Adaptive Retrieval Systems Issues & Challenges

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Adaptive Systems

- User need – Current
  - Query expansion
  - Adapting the presentation
- Long-term user Interests
  - User modelling
- User environment
  - task, work setting etc
  - Time, location/place
- Devices
  - Phones, PDAs, laptops etc.
- Collection
  - Types of documents

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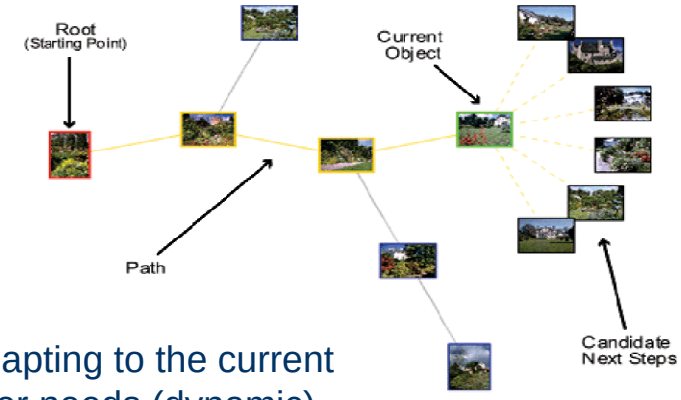
Ostensive Browsing



Adapting to the current user needs (dynamic)

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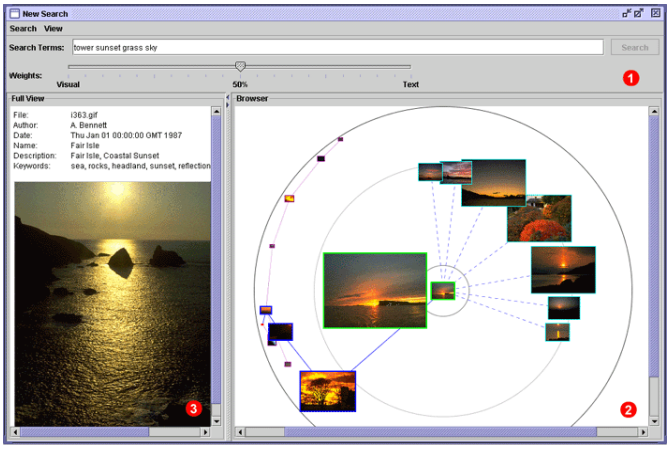
OB Interface



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Ostensive Browsing in Web Search

How to Create a **Dust**-Free Bedroom, NIAID Fact Sheet

If you are **allergic** to **dust** mites, you could also be **allergic** or develop an **allergy** to cats, dogs, or other animals. Although these steps may seem difficult ...

How to Create a Dust Free BedroomIf you are dust sensitive, especially if you have allergies and/or asthma, you can reduce some of your misery by creating a "dust free" bedroom.

Dust may contain molds, fibers, and dander from dogs, cats, and other animals, as well as tiny dust mites.

In addition to getting medical care for your dust allergy and/or asthma, the National Institute of Allergy and Infectious Diseases suggests the following guidelines.

Dust mite allergy usually produces symptoms similar to pollen allergy and also can produce symptoms of asthma.

Carpets trap dust, dust mites, skin, pet dander, mold, spores, pollen, and chemicals that can trigger allergies or asthma like symptoms.

Dust allergy can also make people with asthma experience wheezing, coughing and shortness of breath.

Consult your allergist to determine the most effective treatment method for you, and you can gain control of your dust mite allergy and achieve relief from allergy symptoms.

Carpets trap dust, dust mites, skin, pet dander, mold, spores, pollen, and chemicals that can trigger allergies or asthma like symptoms.

