</u> or <u>without</u> keywords <u>add to profile Sport Fan</u>

2 - high rank: 188 - keyword rank: 60
 Philadelphia Eagles Tickets - Eagles Football, Lincoln Financial Field
 Buy Philadelphia Eagles tickets at RazorGator your connection to Hard-To-Get Philadelphia Eagles football tickets.
 http://www.razorgator.com/tickets/sports/football/nfl/philadelphia-eagles-tickets/
 more like this with or without keywords
 add to profile Sport Fan

3 - high rank: 232 - keyword rank: 40 <u>Philadelphia Eagles Tickets, 2007 Philadelphia Eagles Schedule ...</u> The widest selection of Philadelphia Eagles Tickets - GOtickets is your source for premium Sports Tickets, featuring NO hidden fees or service charges. http://www.gotickets.com/sports/nfl/nfc/philadelphia_eagles.php more like this <u>with</u> or <u>without</u> keywords <u>add to profile Sport Fan</u>

4 - high rank: 159 - keyword rank: 153 <u>SportingNews.com - Your expert source for MLB Baseball, NFL ...</u> Post-draft analysis: The Eagles know Donovan McNabb won't last forever, so they drafted his ... This does not mean the Eagles will push McNabb out the door; ... http://www.sportingnews.com/nfl/teams/eagles/ more like this <u>with</u> or <u>without</u> keywords <u>add to profile Sport Fan</u>

5 - high rank: 163 - keyword rank: 208 <u>Eagles Endzone</u> Multimedia rich website with Philadelphia Eagles video, audio, compilations, weekly pre game packs, weekly wrap ups, pictures and much more. http://www.eaglesendzone.com/ more like this <u>with</u> or <u>without</u> keywords <u>add to profile Sport Fan</u>

6 - high rank: 204 - keyword rank: 9 <u>Philadelphia Eagles News, Scores, Schedule, Stats - Yahoo! Sports</u> Comprehensive and up-to-date Philadelphia Eagles news, scores, schedule, stats and roster. http://sports.yahoo.com/nfl/teams/phi more like this <u>with</u> or <u>without</u> keywords <u>add to profile Sport Fan</u>

7 - high rank: 73 - keyword rank: 88 <u>Posts from the Eagles Category at Sports Blog - The FanHouse</u> Posts from the Eagles Category at Sports Blog - The FanHouse. http://sports.aol.com/fanhouse/category/eagles/





8 - high rank: 128 - keyword rank: 121
Philadelphia Eagles Tickets - Buy Eagles Tickets - Philadelphia ...
Philadelphia Eagles Ticket Broker. Find great prices and seating locations for Eagles tickets at Lincoln Financial Field. Secure online order processing.
http://www.greatseats.com/football/philadelphia_eagles/
more like this with or without keywords add to profile Sport Fan
9 - high rank: 70 - keyword rank: 83

Eagles Soccer Club The eagles soccer club is based in columbus ohio with both boys & girls teams totaling over 30 teams from U8-U18. Eagles SC is in the mossl league and a ... http://www.eaglessoccer.org/ more like this with or without keywords add to profile Sport Fan

10 - high rank: 209 - keyword rank: 15 phillyBurbs.com | Philadelphia Eagles Over three days of spring practice that generally don't mean much, there was a most reassuring message for Eagles fans coming out the team's mini-camp last ... http://www.phillyburbs.com/pb-dyn/section.cfm?id=99&tmpl=eagles more like this with or without keywords add to profile Sport Fan

In the above example, **Needlebot's User Profiles** (personalized search tool) has successfully disambiguated the keyword "**Eagles**" by displaying the only sports related URL's at the top of the revised search results list. Clearly, these URL's are more likely to be of interest to a user who has selected the "**Sports Fan**" user Profile since these results will closely match the user's current interests.

The three previous examples, clearly demonstrate, how **Needlebot's User Profiles** can be used to disambiguate keywords and provide personalized search results to different users even when they enter *exactly the same keywords*.



Needlebot's Conceptual Search Tool (Paragraph Search)

Example 2a: User seeks URL's about the Florestal Colesvinton baby murder case

Needlebot's Conceptual Search tool successfully found a highly relevant URL in the top 5 hits even when the name of the accused was not included in the search string

Database: **Internet Subset** Paragraph Searched: *baby murdered by parent at Hamilton hotel*

1 - high rank: 37 - keyword rank: N/A Babies - News - Times Topics - The New York Times - Narrowed by ... Subscribe to an RSS feed on this topic. What is RSS? Babies - Narrowed by 'FLORESTAL, COLESVINTON' RSS Babies - Narrowed by 'FLORESTAL, COLESVINTON' ... $\label{eq:constraint} \end{tabular} where the two presence of tw$ more like this 2 - high rank: 158 - keyword rank: N/A Click here for more URL's Murdered Baby Had Catalogue Of Injuries - Big News Day A 17 month old baby boy died from a catalogue of injuries, which included a broken that contain similar topics to back and eight broken ribs, a court heard today. this highly relevant result http://www.bignewsday.com/story.asp?code=XS17409950&news=murdered_baby_had_catalogue_of_injuries more like this 3 - high rank: 171 - keyword rank: N/A charuavi's Blog : The Little Mermaid, charuavi blogs on sulekha ... The Little Mermaid - Mitali's new friend Litami cannot be surpassed for loyalty. http://charuavi.sulekha.com/blog/post/2007/07/the-little-mermaid.htm more like this 4 - high rank: 178 - keyword rank: N/A Job-Mom Does it come as any surprise that more working moms prefer part-time work over full-time work? I'm not going to delve into the numbers and details of this ... http://blogs.payscale.com/job_mom/ more like this 5 - high rank: 107 - keyword rank: N/A **Colorblind Homepage** Explains mechanics and physiology, and includes color wheels to simulate what the disabled see. http://colorvisiontesting.com/ more like this

Note: Needlebot's Conceptual Search tool (paragraph search tool) successfully found a highly relevant URL, (at course resolution), in the top 5 hits even when the name of the accused was not included in the search string.

