WWW Panel: Searching Personal Content

The Person in Personal
(Supporting the Person in Searching Personal Content)

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Stuff I’ve Seen (SIS)

- Personal content    “stuff you’ve seen”
- Finding vs. Re-finding  (e.g., file, web, memory)
- Unified access to stuff you’ve seen

- Many types of info (e.g., files, email, calendar, contacts, web pages, rss, im, music, pictures)
- Index content plus metadata (e.g., time, author, title, size, usage)
- Rich UI possibilities, since it’s your content (rich associations)
What People Do Look For?

- “The email that I sent to Yoelle earlier this week about the format for the WWW panel.”

- “The pictures I took during our visit to NYC of Ben with his face covered in chocolate pudding.”

- “Whether the spec for user studies that we [our team] recently reviewed has been updated.”

- “The special price for the vacation rental at the Kona Beach Resort.”
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Importance of:
- Time, People
- Also type/source, entities, events, history of interaction
- Supporting what the searcher remembers about the information
### SIS Interface

#### Stuff I've Seen

<table>
<thead>
<tr>
<th>Document</th>
<th>Date</th>
<th>Rank</th>
<th>Path</th>
<th>Author</th>
<th>Mail To</th>
</tr>
</thead>
<tbody>
<tr>
<td>All (200)</td>
<td>5/6/2004</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes (51)</td>
<td>5/6/2004 11:27:28</td>
<td></td>
<td>personal folders/media</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Last 7 days**
- temporary internet files/content ie5\www\topub
- temporary internet files/content ie5\0ubghir
- temporary internet files/content ie5\z9f9h0w
- temporary internet files/content ie5\yb5shw.7a
- personal folders/hlt-naacl04

**Last 30 days**
- temporary internet files/content ie5\zef6ox
- temporary internet files/content ie5\yko3hdsl5
- personal folders/media
- temporary internet files/content ie5\exp331kvu

**Older than 30 days**
- temporary internet files/content ie5\exp331kvu
- personal folders/hlt-naacl04
- Salmi Roukos, marc@ISI.EDU, Susan Dumais
- Peter Wootton, Eric Horvitz
- Scott Hay
- temporary internet files/content ie5\exp331kvu

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SIS Usage Experiences

- Stuff I’ve Seen (SIS) - Research prototype system
  - ~3000 internal Microsoft users
  - Analyzed: Free-form feedback, Questionnaires, Structured interviews, Diaries, Log analysis, UI expts, Lab expts

- Information

- Personal

- Query
  - Short (<2 words) and Simple (<7% advanced operators)
  - Many advanced operators in UI and iteration (48%)
  - Re-Sort results, Filter results (time, type, person), From:, To:, HasAttachment:, Title:

- Dumais et al., SIGIR 2003

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SIS Usage, cont’d

- Importance of time (and other metadata)
  - Date by far the most common sort field, even for people who had Rank as default
  - “Best” ordering … depends on what people remember for this search

- Human memory depends on abstractions
  - “Memorable date” is dependent on the object!
    - Appointment, when it happens
    - Picture, when it is taken
    - File, when it is changed
    - Email and Web, when it is seen
  - “Person” attribute vs. contained in text
    - To, From, Cc, Author, Artist

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Ranked list vs. Metadata
(for personal search)

Why Rich Metadata?
• People remember many attributes in re-finding
  - Often: time, people, file type, use, etc.
  - Seldom: only general overall topic
• Rich client-side interface
  - Support fast iteration/refinement
  - Fast filter-sort-scroll vs. next-next-next
SIS -> Phlat

(richer metadata support, including tags)

- Shell for WDS
- Tight coupling of search and metadata
  - Q -> Results and associated metadata
- Tagging
  - A single set of user-generated tags to all content
- "In-context" search
  - See assoc metadata
  - Actions on results
  - Pivot on metadata ("Sideways search")
Phlat

Phlat shell for Windows Desktop Search

- Tight coupling of searching/browsing
- Rich faceted metadata support
  Including unified tagging across data types
- In-context actions and search

Download: http://research.microsoft.com/adapt/phlat
SIS --> Memory Landmarks

- Importance of time in re-finding
  - Absolute and relative time (e.g., landmarks in human memory)

- Identify and use landmarks facilitate information management and search
  - Timeline interface, augmented w/ landmarks
  - Bayesian models to identify memorable events

- Extensions beyond search, Life Browser

Ringel et al., Interact 2003
SIS, Timeline w/ Landmarks

Distribution of Results Over Time

Search Results

Memory Landmarks
- General (world, calendar)
- Personal (appts, photos)
(linked by time to results)
Landmarks, key dependencies
(from learned graphical model)
Visualizing Trends

Summarize the results of a search
Abstraction beyond individual results
E.g., Grid representation
Axes represent attributes (topic, time, people, etc.)
Cells encode frequency, recency
Supports analyses like:
What newsgroups are active (on topic x)?
What people are active, authoritative (on topic x)?
When did I last interact w/ Ed?

Goecks et al.
Beyond “Search” (Supporting Tasks)

- Requires going beyond just retrieving documents
  - Retrieve -> Analyze -> Use
- Lightweight scratchpad or workspace support
  - Iterative and evolving nature of search
  - Resuming at a later time or on other device
  - Sharing with others
- Richer sense-making

http://images.live.com
The Person in Personal

- Support the person in searching personal content
  - Rich associations, incl time, people, contexts of use

- Unified access to personal content
  - vs. information islands

- Representation and use of rich metadata
  - vs. single ranked list or single hierarchy
  - Fast and flexible access via what the person remembers, including cognitive landmarks

- Thinking outside the search box
  - In-context search, implicit queries (stuff I should see), richer task support (search is not the goal !)

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