

Information Retrieval for Question Answering

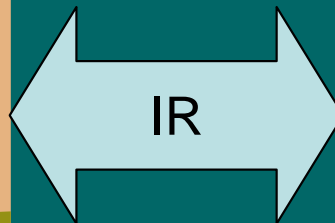


Luiz Augusto Pizzato
pizzato@ics.mq.edu.au

Diego Mollá-Aliod

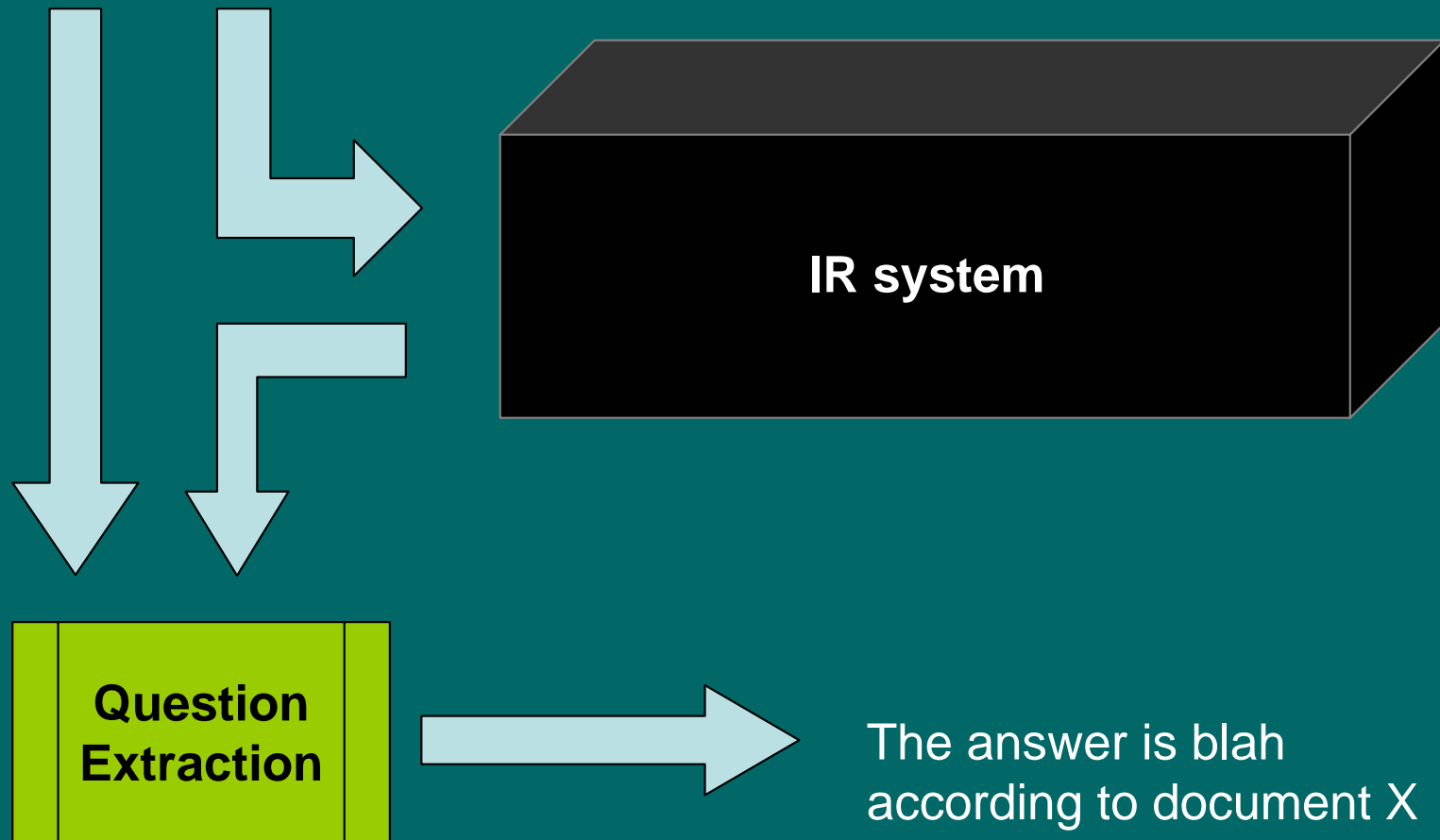
Centre for Language Technology
Macquarie University
Sydney, Australia