You can gain control of your dust mite allergy and achieve relief from allergy symptoms.

http://www.niaid.nih.gov/factsheets/dustfree.htm - 11k - Cached - Similar pages

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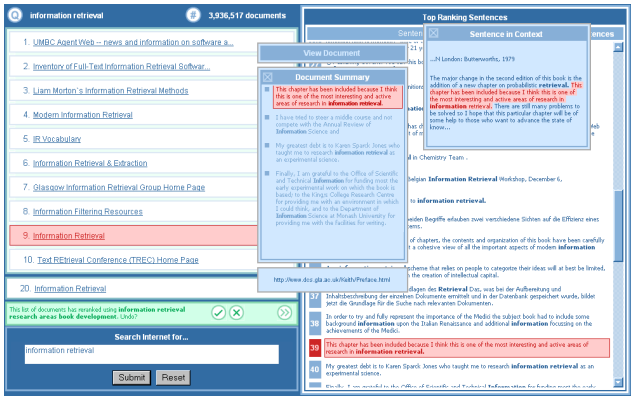
Search System based on Implicit Feedback



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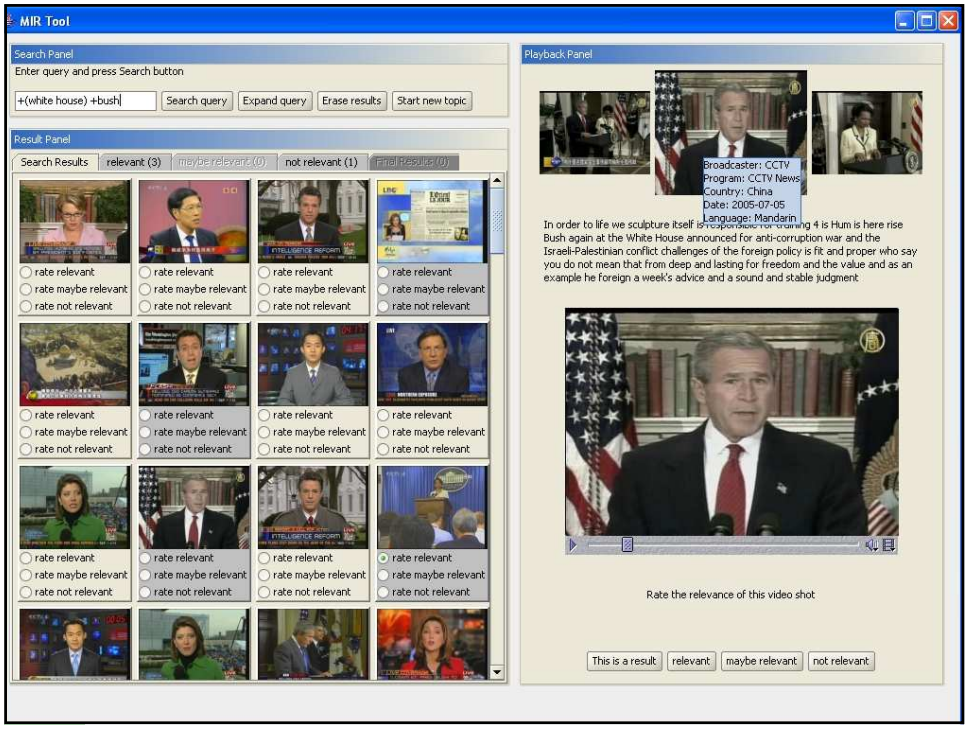

Summary

- Adaptation based on capturing user's evolving needs
- Underlying Retrieval model
  - Often developed on top of standard retrieval models
    - Binary voting model
    - Jeffrey's approach
    - Dempster-Shafer model
- Interaction sequences vary from user to user

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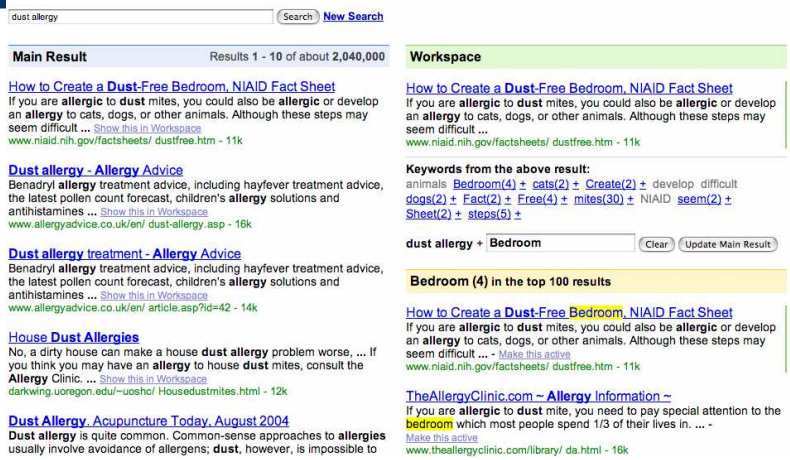
Slicing and dicing approach



