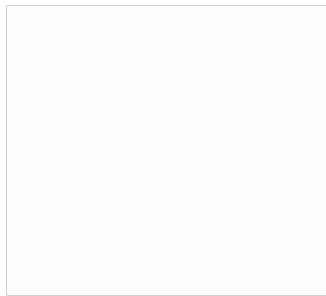




# Beyond Google: A Quest to Understand Information Seeking Across Time and People



Chirag Shah

School of Information & Library Science (SILS)  
University of North Carolina (UNC) at Chapel Hill  
[chirag@unc.edu](mailto:chirag@unc.edu)



# The “Google effect”




**Google**   [Advanced Search](#)  
SafeSearch: [Moderate](#) ▼

---

[Web](#) > [Images](#) [+ Show options...](#) Results 1 - 20 of about **14,000,000** (0.08 seconds)

**Offensive Search Results**  
[www.google.com/resultsinfo](http://www.google.com/resultsinfo)  
Sometimes our search results can be offensive. We agree. Read more.

 **President Obama Posters**  
[www.AllPosters.com](http://www.AllPosters.com) Vast Selection of President **Obama** Posters. Shop Today and Save!

**Barack Obama Fathead®**  
[www.Fathead.com](http://www.Fathead.com) Life-Size Wall Graphics For The Ultimate **Obama** Supporter.

Sponsored Links

Related searches: [michelle obama ape](#)



**AOL says Michelle**  
300 x 387 - 25k  
[polichicksonline.com](http://polichicksonline.com)  
[Find similar images](#)



**michelle obama | Leave**  
380 x 500 - 84k - jpg  
[politicalkudzu.com](http://politicalkudzu.com)  
[Find similar images](#)



**Michelle Obama stokes**  
413 x 310 - 29k - jpg  
[weblogs.sun-sentinel.com](http://weblogs.sun-sentinel.com)  
[Find similar images](#)



**Michelle Obama Begins**  
400 x 300 - 19k - jpg  
[obamafamilywhitehouse.com](http://obamafamilywhitehouse.com)  
[Find similar images](#)



**Michelle Obama**  
330 x 400 - 26k - jpg  
[freerepublic.com](http://freerepublic.com)  
[Find similar images](#)



**Michelle Obama's**  
500 x 500 - 23k - jpg  
[topnews.in](http://topnews.in)  
[Find similar images](#)



**michelleobama.jpg**  
298 x 431 - 14k - jpg  
[powerlineblog.com](http://powerlineblog.com)  
[Find similar images](#)



**Michelle Obama Photo**  
392 x 629 - 50k - jpg  
[dancewithshadows.com](http://dancewithshadows.com)  
[Find similar images](#)

# A quest for beyond “Google”



- Single-shot to multi-session information seeking
- Solo to social and collaborative activities
- Searching to seeking and discovering
- Retrieving to resolving and synthesizing



## Takeaways

- Many situations call for **multi-session** and/or **multi-person** information seeking.
- Often we need more information (**contextual, related**) about an object to make sense of it.
- **Social aspect** could play a key role in information seeking.
- Need to consider **integration, cognitive load, and adoption** factors.