Information Retrieval



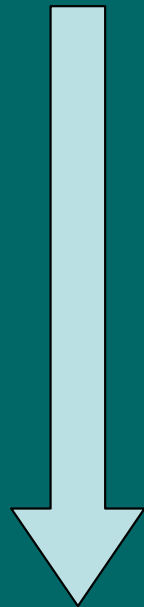
Question Answering

Who is the blah of the blah?



Question Answering

Who is the



Question
Extraction

Google™ [What countries are famous for their steaks?] Search [Advanced Search](#) [Preferences](#)

[Metroblogging Karachi: A Truck Full of Smelly Heads.](#)
... blood content...one of the reasons steaks in Pakistan and some muslim countries are not as great and famous as their European or american counterparts. ...
[karachi.metblogs.com/archives/2006/11/a_truck_full_of.phtml](#) - 45k -
[Cached](#) - [Similar pages](#) - [Note this](#)

[Metroblogging Karachi: Restaurant Review #6: Hollywood Grill](#)
... but definitely lacks 'the crowd' atmosphere of the glittering rich and famous making their entrance. On the steak issue I feel Hollywood Grill beats ...
[karachi.metblogs.com/archives/2007/03/restaurant_revi_5.phtml](#) - 48k -
[Cached](#) - [Similar pages](#) - [Note this](#)

[Northern Europeans, Diet of - Nutritional status, Eating habits ...](#)
The countries of northern Europe include the United Kingdom of Great ... The English are famous for their flower gardens, but they are also known for their ...
[www.faqs.org/nutrition/Met-Obse/Northern-Europeans-Diet-of.html](#) - 17k -
[Cached](#) - [Similar pages](#) - [Note this](#)

[Omaha Steaks](#)
Many of these websites have people just like you that will add their favorite seafood ... countries that are famous for the most delectable recipes around. ...
[www.steaks-guide.com/product-pages/seafood-recipes.htm](#) - 22k -
[Cached](#) - [Similar pages](#) - [Note this](#)

[http://potato/ethics/Countries/Chile/culture.html](#)
From its striking indigenous people famous for their music and art, to theater and ... corn, rice or noodles and be can have a piece of chicken or steak. ...
[www.pitt.edu/~ethics/Chile/culture.html](#) - 31k - [Cached](#) - [Similar pages](#) - [Note this](#)

[Are the Wine Lists at Steak Houses Any Good? | Food & Wine](#)
In search of some answers, I set out on a three-city tour focusing on places famous for their commitment to steak: New York City, Chicago and Dallas. ...