Needlebot's Similar Pages tool (more like this) can now be applied to this relevant hit at position #1 to find additional highly relevant URL's related to the Florestal Colesvinton baby murder case at the Hamilton Hotel in New York. (See page 41).



Improved Results using Needlebot's Similar Pages Tool (more like this)

Example 2b: User seeks URL's about the Florestal Colesvinton baby murder case

Needlebot's Similar Pages tool successfully refined the original results to find several more highly relevant URL's related to this particular murder case in the top few hits

Database: Internet Subset

Paragraph Searched: *baby murdered by parent at Hamilton hotel* Then use Similar Pages tool (more like this)

1 - high rank: 1 - keyword rank: N/A <u>Babies - News - Times Topics - The New York Times - Narrowed by ...</u> <u>Subscribe to an RSS feed on this topic. What is RSS? Babies - Narrowed by 'FLORESTAL, COLESVINTON' RSS Babies - Narrowed by 'FLORESTAL, COLESVINTON' ...</u> <u>'FLORESTAL, COLESVINTON' ...</u> <u>http://topics.nytimes.com/top/reference/timestopics/subjects/b/babies/index.html?query=FLORESTAL,%20COLESVINTON&field=per&match=exact</u> <u>more like this</u>

2 - high rank: 2 - keyword rank: N/A <u>Bobbi Jo Stinnett Murdered for her Baby by Lisa Montgomery</u> True Crime Portal - Recommended True Crime resource by 48 Hours. The best information available online. Featuring exclusive information on Jeffrey MacDonald ... http://www.karisable.com/stinnett.htm content score: 86.07% (simple) 79.05% (coarse) 65.17% (low) 59.24% (medium) 50.35% (high) <u>more like this</u>

3 - high rank: 3 - keyword rank: N/A <u>Parents Charged in Death - New York Times</u> The police said yesterday that they had arrested the baby's parents, Colesvinton Florestal, 27, and Jovannie Florestal, 20, of Manhattan, and charged them ... http://query.nytimes.com/gst/fullpage.html?res=9500E2D81F3FF931A15756C0A9629C8B63 <u>more like this</u>

4 - high rank: 4 - keyword rank: N/A <u>hello insomnia</u> And can I confess to you, at the risk of losing my thuggish-street-cred, that bellowing "HELLO!" toward my son's fat, red cheeks smiling back through even ... http://www.kirida.com/ <u>more like this</u>

5 - high rank: 5 - keyword rank: N/A Babies - News - Times Topics - The New York Times - Narrowed by ... Mother and Companion Are Accused of Killing Baby ... MORE ON BABIES AND: CHILD ABUSE AND NEGLECT, FLORESTAL, COLESVINTON, FLORESTAL, JOVANNIE, NEW YORK CITY ... http://topics.nytimes.com/top/reference/timestopics/subjects/b/babies/index.html?offset=40&query=MURDERS%20AND%20ATTEMPTED% 20MURDERS&field=des&match=exact more like this

6 - high rank: 6 - keyword rank: N/A <u>Couple Charged With Killing 3-Month-Old Son in Shelter - New York ...</u> The baby, also named Colesvinton Florestal, weighed nine pounds and was badly injured and malnourished, the police said. He was dead by the time he reached ... <u>http://query.nytimes.com/gst/fullpage.html?sec=health&res=980CE2DA163EF930A15756C0A9629C8B63</u> <u>more like this</u>





Note: When the same short search phrase: "*baby murdered by parent at Hamilton hotel*" is entered as a search string into either Google or Yahoo, no relevant hits are found within top 100, or so, search results), forcing the user to either search through pages of irrelevant hits or to try to revise his or her initial search string.

A combination of **Needlebot's Conceptual Search tool** and **Needlebot's Similar Pages tool** helps to overcome these types of problems by delivering highly relevant URL's to the user in just a few easy clicks.



Summary

The previous set of examples, performed on Internet subset database, demonstrate the ability of Needlebot's proprietary, patent-pending technology to dramatically improve existing Enterprise document and Internet search capabilities by producing superior search results and providing users with a new and attractive menu of search features.

In particular, Needlebot's advanced **Similar Pages** search tool could be easily integrated into any existing Enterprise search engine to provide users with a unique and extremely powerful conceptual search capability that was previously unavailable.

Needlebot's advanced **Similar Pages** search tool can also be used to further refine the initial list of search results given by either Needlebot's **User Profiles** tool or Needlebot's **Conceptual Search** tool, by clicking on the *more like this* link next to a selected relevant hit.

Please note that a similar set of examples has also been conducted on other test databases. Needlebot has retrieved, indexed and fingerprinted about 6,555 publicly accessible pages crawled through Oracle's website at <u>www.oracle.com</u>. Needlebot has also indexed and fingerprinted Reuters' news article collections from 1987 and 1996. The results and documentation from these additional test case examples using this *Oracle Test Database* are also available to interested parties.

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