# Information Seeking and Usage Over Time, Across People

# ResultsSpace framework

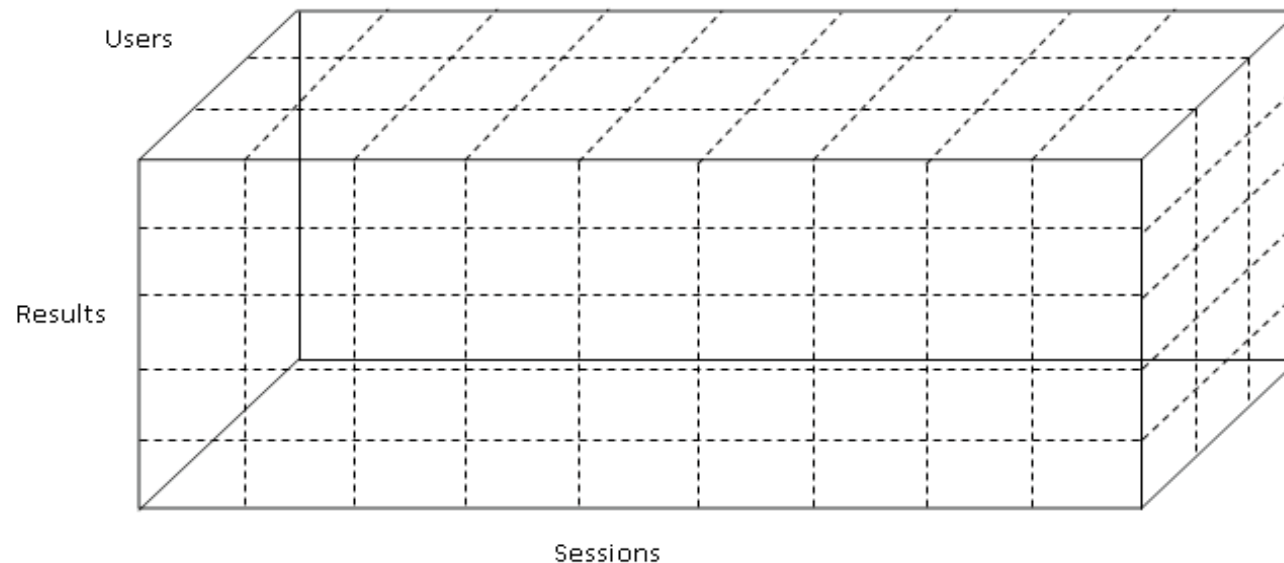


Gary Marchionini  
Information & Library Science  
UNC Chapel Hill

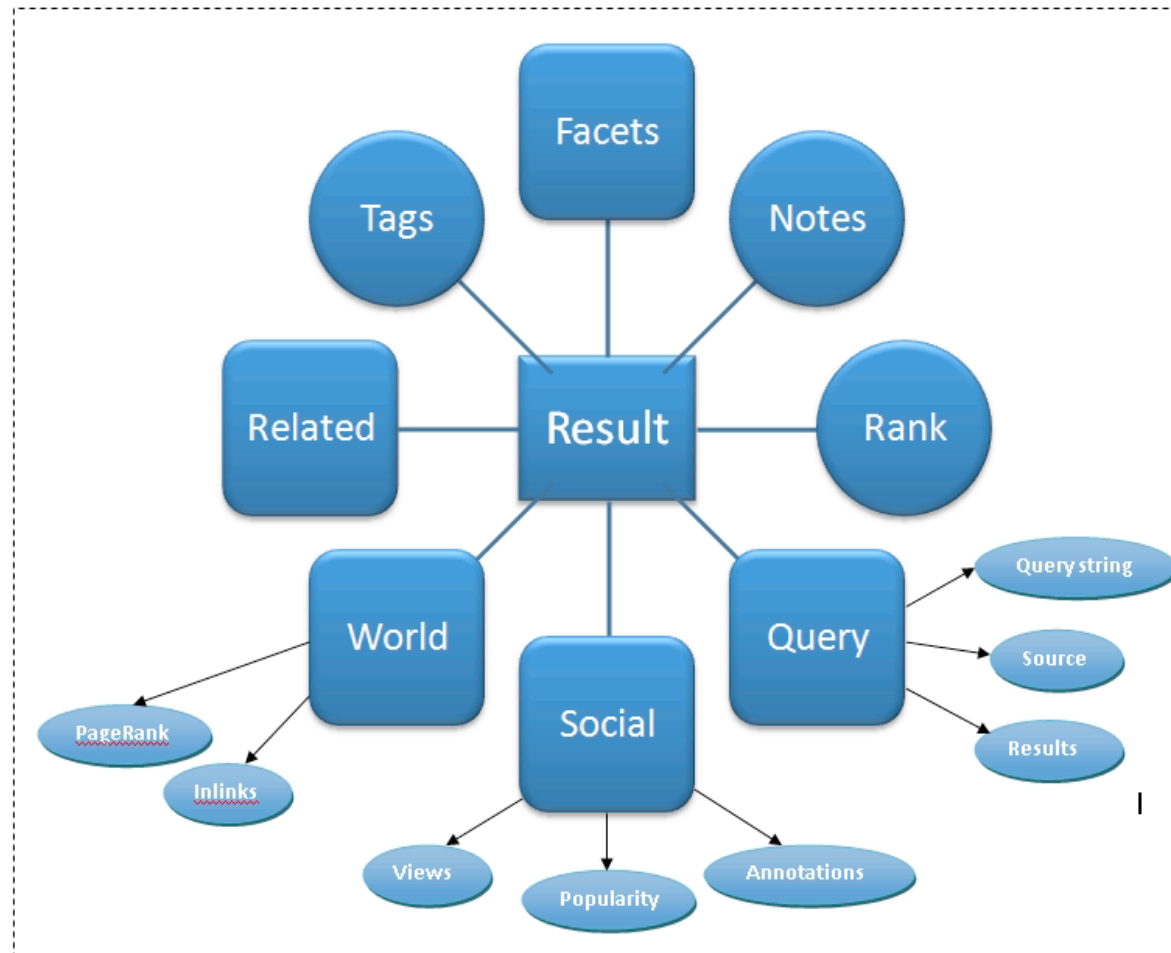


Rob Capra  
Information & Library Science  
UNC Chapel Hill

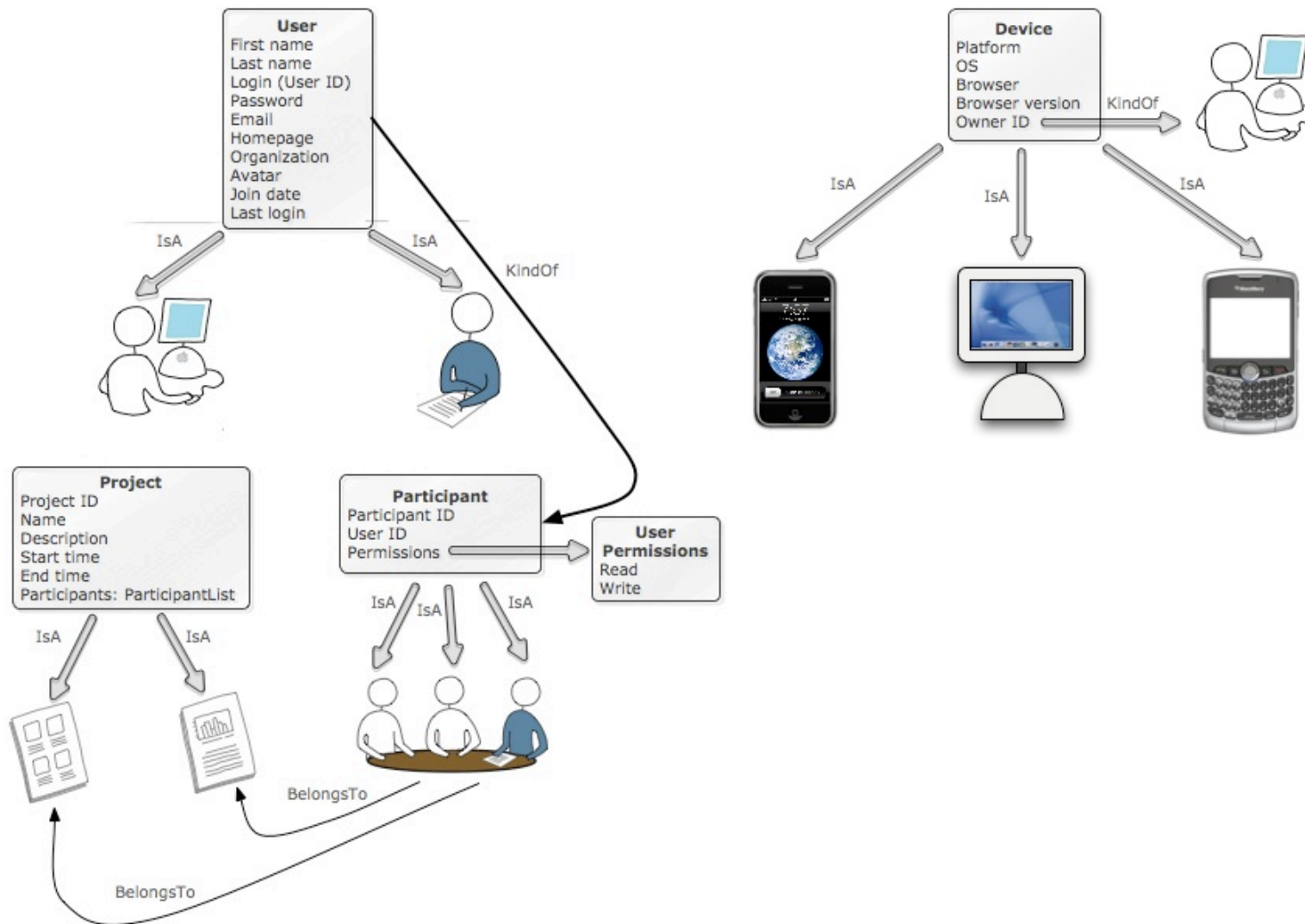
NSF supported project starting Fall 2008.



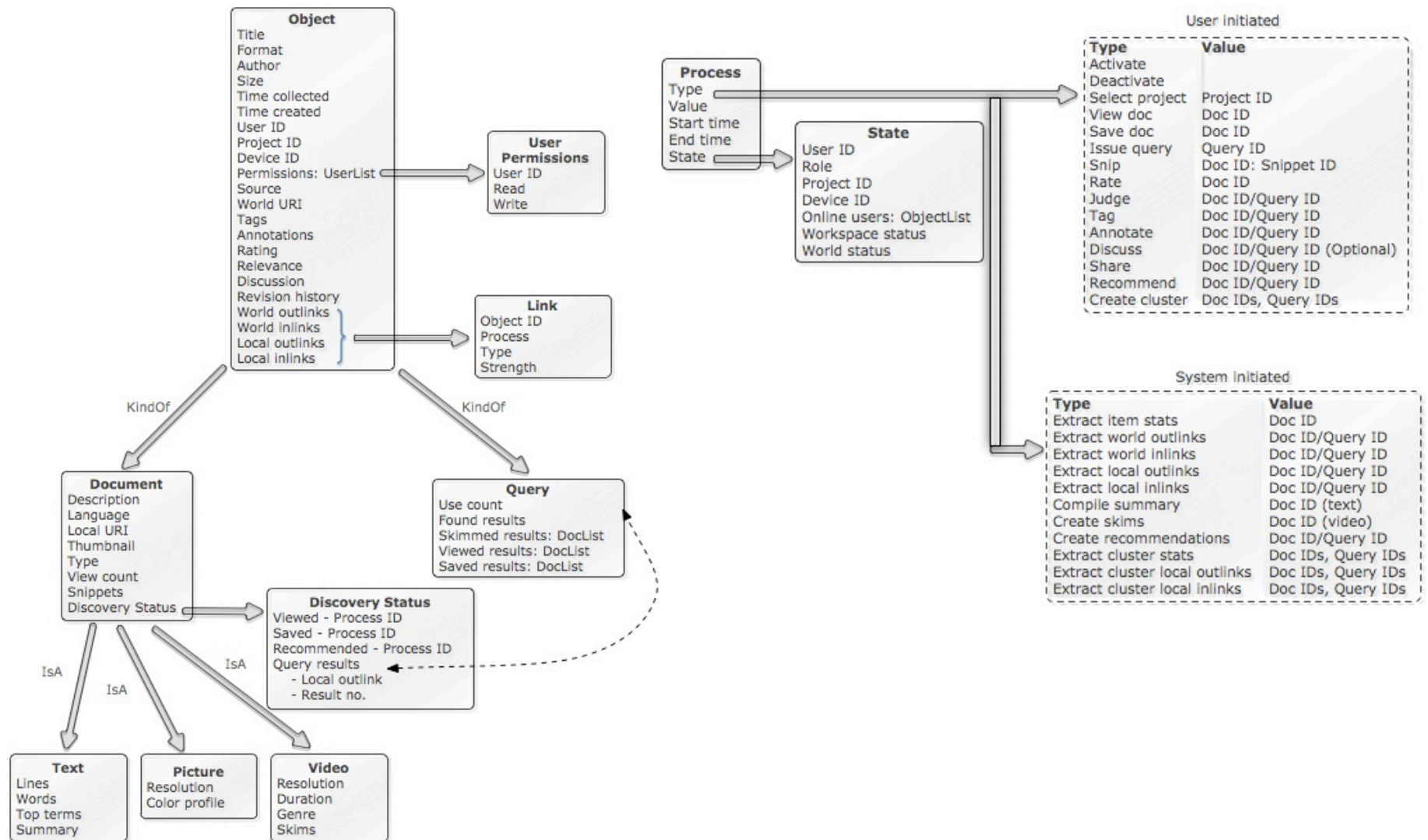
# ResultFrame



# ResultsSpace entities models



# ResultsSpace entities models



# Simulation for ResultsSpace



=> **Searching** Live for "type II diabetes"

=> **Skimming** the results

=> **Viewing** result # 1

PageURI: <http://search.live.com/health/results.aspx?br=lv&qu=Type II Diabetes>

=> **Snipping**: <http://search.live.com/health/results.aspx?br=lv&qu=Type II Diabetes>

=> **Searching** Google for "resultsspace framework"

=> **Skimming** the results

=> **Viewing** result # 4

PageURI: [http://www.intute.ac.uk/socialsciences/cgi-bin/search.pl?  
term1=space%20science](http://www.intute.ac.uk/socialsciences/cgi-bin/search.pl?term1=space%20science)

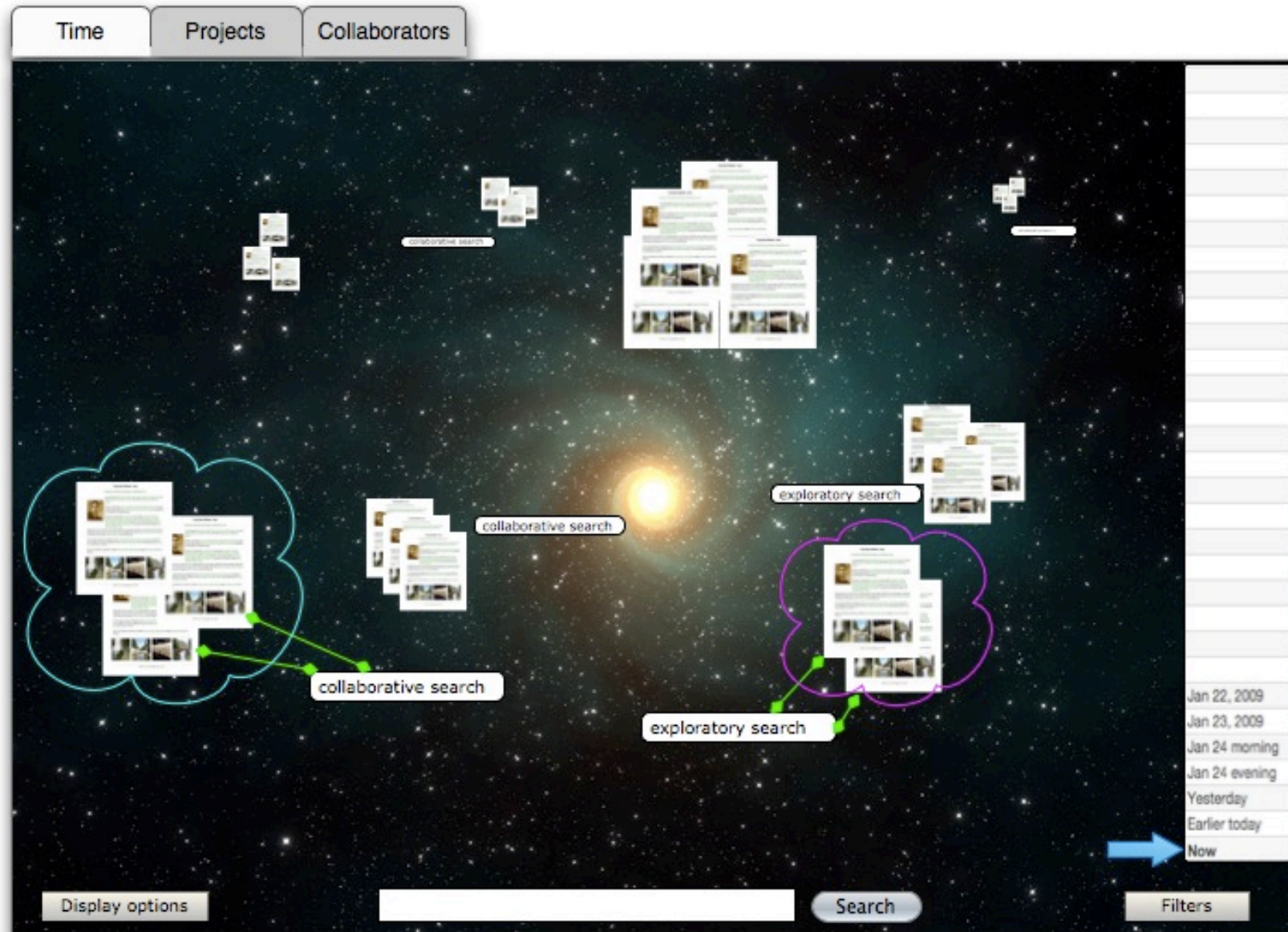
=> **Tagging** document: [http://www.intute.ac.uk/socialsciences/cgi-bin/search.pl?  
term1=space%20science](http://www.intute.ac.uk/socialsciences/cgi-bin/search.pl?term1=space%20science)