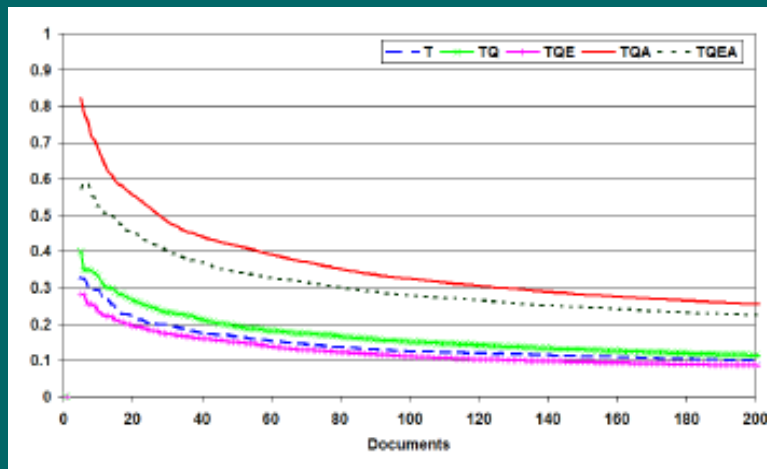
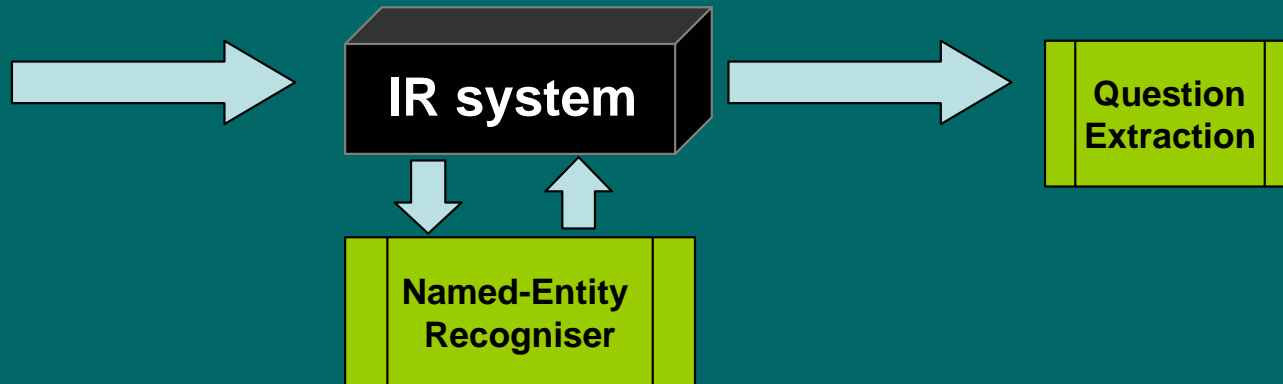
ment X

IR for QA

- How can we perform better IR for QA?
- Related research
 - Query manipulation
 - Query expansion
 - Query modification
 - Adding modules to IR
 - Results re-ranking
 - Improving Passage Retrieval
 - Developing new IR models

Pseudo-Relevancy Feedback using NE for QA

What countries are famous for their steaks?



Run	Exact
<i>T</i>	19.6%
<i>TQ</i>	28.6%
<i>TQE</i>	23.2%
<i>TQA</i>	28.6%
<i>TQEA</i>	32.1%

PIZZATO, Luiz Augusto; MOLLA, Diego; PARIS, Cecile. Pseudo Relevance Feedback Using Named Entities for Question Answering. In Proceedings of the Australasian Language Technology Workshop 2006. Sydney University, November 2006.

