NewsSearch

Search and Dynamic Re-ranking over News Corpora
Search engines today have to display tens of thousands of results
  ◦ Can lead to poor choices
Introduction

- Search engines today have to display tens of thousands of results
  - Can lead to poor choices
A typical query results in thousands of results, but less than 6% of users click on a link on the second page.
A typical query results in thousands of results, but less than 6% of users click on a link on the second page.
A typical query results in thousands of results, but less than 6% of users click on a link on the second page.
Search Point

- Visualizes the long tail of search results
- The documents are grouped into related groups
- Reordered when the target is moved to a particular group
NewsSearch

- All computation is done server-side
  - Can handle more results
- New widgets
- Query extensions before re-ranking
News Collection

- Uses news collection and indexing services developed at J. Stefan Institute
- IJS newsfeed crawls RSS enabled feeds across the world
  - Downloads 50,000–100,000 articles per day
- Each article is processed using a text enrichment service Enrycher
  - Extracts topics and entities from unstructured text
- For indexing we use News Miner
  - Entirely based on code developed at JSI
NewsSearch interacts with the user through a series of widgets
  ◦ Designed to visualize different dimensions of the complete collection

The user starts by entering a search query and the widgets are generated based on the resulting documents
The world widget allows re-ranking based on locations assigned to the document
- Publishing location
- Location mentioned in the article
Topic Widget

- Allows filtering and re-ranking based on topics mentioned in articles
- Displays clusters of articles represented by the most relevant keywords
  - Computed using K-Means++ algorithm
  - Visualized using MDS
Concept Widget

- Allows filtering and re-ranking based on concepts obtained in the articles
  - Extracted using the Enrycher service
- Displays clusters of articles represented by the most relevant concepts in each cluster
  - Clusters concepts, not articles
  - Each concept represented as a “Bag of Documents”
DMOZ Widget

- Allows re-ranking based on DMOZ categorization
  - Categorization provided by the Enrycher service
- Displays a tree of categories
Query Extension

- The server is passed the position of all the targets
- Constructs a new query by extending the users query
  - Weights keywords and selects the top 5
- Weight of a keyword $w$ is a combination of the weight of a cluster $w_c$ and the weight of a keyword inside the cluster $w_k$

$$w = w_k w_c$$
Query Extension

- Weight of a cluster $w_c$ is the same for all keywords in a cluster

$$w_c(x, y) = \frac{1}{2\pi\sigma} e^{-\frac{(x-x_c)^2+(y-y_c)^2}{2\sigma}}$$

- Weight of a keyword inside a cluster is computed using its position $i$ inside the cluster

$$w_k(i) = e^{-\frac{i}{2}}$$
The extended query is constructed by conjuncting a disjunction of the selected keywords to the original query.

For example, let $Q$ be the original query and $A$, $B$ and $C$ the extracted keywords.

$$Q_n = Q \land (A \lor B \lor C)$$
Re–Ranking

- Results weighted using TF–IDF combined with the weight of the term
  - With the same TF–IDF A will have a higher weight than B
Example

(91144) Tens of Thousands Clog Moscow to Protest Putin
AP - Police in Moscow have arrested top opposition figures along with
demonstrators after a protest march on the eve of Vladimir Putin's
inauguration as president Friday to reach the Kremlin. The march by about
20,000 people to an island adjacent to ...

(93318) Putin's Extravagant $70 Million Watch Collection
MOSCOW - Russian President Vladimir Putin apparently has a soft spot for luxury watches, but some are wondering why the timepieces haven't
been nabbed on his wall. The Russian opposition group Stolitsa has
produced a video that begins with
http://voiceofsiberia.com/columns/headlines/2013/06/putin-extravagant-
700million-watch-collection

(68709) Biggest anti-Putin rally
Tens of thousands of Russians flooded streets in Moscow to protest
against President Vladimir Putin's role in what appeared to be the biggest
opposition rally yet. An estimated 110,000 demonstrators marched through
downtown Moscow on Tuesday, which
http://www.thenews.com/article/2012-06/11/moscow-targets-
opposition-leaders

(13278) Moscow targets opposition leaders
MOSCOW, June 11 (UPI) - Opposition activists in Russia say authorities
there are trying to "scare off" activists expressing frustration with Russian
President Vladimir Putin. Opposition leader Alexei Navalny said authorities
in Moscow raided
http://www.upi.com/top-news/article/2012/06/11/Moscow-targets-
opposition-leaders/UP/525513304119187/78742800/mr

(20817) Moscow targets opposition leaders
MOSCOW, June 11 (UPI) - Opposition activists in Russia say authorities
there are trying to "scare off" activists expressing frustration with Russian
President Vladimir Putin. Opposition leader Alexei Navalny said authorities
in Moscow raided
http://www.upi.com/top-news/article/2012/06/11/Moscow-targets-
opposition-leaders/UP/525513304119187/78742800/mr

(47761) Thousands attend anti-Putin protest in Moscow
Thousands of Russians have marched through Moscow to protest against
President Vladimir Putin. Protesters streamed down a busy central
boulevard in the first major rally since Mr Putin was sworn in on 7 May.
They said they would not be deterred by poll

(27640) Russian police raid activist leader's homes
Russian police have raided the homes of prominent critics of President
Dmitry Medvedev on the eve of an opposition rally expected to draw tens
of thousands of people. Monda's early morning raids, carried out by police
squad with assault rifles, spo...