=> **Annotating** document: [http://www.intute.ac.uk/socialsciences/cgi-bin/search.pl?  
term1=space%20science](http://www.intute.ac.uk/socialsciences/cgi-bin/search.pl?term1=space%20science)

=> **Judging** document [http://www.intute.ac.uk/socialsciences/cgi-bin/search.pl?  
term1=space%20science](http://www.intute.ac.uk/socialsciences/cgi-bin/search.pl?term1=space%20science)  
Thumbs up



# ResultsSpace mockup





## Issues and challenges

- Developing robust data models
- Designing intuitive interfaces
- Addressing cognitive load
- Considering adoption
- Facilitating integration into existing practices





# Collaborative Information Seeking

# Collaboration in Information Seeking



Requirement or setup  
e.g., merger

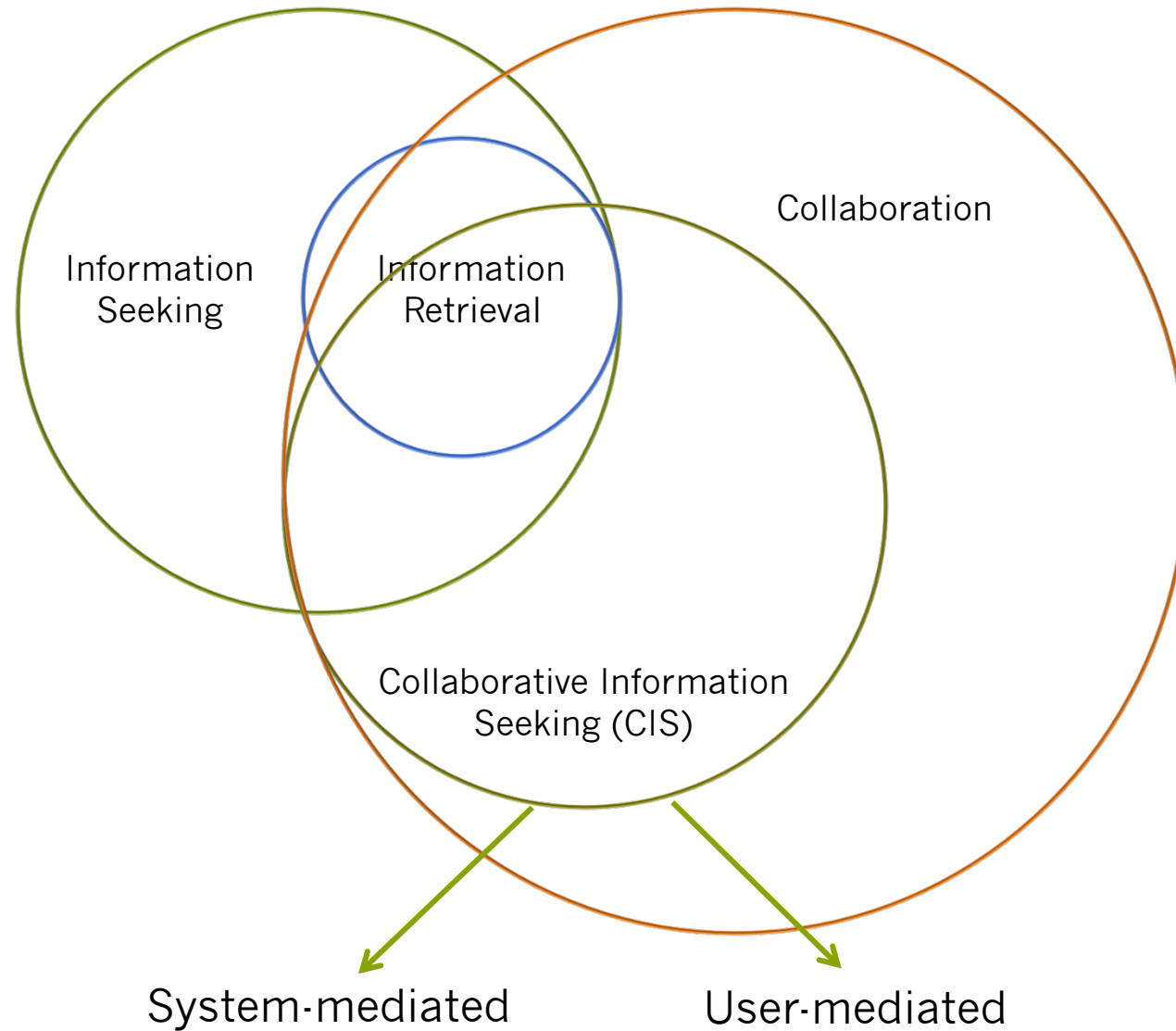


Division of labor  
e.g., class assignment



Diversity of skills  
e.g., co-authorship

# Providing support for collaboration



# System-mediated collaboration

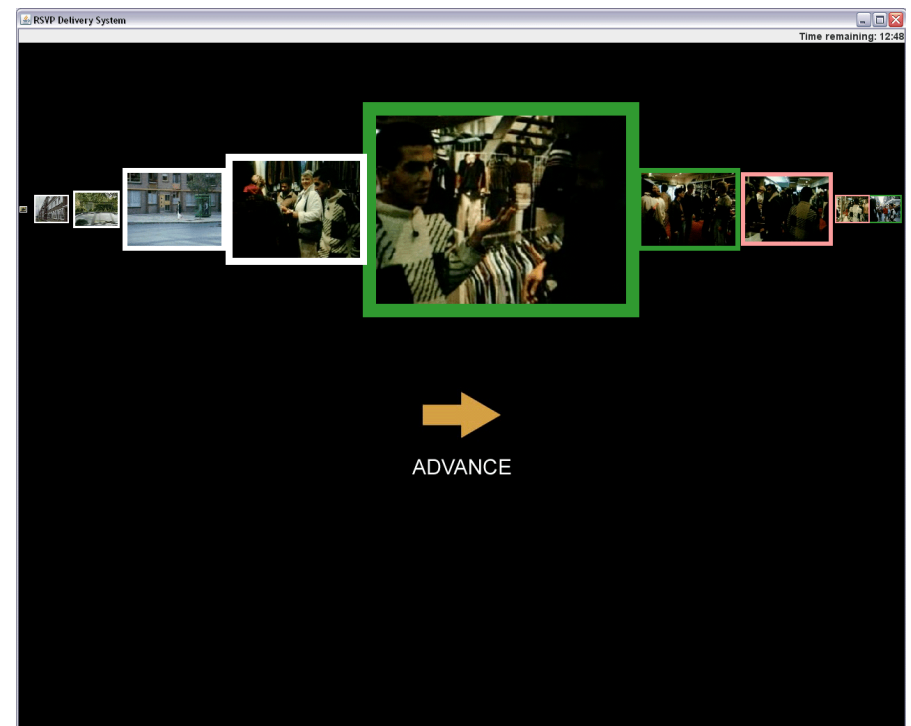
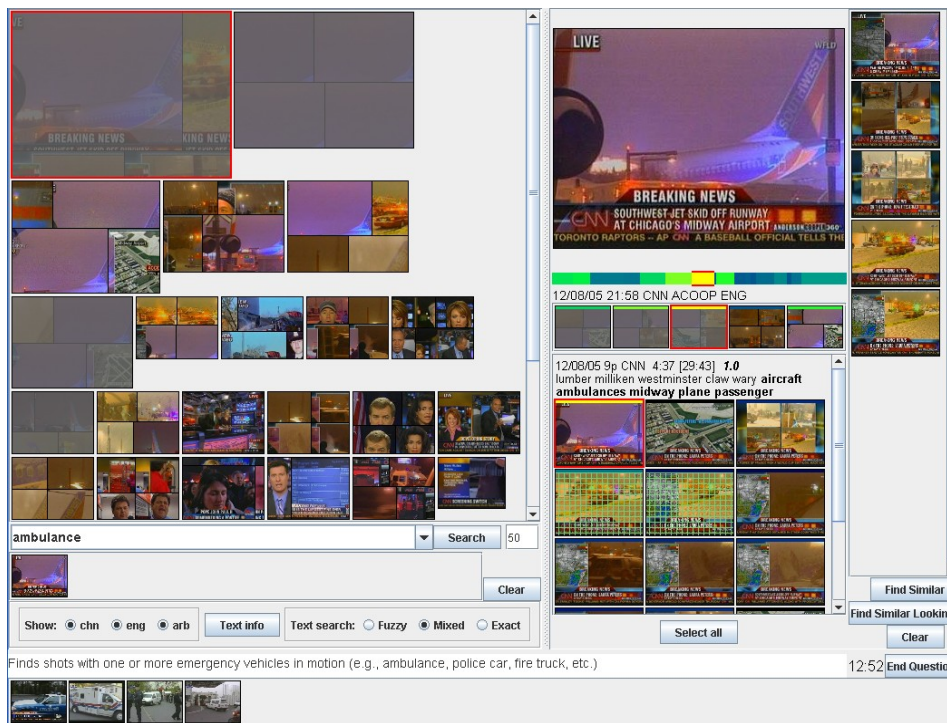