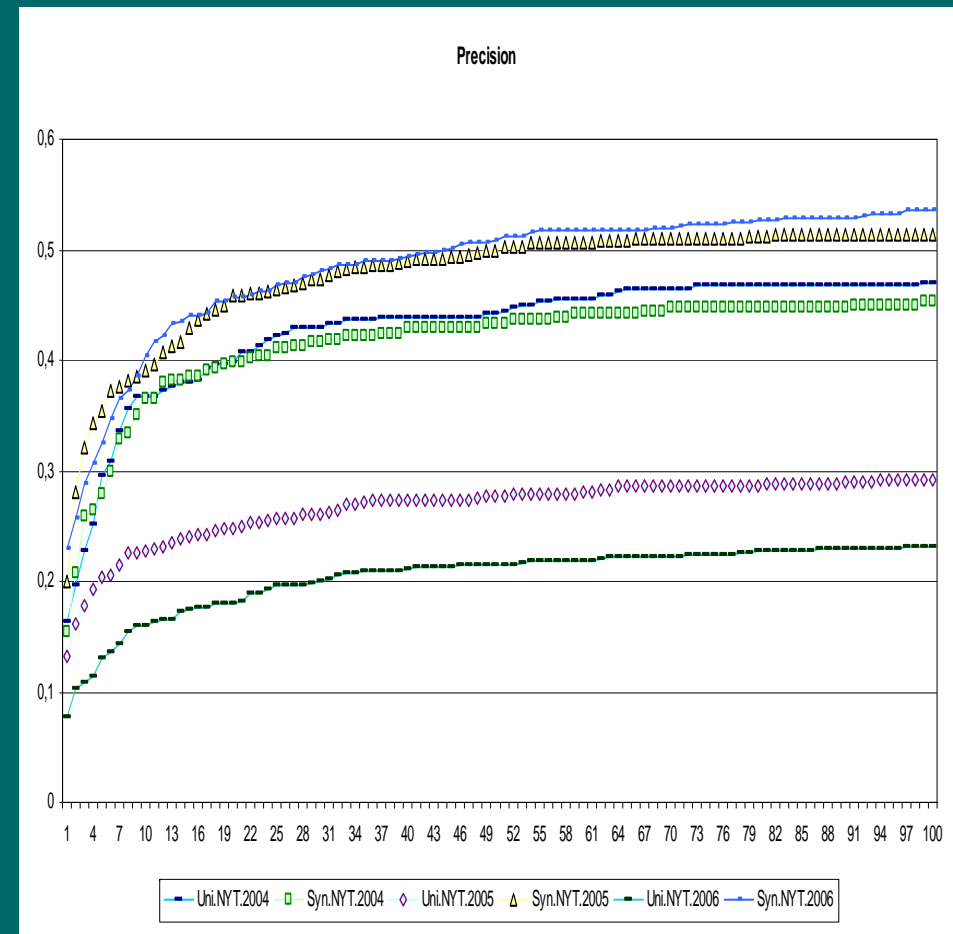
Bag of Words



Image from: <http://wwwcsif.cs.ucdavis.edu/~alonsoom/>

IR beyond Bag of Words

- Bi-Grams
- Syntactic Relations
- Semantic Information
 - Semantic Role Labelling
 - Question Prediction Language Model



Bag of Questions?



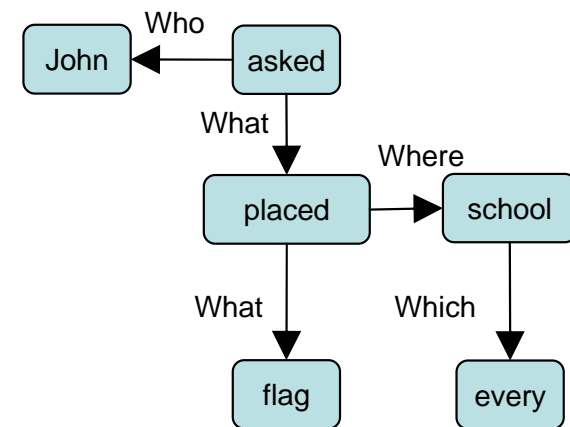
Image from: <http://wwwcsif.cs.ucdavis.edu/~alonsoom/>

QPLM

- Take the sentence:
 - “John asked that a flag be placed in every school”

Several questions can be asked about this sentence:

- Who did ask for a flag to be placed on every school?
- What did John ask?
- What did John ask to be placed on every school?
- Where did John ask for a flag to be placed?
- Which school did John ask for a flag to be placed?



QPLM

- Dependant on:
 - Syntactic Parser
 - Named-Entity Recognizer
- Rule-based system
 - Weighted Rules
- Training Set
 - Mapped from Propbank

Information Retrieval for Question Answering



Luiz Augusto Pizzato
pizzato@ics.mq.edu.au

Diego Mollá-Aliod

Centre for Language Technology
Macquarie University
Sydney, Australia