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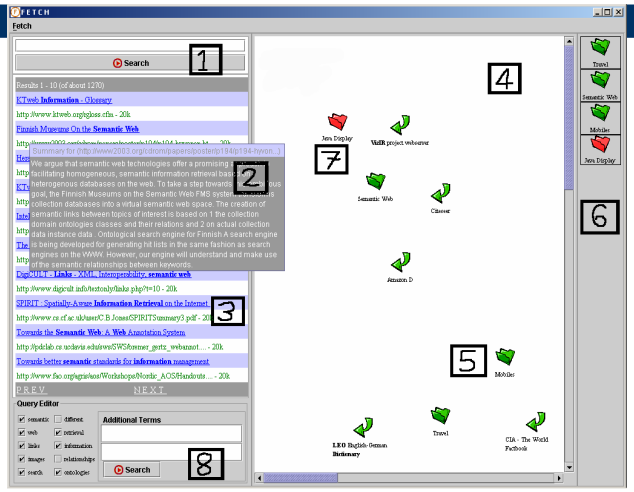
Fetch Interface



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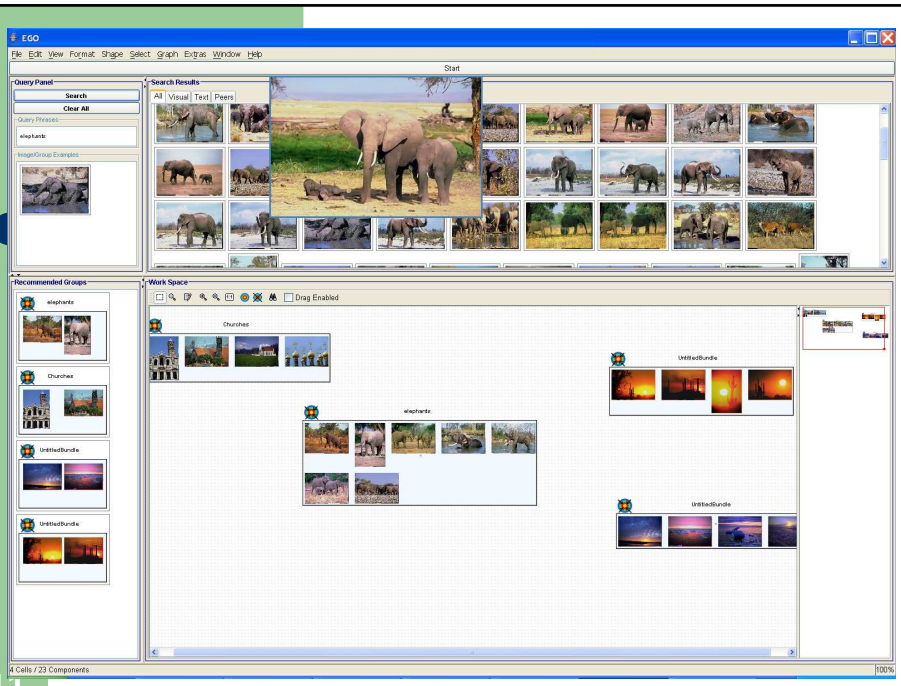