Jeremy Pickens  
Fuji Xerox Palo Alto Lab  
(FXPAL), California

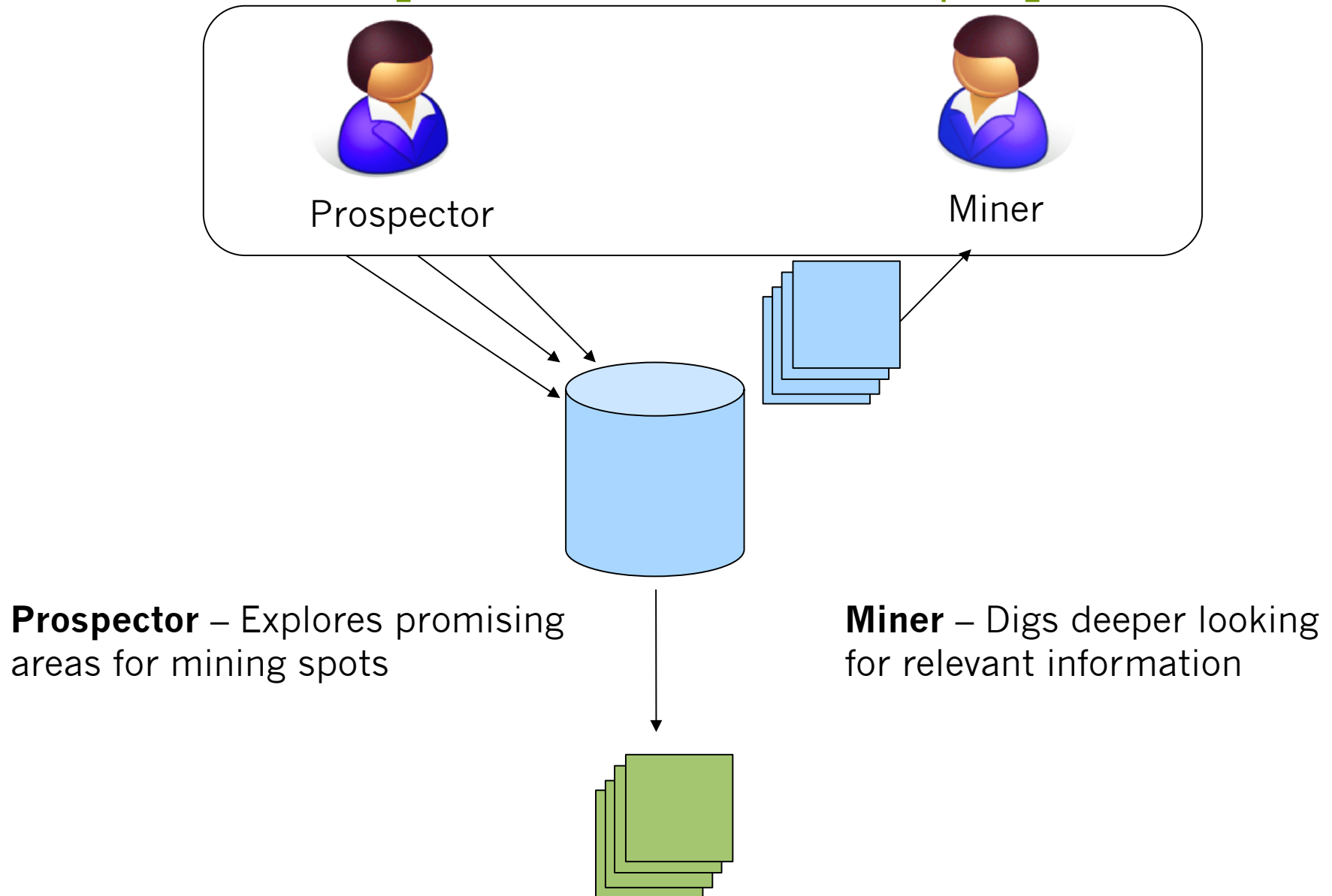


Gene Golovchinsky  
Fuji Xerox Palo Alto Lab  
(FXPAL), California

Internship at FXPAL during summer 2007.



# System-mediated asymmetric-role collaboration [SIGIR 2008 Best Paper]





# Application to TRECVID

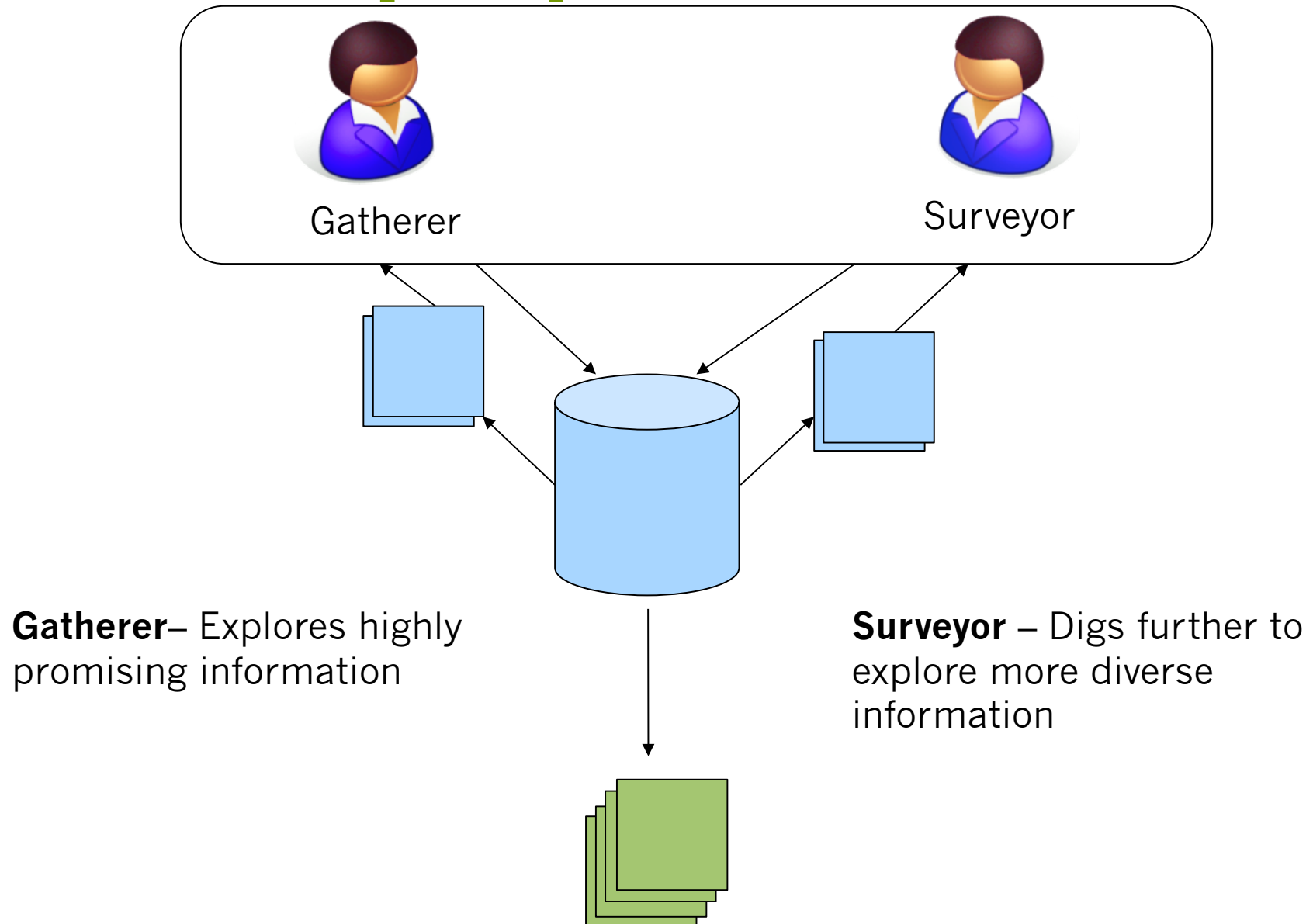


# Findings



- Users selected more relevant documents.
- Users found these relevant documents quicker (effects apparent even after 3-4 minutes).
- Users found these relevant documents with less effort (viewed precision).
- Users found relevant documents that otherwise were not found (uniqueness).

# System-mediated asymmetric-role collaboration [IP&M]





# User-mediated collaboration



Gary Marchionini  
Information & Library Science  
UNC Chapel Hill



Diane Kelly  
Information & Library Science  
UNC Chapel Hill



Barbara Wildemuth  
Information & Library Science  
UNC Chapel Hill



Deborah Barreau  
Information & Library Science  
UNC Chapel Hill



Susan Dumais  
Principle Researcher  
Microsoft Research

# Coagmento



Economic Stimulus - The New York Times

http://topics.nytimes.com/topics/reference/timestopics/subjects/u/UNITED\_STATES\_economy... Google

Home Remove Snip Annotate View count: 3 Snippets: 1 Annotations: 1 Task: Economic recession - Viewed pages: 10, Saved pages: 3, Queries: 3, Snippets: 4

Economic Stimulus - The New ...

HOME PAGE TODAY'S PAPER VIDEO MOST POPULAR TIMES TOPICS Log In Register Now

**The New York Times**  
Monday, May 25, 2009

**Times Topics**

Search All NYTimes.com

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH SPORTS OPINION ARTS STYLE TRAVEL JOBS REAL ESTATE

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**Samsung Rant™**  
Send messages fast with a full QWERTY keyboard.

**Get it now** →  
Online only price.

**Sprint**

Advertise on

TIMES TOPICS > SUBJECTS > U > UNITED STATES ECONOMY > ECONOMIC STIMULUS

**Economic Stimulus**

☒ SIGN IN TO RECORD ☐ SHARE

**Latest Developments** | Updated: May 14, 2009

- Nearly three months after President Obama approved a \$787 billion economic stimulus package, intended to create or save jobs, the federal **government has paid out less than 6 percent** of the money, largely in the form of social service payments to states. *May 13, 2009*
- Akron, Ohio, has prompted a sometimes emotional conversation about suicide, government spending and the city's image with a plan to use more than a million dollars of **federal stimulus money to build a fence on a bridge** to deter people from jumping to their deaths. *May 6, 2009*
- Florida lawmakers have refused to move a bill to expand unemployment eligibility in order to accept **\$444 million in federal stimulus aid**. *April 28, 2009*
- The federal stimulus money President Obama has sent coursing through the economy offers a chance to begin addressing deeply rooted **problems in cities like Anderson, Ind.**, a once-proud automaking center that is a study in deindustrialization. *April 27, 2009*
- President Obama wants to restore the **superfund tax**, which once collected hundreds of millions of dollars a year from chemical and oil companies. Until then, financing for work at the nation's nearly 1,600 Superfund sites will come from taxpayers in the form of E.P.A. appropriations or stimulus money. *April 26, 2009*

**Multimedia**

**Programs**

**New tax credit for workers** **MORE** ▶

Provide a tax credit at a rate of 6.2 percent and up to \$800 for couples, in 2009 and 2010, \$150,000 for married couples filing jointly, money back.

**The Stimulus Plan: How to Spend \$787 Billion**  
A detailed look at the final package passed by Congress.

**Headlines Around the Web**

What's This?

**FINANCIAL TIMES**  
MAY 25, 2009  
**US free trade promises must be honoured**

**BLOOMBERG**  
MAY 25, 2009  
**PetroChina Matches Exxon as Most Valuable Company**

**MEDICAL NEWS TODAY**

**Photos** Click on a photo to view related article

**NON-SURGICAL BREAKTHROUGH TREATMENT**  
**Chronic Back Pain**  
**What I Are U Treating**

**Coagmento Sidebar**

bugs: hello  
bugs: you there?  
daffy: hi bugs  
daffy: how's it going?  
bugs: just getting started. have you figured out what to look for?

Send

Queries Pages Snippets

bugs: economic recession (google)  
daffy: economic recession (google)  
bugs: economic stimulus plan (yahoo)  
bugs: obama economic plan (live)

Done

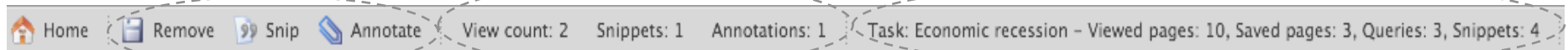
# Coagmento



Actions that one can  
take on the displayed  
webpage

Statistics relating to the  
current webpage

Statistics relating to the  
current task



Coagmento Sidebar

bugs: hello

bugs: you there?

daffy: hi bugs

daffy: how's it going?

bugs: just getting started. have you figured out what to look for?