(20408) Russian police raid homes of opponents of Vladimir Putin
The searches, which police launched at the apartments of opposition leaders
early in the morning, were a new sign Putin is shifting to more aggressive
tactics to quash protests as he starts a six-year term. Putin signed a law on
Friday that increased I...
http://www.telegraph.co.uk/news/worldnews/europe/russia/9323872/Russian-
police-raid-homes-of-opponents-of-Vladimir-Putin.html
Clinton's visit to the Caucasus

US Secretary of State Hillary Clinton made a whirlwind tour through the Caucasus, stopping in Armenia, Azerbaijan and Georgia on June 4-5. The visit focused international attention on the region, especially given the sudden spike in deadly armed clashes.

For Obama in Syria conflict with goal in Iran

From one point of view, the connection between our troubles with Syria and Iran is straightforward. The Syrian regime of Bashar Assad is Iran's closest ally, and its link to the Arab Middle East. Without Syria, Iran's pretenses to regional hegemony...
hh://www.palmbeachpost.com/reviews/news-obama-goal-in-syria-conflicts-goal-in-iran.html

Obama's Iran and Syria muddle

So why are both the Obama administration and the government of Benjamin Netanyahu so keen on Assad? -- to say the least -- about even indirect military intervention to topple Assad? In part it's because of what would follow the dictator. In the words of...
hh://www.washingtonpost.com/opinions/obamas-iran-and-syria-muddle/2012/05/10/gqCa6hTV_story.html

Putin to visit Israel amid Syria, Iran concerns

Russian president to visit Israel for first time in 7 years. Moscow's stance regarding Syria, Iran at odds with Israeli positions. Photo: REUTERS/ABednarski/Newscom/Pool Russian President Vladimir Putin is planning to make his first official visit to Israel for the first time in seven years. The visit has been in preparation for months and is said to be going ahead...
hh://news.google.com/News/PolicyArticles?id=273624

Putin please get serious!

In a speech during last week’s Shanghai Cooperation Organization summit, Chinese President Hu, urged Iran to play nice in next month’s round of nuclear talks. This time, the West and China hope to avoid the runaround Iran gave everyone in...
hh://blogs.the-american-interest.com/2012/06/11/china-whispers-toiran-please-get-serious/

Russia and Iran continue supporting crumbling Assad regime

The Assad Regime begins to crumble; Netanyahu warns against the prospect of a Syrian conflict. Iran delivers more arms to the Syrian regime; Russia warns that the situation in Syria is going to get even worse.
hh://www.digitaljournal.com/article/324463

Putin to visit Israel amid Syria, Iran concerns

Russian President Vladimir Putin is planning to make his first official visit to Israel since 2000, although the exact date for the visit has not yet been determined. The Foreign Ministry said Tuesday, News in Putin’s expected visit came as Russia...
hh://news.google.com/Headlines/id=273621

US exempts 7 economies from Iran oil sanctions

The United States will exempt seven economies including India, South Korea and Turkey from the oil sanctions, as a result of their significant reduction of oil purchases from Tehran. Secretary of State Hillary Clinton announced on Monday. In a statement, the...
hh://www.china.org.cn/business/2012-06/12/content_26/024343.htm
Example

(55358) **Clinton's visit to the Caucasus**
US Secretary of State Hillary Clinton made a whirlwind tour through the Caucasus, stopping in Armenia, Azerbaijan and Georgia on June 4-6. The visit focused international attention on the region, especially given the sudden spike in death - armed clashes.
http://www.todayszaman.com/columnists/Detail_getNewsByArticleid?newsid=263253

(66452) **Putin to visit Israel amid Syria, Iran concerns**
Russian President Vladimir Putin is planning to make his first official visit to Israel since 2000, although the exact date for the visit has not yet been determined; the Foreign Ministry said Tuesday. News of Putin's expected visit came as Russia...
http://www.pbs.com/mediastreams/datanews/articleid?id=277521

(14397) **Obama's Iran and Syria muddle**
So why is both the Obama administration and the government of Benjamin Netanyahu half - way to say the least - about even indirect military intervention to topple Assad? In part, it's because of what would follow the dictator in Damascus...
http://www.washingtonpost.com/opinions/obama-iran-and-syria-muddle/2012/08/10/gQDkTen7Zl_story.html

(14973) **For Obama, goal in Syria conflicts with goal in Iran**
From one point of view, the connection between our troubles with Syria and Iran is straightforward: The Syrian regime of Bashar Assad is Iran's closest ally, and its link to the Arab Middle East. Without Syria, Iran's pretensions to regional heg...
http://www.pbs.com/mediastreams/datanews/articleid?id=277624

(66241) **Putin to visit Israel amid Syria, Iran concerns**
Russian President Vladimir Putin is planning to make his first official visit to Israel since 2000, although the exact date for the visit has not yet been determined; the Foreign Ministry said Tuesday. News of Putin's expected visit came as Russia...
http://www.pbs.com/mediastreams/datanews/articleid?id=277624

(30078) **US exempts 7 economies from Iran oil sanctions**
The United States will exempt seven economies including India, South Korea and Turkey from the Iran oil sanctions, as a result of their significant reduction of oil purchases.
http://www.china.org.cn/world/2012-06/12/content_25624174.htm

(30966) **US exempts 7 economies from Iran oil sanctions**
The United States will exempt seven economies including India, South Korea and Turkey from the Iran oil sanctions, as a result of their significant reduction of oil purchases.
http://www.china.org.cn/business/2012-06/12/content_25624343.htm

(23128) **Russia and Iran continue supporting crumbling Assad regime**
The Assad Regime begins to crumble; Hatay, Turkey says it has slain soldiers in a firefight.
http://www.digitaljournal.com/article/221463
Thank you

- Questions?
Thank you

- Questions?
Thank you

- Questions?