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Personal Information Agent

Welcome to your PIA homepage, **Ioannis Psarras**

information retrieval

Access percentage : 67% edit delete

Information Retrieval Conferences
Information Retrieval Conferences. Calls for Participation [Calendar | List]; Calls for Papers [Calendar | List]; Past Events [2005 | 2004 | 2003 ...
http://www.is.informatik.uni-duisburg.de/fgir/conferences/
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Text **REtrieval Conference** (TREC) TREC-7 Proceedings
The Seventh Text **REtrieval Conference** (TREC 7) ... For additional **information** on these utilities, please reference the [help] file. ...
http://trec.nist.gov/pubs/trec7/t7_proceedings.html
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Text **REtrieval Conference** (TREC) Home Page
An annual **information retrieval conference** and competition, the purpose of which is to support and further research within the **information retrieval** ...
http://trec.nist.gov/
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ACM SIGIR Special Interest Group on **Information Retrieval** Home Page
TREC: Experiment and Evaluation in **Information Retrieval**. EM Voorhees and DK Harman (Eds), ... Upcoming **Conferences** held in Cooperation with SIGIR ...
http://www.sigir.org/
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xbox hardware

Access percentage : 33% edit delete

AnandTech: Microsoft's **Xbox 360**, Sony's PS3 - A **Hardware** Discussion
Microsoft's **Xbox 360**, Sony's PS3 - A **Hardware** Discussion ... Leaving us with two contenders: Microsofts **Xbox 360**, due out by the end of this year, ...
http://www.anandtech.com/video/showdoc.aspx?i=2453
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The **Xbox 360** System Specifications - **Xbox**
512 MB GDDR3 RAM; 700 MHz DDR; Unified memory **architecture** ... Fusing powerful **hardware**, software, and services, **Xbox 360** fully engages you in a gaming ...
http://hardware.teamxbox.com/articles/xbox/1144/The-Xbox-360-System-Specifications/p1
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Summary

- User modelling component
  - User profiles and their facets
- Adaptation model
  - Long-term information needs
- Other
  - Semantic gap reduction in image retrieval
  - User interest specification and monitoring their evolving needs
- Evaluation
  - User-centric evaluation
  - Laboratory based
  - Simulated tasks
- Results
  - All systems found to be better than the corresponding baselines
  - So?
    - What about the components of the system?
    - Are they optimal?

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Issues

- How to evaluate them
  - Laboratory based & user-centred
  - Simulated work-task
- Adaptive Models
  - Simulated evaluation
    - Standard collections
  - User-interaction data for search simulation
    - On the interaction data provided
- General
  - No strong methodologies
    - Measures
      - Ad-hoc and weak!

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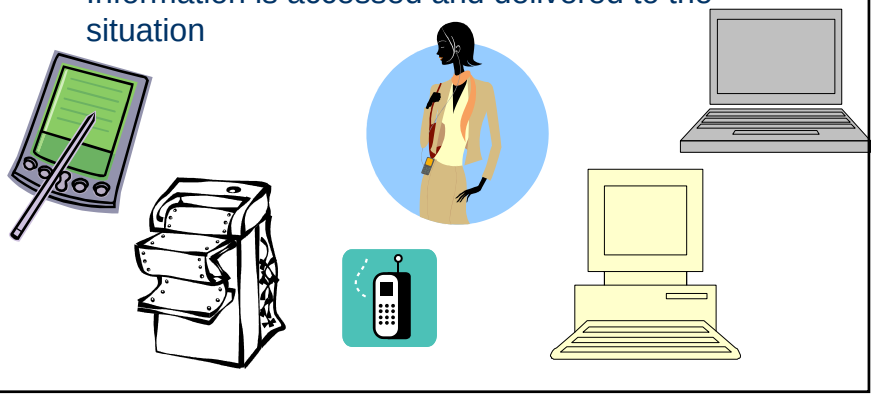
Future Information Retrieval Systems

- Situation sensitive (or smart information access)
  - Information is accessed and delivered to the situation



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Challenges

- Evaluation Infrastructure
  - Test collections and methodology
  - Methodology for building quick and cheap test collections?
- Interaction based test set?
  - Yes! *The way forward is to create large test-beds with a number of interaction based test-sets*
- Integrated retrieval models
  - Ad-hoc search mechanisms versus integrated retrieval models
  - Techniques to infer user intentions based on context

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