Send

Queries

Pages

Snippets

bugs: economic recession (google)

daffy: economic recession (google)

bugs: economic stimulus plan (yahoo)

bugs: obama economic plan (live)


# Coagmento workspace




## Coagmento

'cause two (or more) heads are better than one!

### Collected Snippets



[What Is Recession? Economic Recession Definition | RECESSION.ORG](#)  
Many professionals and experts around the world believe that a true economic recession can only be confirmed if GDP (Gross Domestic Product) growth is negative for a period of two or more consecutive quarters. another definition. this one is from recession.org.





[Organizing for America | BarackObama.com | Economy](#)  
President Obama inherited a terrible mess: a \$1.3 trillion deficit, two wars, rising unemployment and unprecedented crises in our banking system.

Move to:

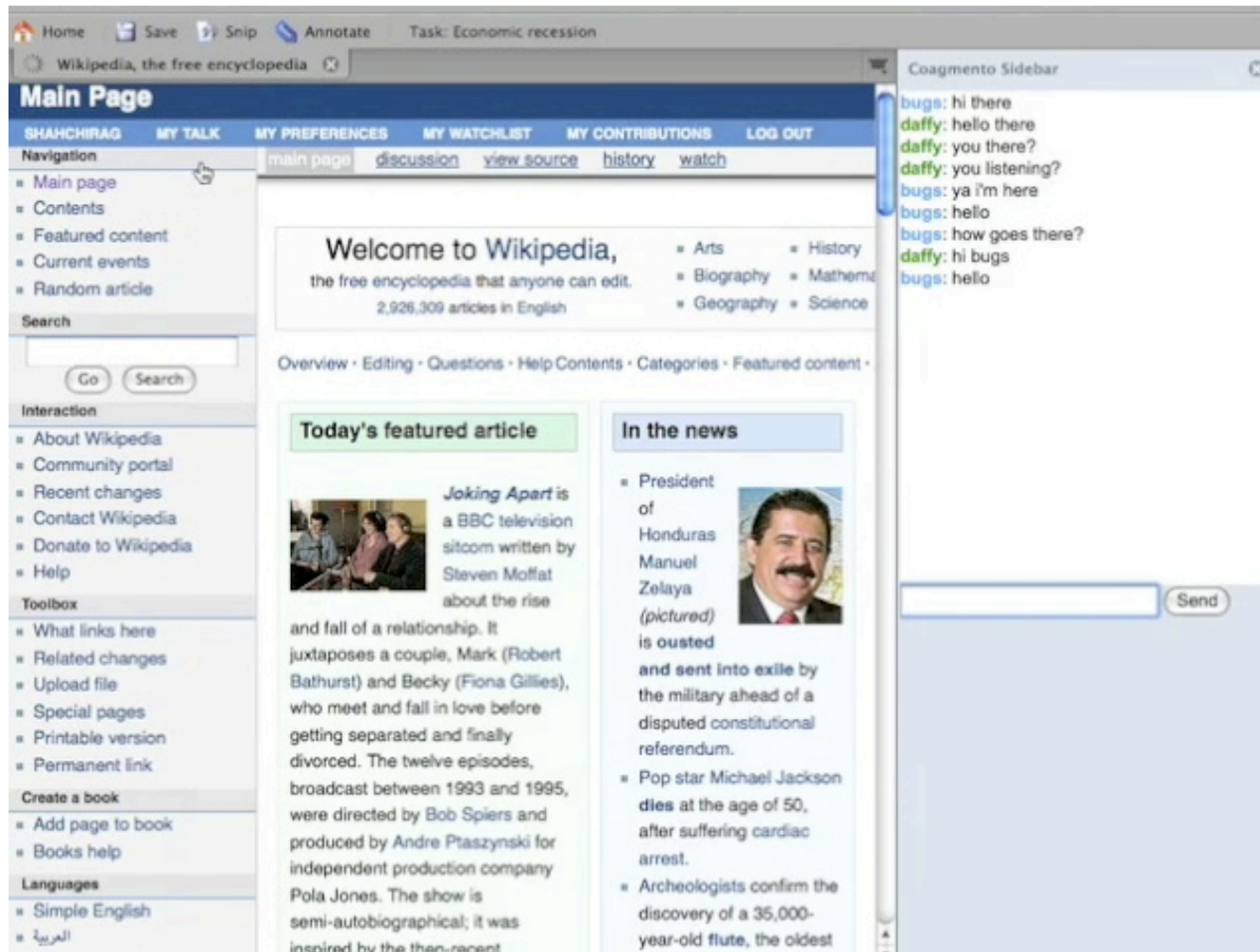
Move to:

### Task

A leading newspaper has hired your team to create a comprehensive report on the causes and consequences of the current economic recession in the US. As a part of your contract, you are required to collect all the relevant information from any available online sources that you can find.

- Reasons behind this recession.**  
[Recession - Wikipedia, the free encyclopedia](#)  
 In economics, a recession is a general slowdown in economic activity over a sustained period of time, or a business cycle contraction.  
a definition from wikipedia
- Effects on some major areas, such as health-care, home ownership, and financial sector (stock market).**
- Unemployment statistics over a period of time.**
- Proposal, execution, and effects of the economy stimulation plan.**  
[Economic Stimulus - The New York Times](#)  
 Nearly three months after President Obama approved a \$787 billion economic stimulus package, intended to create or save jobs, the federal government has paid out less than 6 percent of the money, largely in the form of social service payments to states. May 13, 2009  
some stats.
- People's opinions and reactions on economy's downfall.**

# Study design: conditions



**Condition-1**  
Communication  
Workspace awareness  
Contextual awareness




# Study design: conditions



Home Save Snip Annotate Views: 1 Snippets: 0 Annotations: 0 Task: Economic recession - Viewed: 97, Saved: 2, Queries: 8, Snippets: 3

Field Trip South



John Cephas at Merlefest, 1999, from the Becky Johnson Collection

In March of this year, the music world lost one of its best and brightest when [John Cephas](#), world-famous proponent of the famous Piedmont style of guitar picking, passed away. Cephas, widely known for his partnership with harmonica player Phil Wiggins, was a regular on the blues festival circuit, bringing the mellow sounds of the Piedmont to enthusiastic crowds on every continent (except Antarctica - too bad for the penguins!) Winner of a slew of awards (including a National Heritage Fellowship Award in 1989), he tirelessly worked to bring traditional blues music to audiences old and new.

Take a moment and remember Mr. Cephas with us, and enjoy Piedmont style picking at its very best.

Listen to a clip of Cephas & Wiggins performing "Twelve Gates To The City", from the 1995 album [Cool Down](#).

Coagmento Sidebar

bugs: hi there  
daffy: hello there  
daffy: you there?  
daffy: you listening?  
bugs: ya i'm here  
bugs: hello  
bugs: how goes there?  
daffy: hi bugs  
bugs: hello  
daffy: want to split up this task?

Send

Queries Pages Snippets

swine flu (bing)  
economic recession (bing)  
recession (wikipedia)  
economic recession (cnn)  
swine flu (searchme)  
Collaborative Information Seeking (wikipedia)  
wwdc 2009 keynote (google)  
meaning of life (bing)

## Condition-2

Communication

Workspace awareness

Contextual awareness


Personal peripheral awareness

# Study design: conditions



Home Remove Snip Annotate Views: 2 Snippets: 2 Annotations: 2 Task: Economic recession - Viewed: 112, Saved: 5, Queries: 8, Snippets: 7

Field Trip South



John Cephas at Merlefest, 1999, from the Becky Johnson Collection

In March of this year, the music world lost one of its best and brightest when [John Cephas](#), world-famous proponent of the famous Piedmont style of guitar picking, passed away. Cephas, widely known for his partnership with harmonica player Phil Wiggins, was a regular on the blues festival circuit, bringing the mellow sounds of the Piedmont to enthusiastic crowds on every continent (except Antarctica - too bad for the penguins!) Winner of a slew of awards (including a National Heritage Fellowship Award in 1989), he tirelessly worked to bring traditional blues music to audiences old and new.

Take a moment and remember Mr. Cephas with us, and enjoy Piedmont style picking at its very best.

Listen to a clip of Cephas & Wiggins performing "Twelve Gates To The City", from the 1995 album [Cool Down](#):

by Carrie 0 Comments Tags: blues, john cephas

Coagmento Sidebar

bugs: hi there  
daffy: hello there  
daffy: you there?  
daffy: you listening?  
bugs: ya i'm here  
bugs: hello  
bugs: how goes there?  
daffy: hi bugs  
bugs: hello  
daffy: want to split up this task?  
bugs: hi there

Send

Queries Pages Snippets

bugs: swine flu (bing)  
bugs: economic recession (bing)  
daffy: recession (wikipedia)  
bugs: economic recession (cnn)  
daffy: swine flu (searchme)  
bugs: Collaborative Information Seeking (wikipedia)  
bugs: wwdc 2009 keynote (google)  
bugs: meaning of life (bing)

## Condition-3

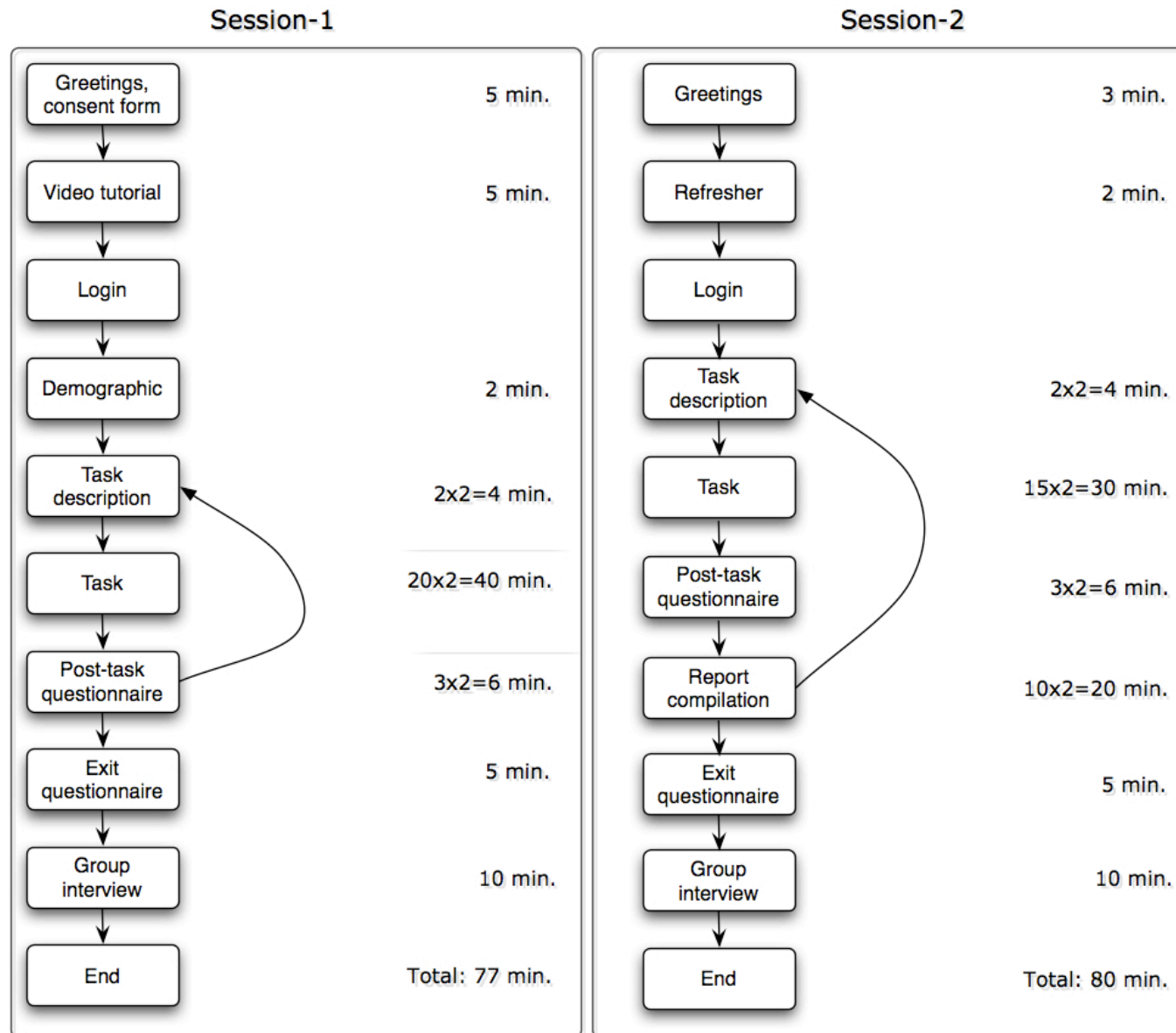
Communication

Workspace awareness

Contextual awareness

Group peripheral  
awareness

# Study design: sessions





# Study design: subjects and tasks



84 subjects (42 pairs)

Two sessions

14 pairs per condition

27 males, 57 females

Age 17 to 50

## **Tasks:**

1. Economic recession
2. Social networking

# Questions and findings



Is there a significant difference in .....

between conditions?

Hypotheses

1. Ease of use and satisfaction

$1 \sim 2 \sim 3$

2. Productivity

$1 \leq 2 \leq 3$

3. Communication

$1 > 2, 3 > 3, 2 > 3$

4. Engagement

$1 \leq 2 \leq 3$

5. Awareness

$1 \leq 2, 3 < 3, 2 < 3$

## Finding



Basic group awareness components offer substantial advantages to collaborative information seeking without adding new burdens to users.

# Coagmento 2.0 coagmento.org



Lori Mears

Fiancé, toughest critic  
Duke Lemur Center

Coagmento signups this week:  
40+ regular users  
10+ subjects

The screenshot displays the Coagmento 2.0 web interface. The browser address bar shows <http://www.coagmento.org/CSpace/>. The page header includes navigation links: CSpace, Activate, Bookmark, Recommend, Annotate, Snip, Views: 0, Annotations: 0, Snippets: 0, and Project: carrots and sticks. The main content area is titled "Coagmento" and features a sidebar on the left with sections: Collaborators (Add and manipulate collaborators for your projects), Projects (Add and manipulate your projects), Data and Information (Explore data and information about you and your collaborators), Workspace (Explore your collected information and produce results using the workspace), Recommendations (See the recommendations from your collaborators or the system), and Settings (Update your profile, change settings for CSpace and Coagmento plug-in). The main content area includes a welcome message for Chirag Shah, a current project "carrots and sticks", and a list of known issues. The right sidebar contains a "Coagmento Sidebar" with a "Chat" section (Reload the Sidebar, Chat, Hide status, Show date, Show time) and a "History" section (Searches, Bookmarks, Objects). The chat log shows a conversation between bugs and daffy. The history section lists searches for "bugs bunny", "daffy duck", and "bugs bunny".

Coagmento – Collaborative Information Seeking, Synthesis, and Sense-making

<http://www.coagmento.org/CSpace/>

CSpace Activate Bookmark Recommend Annotate Snip Views: 0 Annotations: 0 Snippets: 0 Project: carrots and sticks

Coagmento – Collaborative Inform...

## Coagmento

**Collaborators**  
Add and manipulate collaborators for your projects.

[Add someone](#) as a collaborator.  
Collaborators for the current project:  
[Daffy Duck](#)  
[Bugs Bunny](#)  
[See all your collaborators](#)

**Projects**  
Add and manipulate your projects.

**Data and Information**  
Explore data and information about you and your collaborators.

**Workspace**  
Explore your collected information and produce results using the workspace.

**Recommendations**  
See the recommendations from your collaborators or the system.

**Settings**  
Update your profile, change settings for CSpace and Coagmento plug-in.

Welcome, **Chirag Shah** to your [CSpace](#).  
You have [6 projects](#) and [9 collaborators](#).  
Current project: **carrots and sticks**  
[Select a different project.](#) [Help](#) [Logout](#)

Download [Coagmento Beta 2](#) (Release date: 10/08/2009)

Welcome to your CSpace - short for Collaborative Space or Coagmento Space (because sometimes you don't need a collaborator!). You can visit your CSpace anytime by clicking on 'CSpace' (home) button on your Coagmento toolbar.

From the menu on the left side, you can do a number of things, such as choosing the project that you want to work with, changing settings, and inviting someone to join you for a project.

Clicking on a bar in the menu will open it up with more options. You can find specific help for each option on their individual pages, which will be displayed right here.

Remember, this is work-in-progress, so things will keep changing. But don't worry. All your data and other information will remain intact. And hey, do let us know what you think!

Known issues at the moment:

- Toolbar does not update the information immediately. The update happens once the page is reloaded or a new tab or window is selected.
- Data filtering doesn't always work well. There's some bug there.
- Deletion and moving of data items not working.
- Sometimes clicking on a link shows 'Loading..' picture and doesn't load the actual page. If you see this for more than a few seconds, click on that link again.
- There is an issue with changing the projects. When you choose a different project as your active project, you should see the 'Current project' name changed above. If it doesn't, reload the page.
- Updating profile picture is not functional.
- When collecting objects other than text snippets, source information (e.g., URL) not captured.

**Coagmento Sidebar**

[Reload the Sidebar](#)

**Chat**  
[Hide status](#) [Show date](#) [Show time](#)

bugs: hey there  
daffy: what's up?  
bugs: looking for carrots  
daffy: of course you are!  
daffy: good luck! ;)

**History**

**Searches** **Bookmarks** **Objects**

Sort by: [Title](#) | [Source](#) | [Date](#) | [Author](#)

daffy: bugs bunny daffy duck animation  
daffy: movie (google)  
daffy: daffy duck (live)  
bugs: bunny (cnn)  
bugs: bugs bunny (yahoo)

**Notepad**

**Notifications**

Done



## Issues and challenges

- Extend single-user models to collaborative users.
- Identify situations appropriate for collaboration.
- Provide specialized tools and support for collaboration.
- Design integrated system solutions.

**Shah, Chirag**, Marchionini, Gary, and Kelly, Diane (2009). Learning Design Principles for a Collaborative Information Seeking System. Proceedings of ACM SIGCHI 2009. Boston, MA: April 4-9, 2009.

**Shah, Chirag**. Designs for Systems to Support Collaborative Information Behavior (in press). Book chapter to be published in Foster, Jonathan (Ed.) *Collaborative Information Behavior*. IGI Global, Hershey PA.



# Social Information Seeking

# Seeking for the wisdom of crowds



**Based on your own family's experience, what do you think we should do to improve health care in America?**

4962 ☆ In Other - General Health Care - Asked by Hillary Clinton - 38022 answers - 3 years ago



**How can we engage more people in the democratic process?**

4466 ☆ In Civic Participation - Asked by Barack Obama - 17377 answers - 3 years ago



**What should we do to free our planet from terrorism?**

4146 ☆ In Civic Participation - Asked by Dr. APJ Abdul Kalam - 29727 answers - 3 years ago



**How will Sanjaya's continued success on American Idol impact the show's credibility?**

2622 ☆ In Reality Television - Asked by Constantine Maroulis - 24754 answers - 3 years ago



**What would you do to stop wasteful government spending in Washington?**

2071 ☆ In Government - Asked by John McCain - 16709 answers - 3 years ago



**What will you remember most about Michael Jackson?**

1862 ☆ In Celebrities - Asked by Jack - 6416 answers - 5 months ago



## Our collection (as of today)

### Yahoo! Answers

Questions: 2 million+

Answers: 13 million+

Avg. answers per question: 6+

Users: ~1 million

### Google Answers

Questions: 153,343

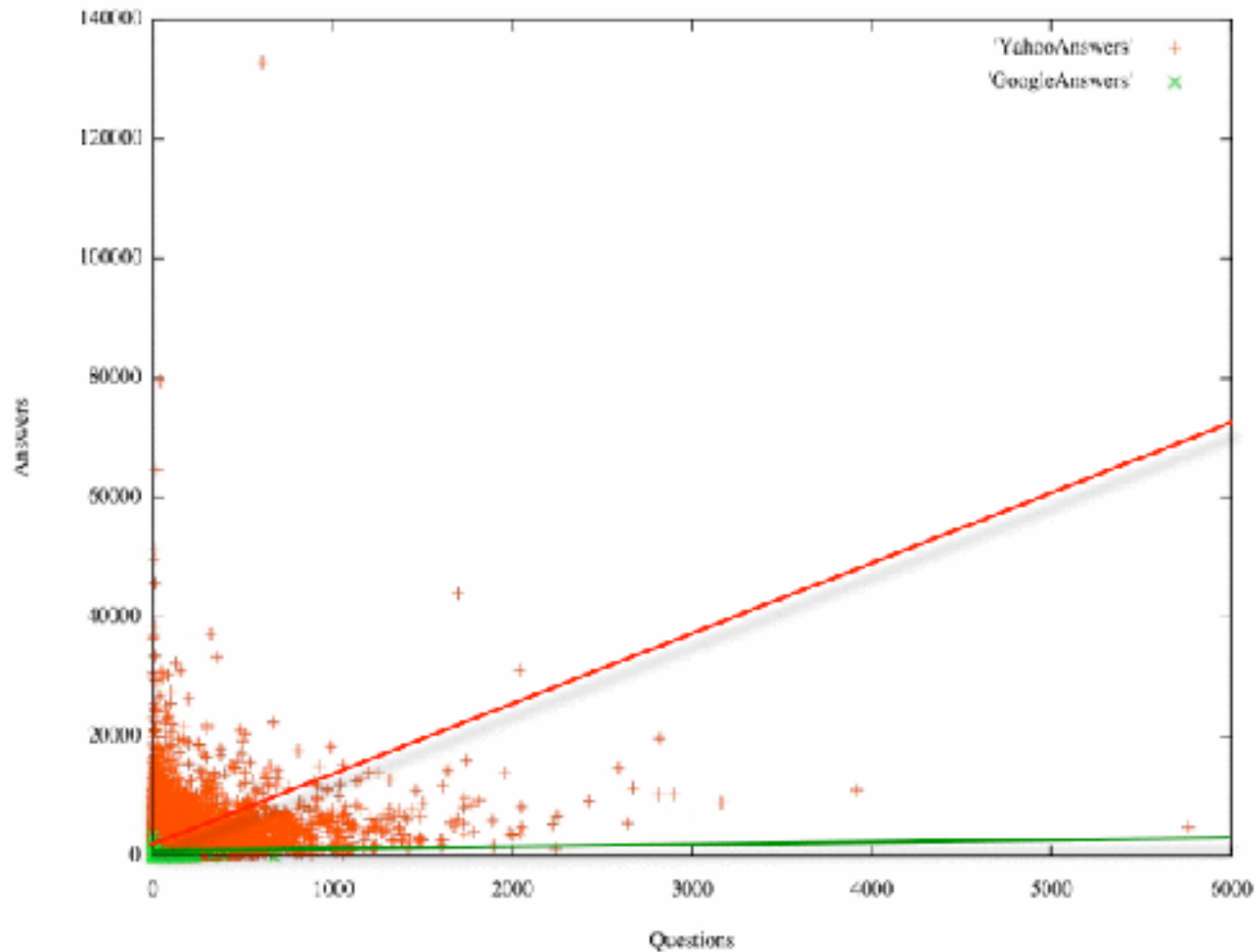
Answers: 56,835

Avg. answers per question: 0.37

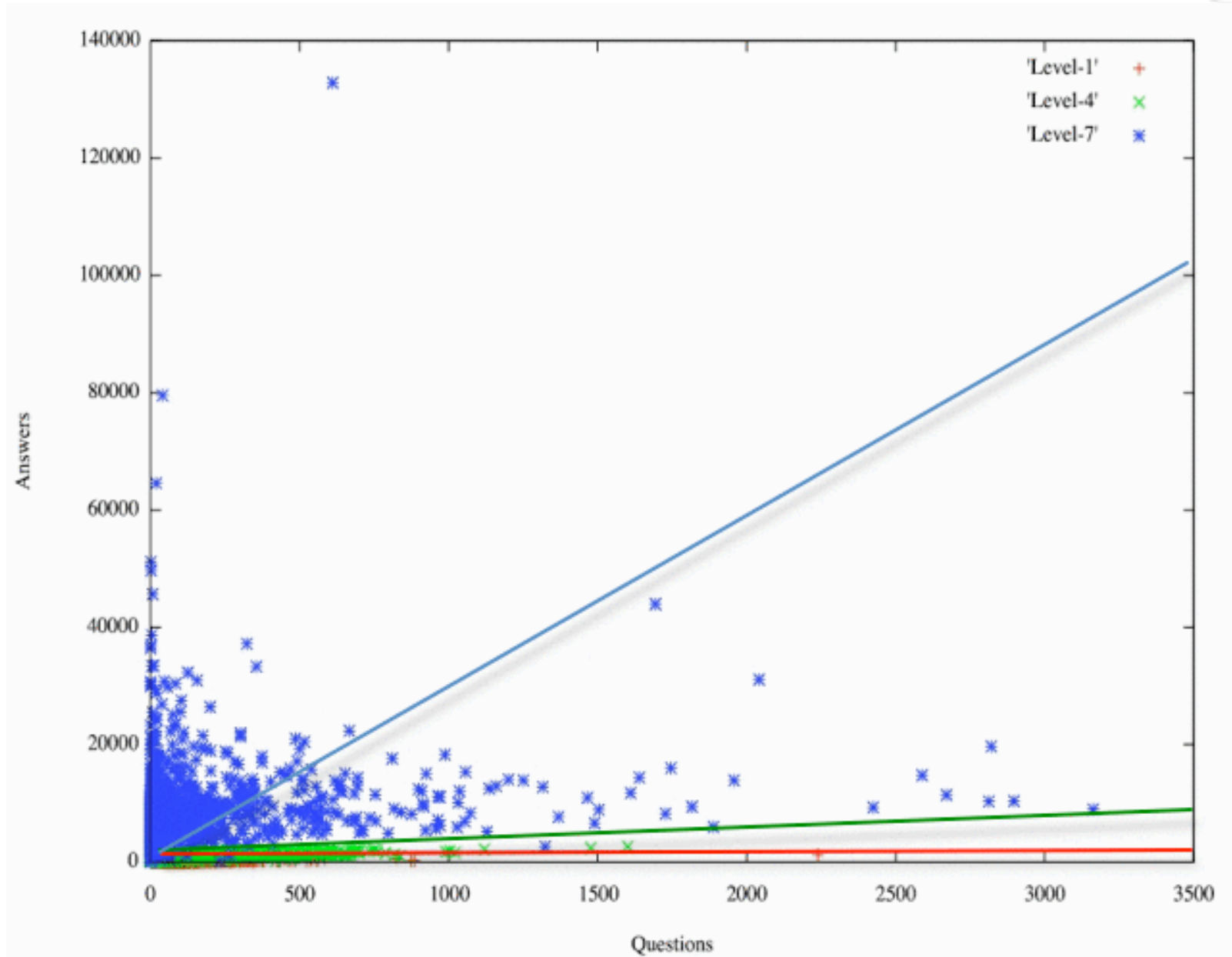
Users: 83,454 + 534



# Yahoo! Answers vs. Google Answers



# Consumers and contributors



## Seeking information in online communities



- Social capital is a big driving force.
- Aim for self-sustainable communities.
- Often, crowd is the smartest “person”!

# Ongoing work



Jeffrey Pomerantz  
Information & Library Science  
UNC Chapel Hill



- Measuring content quality – proposed Turk study.
- Developing models for quality prediction.
- Digital reference vs. social Q&A.



## Issues and challenges

- Motivations
- Expectations
- Evaluating content quality and user satisfaction

**Shah, Chirag**, Oh, Sanghee, and Oh, Jung Sun (2009). Research agenda for Social Q&A. *Library & Information Science Research (LISR)*, 31(4), 205-209.



# Information Extraction & Discovery



# Collecting contextual information



Contextual information helps makes sense of an information object.



Gary Marchionini

Information & Library Science  
UNC Chapel Hill



Helen Tibbo

Information & Library Science  
UNC Chapel Hill



Cal Lee

Information & Library Science  
UNC Chapel Hill



Paul Jones

Journalism & Mass Comm.  
UNC Chapel Hill

## ContextMiner

### VidArch campaigns

- Elections 2008
- Energy
- Epidemics
- Health
- Natural disasters
- Truth commissions

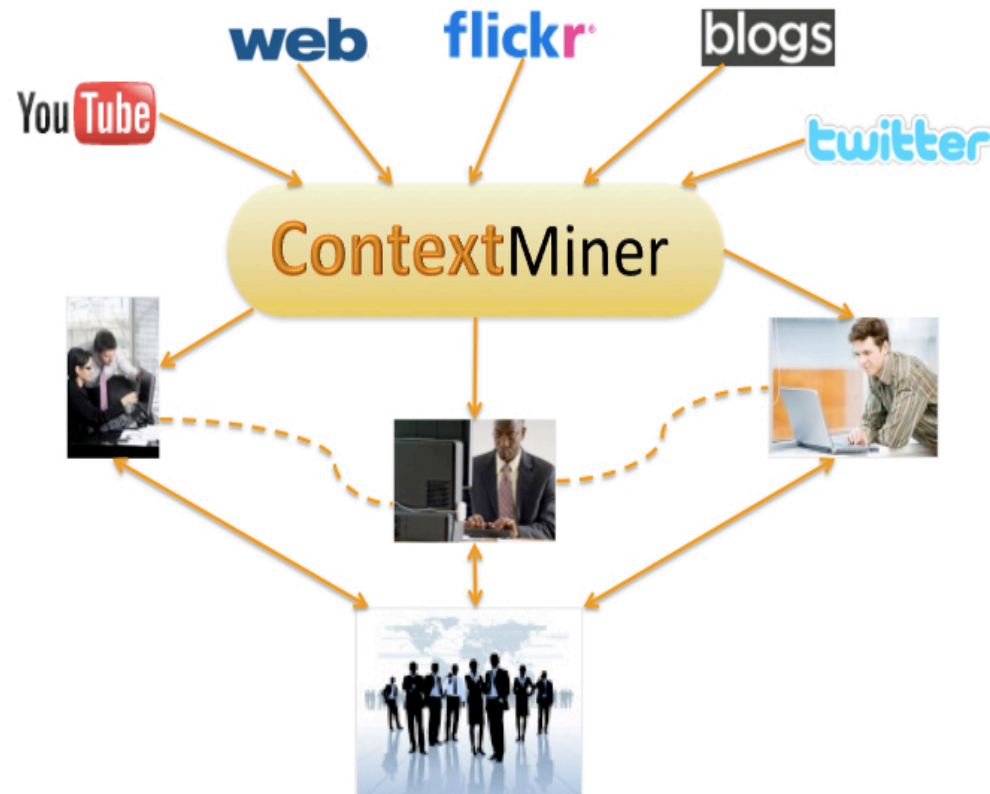
### Data

- Nearly 100,000 videos
- Thousands of user profiles
- Millions of comments
- Contextual attributes for each
- Over two years of collection

# ContextMiner today



[www.ContextMiner.org](http://www.ContextMiner.org)



- 300+ users
- 800+ campaigns
- Millions of objects (videos, blogs, webpages, etc.)



# ContextMiner users

## US Academic Institutes

- California State University
- Drexel
- Harvard University
- Kent University
- NC State University
- Northwestern University
- Stanford University
- University of California at Santa Barbara
- University of Hawaii
- University of Idaho
- University of Maryland
- University of Massachusetts Amherst
- University of Michigan
- University of North Carolina (Chapel Hill and Greensboro)
- University of Pennsylvania
- University of Puerto Rico
- University of Texas at Austin
- University of Wisconsin (Madison and Milwaukee)
- Yale University



# ContextMiner users

## Non-US Academic Institutes

- Aarhus University, Denmark
- American University of Beirut, Lebanon
- Chaitanya PG College, India
- Delft University of Technology, The Netherlands
- Education AU, Australia
- Manchester University, UK
- National University of Singapore
- PRRM Engineering College, India
- Simon Fraser University, Canada
- University of Alberta, Canada
- University of Florence, Italy
- University of Hong Kong
- University of London, UK
- University of Paris, France
- University of Seville, Spain
- University of Sydney, Australia
- Université de Versailles-Saint-Quentin, France
- Westminster College, UK



# ContextMiner users

## Organizations

- Academy of Motion Picture Arts and Sciences (Oscars)
- Bauer Media, UK
- Cruise Addicts
- Elsevier
- European Archive
- Google
- IBM
- Library of Congress
- New South Wales Rural Fire Service, Australia
- Optimedia
- Razorfish
- R/GA
- SACE (Southern Alliance for Clean Energy)
- Soft Experience, France
- State Archive in Lublin, Poland
- US Navy
- WRAL TV Station, Raleigh NC

# ContextMiner tomorrow



Paul Jones

Journalism & Mass Comm.  
UNC Chapel Hill



Sri Kalyanaraman

Journalism  
UNC Chapel Hill



John Conway

Director, Creative Services  
WRAL TV Station, Raleigh NC



Kirk Ross

Editor  
Carrboro Citizen Newspaper



Michael Tiemann

Vice President  
Open Source Affairs, Red Hat

**Shah, Chirag** (2009). Mining Contextual Information for Ephemeral Digital Video Preservation. *International Journal of Digital Curation (IJDC)*, 4(1).

**Shah, Chirag** (2009). ContextMiner: Supporting the Mining of Contextual Information for Ephemeral Digital Video Preservation. *International Journal of Digital Curation (IJDC)*, 4(2).



# More power to the people



TubeKit	Extract Links	Video Data	User Data	<input type="text"/>	<input type="button" value="Search YouTube"/>	<input type="button" value="By Relevance"/>
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# Helping people with contextual information



Dhavan Shah

Journalism & Mass Comm.  
Univ. of Wisconsin-Madison



**CHES**

Comprehensive Health  
Enhancement Support System

Issues being studied:

- Proposition 8 in California
- Question 1 in Maine
- Social information seeking for cancer patients

Thorson, Kjerstin, Borah, Porismita, Ekdale, Brian, Namkoong, Kang, and **Shah, Chirag** (in press). YouTube and Proposition 8: a case study in video activism. To be published in *Journal of Information, Communication, and Society (iCS)*.

# Discovering patterns from contextual information



Stuart Shulman  
Political Science  
UPitt & UMass Amherst

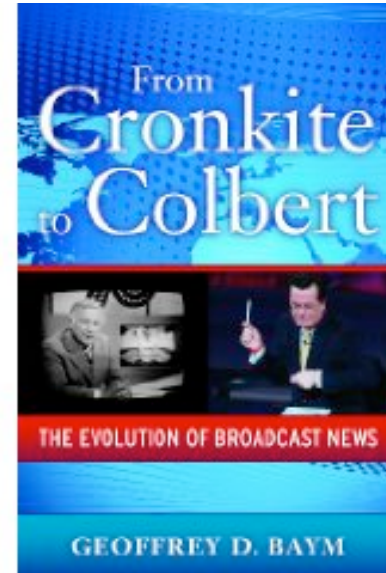


**Shah, Chirag** (in press). Supporting Research Data Collection from YouTube with TubeKit. To be published in *Journal of Information Technology & Politics*.

# Republic of Web



Geoffrey Baym  
Media Studies  
UNC Greensboro



- Republic of Web – A Web of, by, and for the people.
- Track the spread of primary information through secondary channels.
- Information derivatives and their interconnections to study the population, their preferences, and behavioral patterns.

# Republic of Web



<http://www.colbertnation.com/the-colbert-report-videos/227618/may-13-2009/michael-pollan> (380)  
<http://www.colbertnation.com/the-colbert-report-videos/220021/june-03-2009/eric-schlosser> (295)  
<http://www.thedailyshow.com/watch/thu-july-2-2009/robert-kenner> (111)  
<http://www.thedailyshow.com/watch/thu-may-14-2009/lisa-p-jackson> (94)  
<http://www.colbertnation.com/the-colbert-report-videos/230610/june-16-2009/jim-rogers> (267)  
<http://www.colbertnation.com/the-colbert-report-videos/232640/july-01-2009/nicholas-kristof> (358)  
<http://www.thedailyshow.com/watch/thu-july-16-2009/robert-glenn> (540)

[Michael Pollan Trades Barbs With Stephen Colbert | The Food Section ...](#) (33)  
[The Food Section - Food News, Recipes, and More | The Food Section ...](#) (999)  
[The Food Section - Food News, Recipes, and More | The Food ...](#) (0)

[Michael Pollan Trades Barbs With Stephen Colbert | The Food Section ...](#)  
[New York - Fork in the Road - The Blogroll Gazette--Bruni Bombshell ...](#)  
[le cochon de chef](#)  
[soupnancy - My Blog: Bits and bites](#)  
[News | Melgab International CC](#)  
[Megite Food News: What's Happening Right Now](#)  
[Michale Pollan - news](#)  
[Your FeedBlitz Updates](#)  
[Specialty teas gain foothold - Related Stories - National Restaurant ...](#)  
[The Food Section - Food News, Recipes, and More | The Food Section ...](#)  
[Stephen Colbert : Pictures, Videos, Breaking News](#)  
[The Food Section:](#)  
[the Food on Kosmix](#)  
[Megite Food News: What's Happening Right Now](#)  
[SmartBrief: culinary - culinary arts - culinary competitions -](#)

Thursday, December 03, 2009

## The Food Section

DISCOVER  
BANK

### Michael Pollan Trades Barbs With Stephen

The Colbert Report  
Michael Pollan

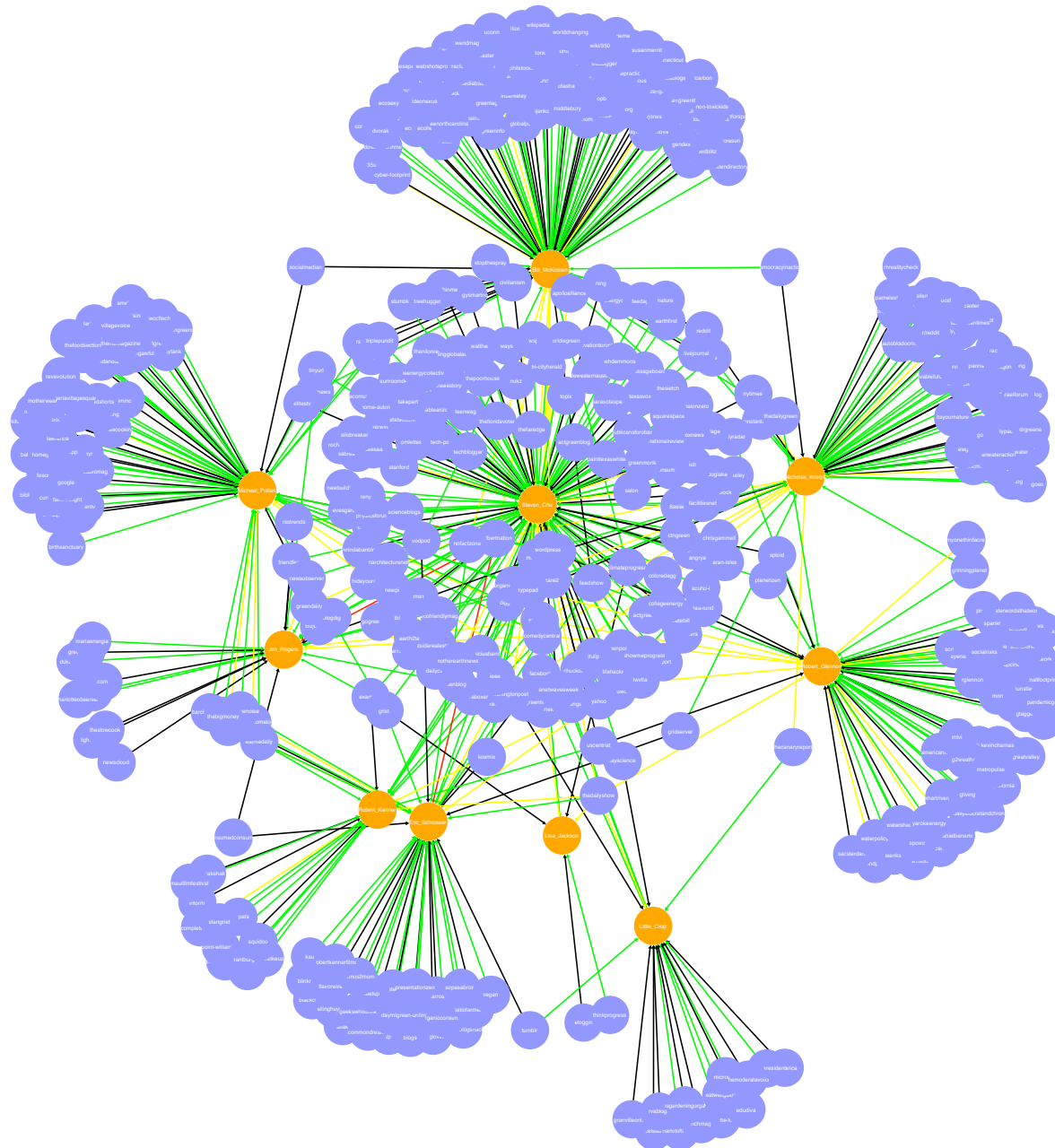
Mon - Thurs 11:30pm / 10:30c



In this hilarious interview on "The Colbert Report," author Michael Pollan and Stephen Colbert argue about American cheese, food science, crack, soda, and advancements in Cheetos; Pollan discovers live on TV that he was credited high fructose corn syrup for his healthy head of hair.

POSTED BY JOSH FRIEDLAND ON MAY 14, 2009 IN [Television](#), [What's Fresh](#) | [L](#)

# Republic of Web







# Issues and challenges

- What is context?
- How much is enough?
- Evaluation
- Methods for knowledge discovery



## Takeaways

- Many situations call for **multi-session** and/or **multi-person** information seeking.
- Often we need more information (**contextual, related**) about an object to make sense of it.
- **Social aspect** could play a key role in information seeking.
- Need to consider **integration, cognitive load, and adoption** factors.

## Sites and services



**Coagmento.org**

**ContextMiner.org**

**TubeKit.org**

**RepublicOfWeb.org**

**XCreator.org**

<http://idl.ils.unc.edu/~chirag/DiscoverInfo/>

<http://idl.ils.unc.edu/~chirag/DIToolkit/>



# Many thanks to...

## Associates and Collaborators

Carrboro Citizen Newspaper

FXPAL

Internet Archives

Library of Congress

Microsoft Research

Red Hat

University of Massachusetts at Amherst

University of North Carolina at Chapel Hill

University of North Carolina at Greensboro

University of Pittsburgh

University of Wisconsin at Madison

WRAL TV Station



## Disciplines of Collaborators

Communications

Computer Science

Engineering

Health Science

Information & Library Science

Journalism

Mass Media, Media Studies

Political Science

## Funding Support

ACM                      NCR

Google                      NSF

IEEE                      SIG USE

Microsoft                      UNC