Exploratory Search Interfaces to Support Image Discovery

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UNIVERSITY OF MARYLAND
Interdisciplinary research community
- Computer Science & Psychology
- Information Studies & Education

(www.cs.umd.edu/hcil)
Scientific Approach (beyond user friendly)

• Specify users and tasks
• Predict and measure
  • time to learn
  • speed of performance
  • rate of human errors
  • human retention over time
• Assess subjective satisfaction
  (Questionnaire for User Interface Satisfaction)
• Accommodate individual differences
• Consider social, organizational & cultural context
Design Issues

• Input devices & strategies
  • Keyboards, pointing devices, voice
  • Direct manipulation
  • Menus, forms, commands

• Output devices & formats
  • Screens, windows, color, sound
  • Text, tables, graphics
  • Instructions, messages, help

• Collaboration & communities
• Manuals, tutorials, training
U.S. Library of Congress

• Scholars, Journalists, Citizens
• Teachers, Students
American Memory
Introduction

Historical Collections for the National Digital Library

Collection Samples

American Memory is the Library of Congress offering of primary-source and archival collections relating to American culture and history. These collections are the Library of Congress's key contribution to the national digital library. Most of these collections have been drawn from the holdings of the Library's special collections divisions. Each collection is accompanied by introductory material, users' guides, and bibliographies for further research. Only a small portion of the huge collections of the Library of Congress is digitized. The Digital Collections mainly include historical and uncopyrighted or out-of-copyright materials. It is a constantly growing collection that contains both primary materials and secondary materials (e.g. indexes, finding aids).

The available services are listed on the left side of the screen. We recommend that you browse and select collections of interest. The Information Desk provides special tours and answers frequently asked questions. A particular effort has been made to provide information for educators and life-long learners (the "learning pages") to help use the collections.

Sample Special Presentations

- The Progress of a People: Special Presentation from the African-American Pamphlets from the Daniel A. P. Murray Collection, 1880-1920
- Become a Historical Detective
- The Events of Civil War Digital Resource Guide and Related Training Resources
Library of Congress
American Memory
Browse & Select Collections

Collection Overview

Time


1880 1900

Collection Filters

Topic

Regional
Government and Law
Language and Literature
Fine and Decorative Arts
Business and Economics
History
Health and Medicine
Technology and Applied Science

Format

Movie
Sound
Map
Photograph
Manuscript

Place

All World
Canada
South Emphasis
Northeast Emphasis
Mexico
Midwest Emphasis
Caribbean

Collection List

Order Collections by: Title Time Topic Format Place

# Collections: 19 # Visible: 19 # Selected: 19

To browse a Collection, click on its title

Checked Collections are selected for Quick and Enhanced searches

A - F
☑ Aria Shimmian collection (Fake)
☑ Bill Grant Architectural collection (Fake)
☑ Bruno Boating Collection (Fake)
☑ Coolidge-Consumerism Collection
☑ Earl Jones collection (Fake)
☑ Emma Johnson clothing collection (Fake)
☑ Ford Automobile History Collection (Fake)

G - L
☑ Gary Jones - Railroad Safety Collection (Fake)
☑ Jones music collection (Fake)
☑ Life History Manuscripts from the Folklore Project, WPA Federal Writers’ Project, 1936-1940

M - R

Select All Clear All
The Coolidge-Consumerism collection assembles a wide array of LC primary-source materials from the 1920s, some 17,000 pages reflecting the prosperity of the Coolidge years, the nation's transition to a mass-consumer economy, and the role of government in this transition. The selective thematic focus and range of formats in this collection represent an effort to assemble topical bodies of material as opposed to reproducing preestablished collection entities.
American Variety Stage:
Vaudeville and Popular Entertainment
1870-1920

Selected Materials from the Library of Congress

Search by Keyword | Browse the Subject or Author Index
Visible Human Explorer (NLM)

- Doctors
- Surgeons
- Researchers
- Students
NASA Environmental Data

- Scientists
- Farmers
- Land planners
- Students
Bureau of the Census

- Economists, Policy makers, Journalists
- Teachers, Students
NSF Digital Government Initiative

- Find what you need
- Understand what you Find

Census, NCHS, BLS, EIA, NASS, SSA

www.ils.unc.edu/govstat/

FedStats
International Children’s Digital Library

Our Mission

We are a library that provides free access to children’s books from around the world. By ensuring access to books from many cultures and in diverse languages, we foster a love of reading, a readiness to learn, and a response to the challenges of world illiteracy.

We invite you to explore our growing library and learn how you can contribute to our efforts.

FEATURED BOOKS

Colorful illustrations with Jeanette Marin
May 8, 2006
Selected by Jeanette Marin, a student at the University of Maryland. Jeanette has three daughters.
Piccolo: Toolkit for 2D zoomable objects

Structured canvas of graphical objects in a hierarchical scenegraph
- Zooming animation
- Cameras, layers

Open, Extensible & Efficient
Java, C#, PocketPC versions

www.cs.umd.edu/hcil/piccolo
Information Visualization: Mantra

• Overview, zoom & filter, details-on-demand
• Overview, zoom & filter, details-on-demand
• Overview, zoom & filter, details-on-demand
• Overview, zoom & filter, details-on-demand
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BLC Explorer: Dual Hierarchies

Graphical Interface for Digital Libraries
www.cs.umd.edu/hcil/west-legal/gridl
BLC Explorer: Dual Hierarchies - subtopic

Graphical Interface for Digital Libraries

www.cs.umd.edu/hcil/west-legal/gridl
BLC Explorer: Dual Hierarchies - details

Graphical Interface for Digital Libraries
www.cs.umd.edu/hcil/west-legal/gridl
CHIM: The Photographs of David Seymour

On the occasion of the fortieth anniversary of Chim's untimely death, those who treasure his work have joined forces to produce an ambitious book, exhibit, and website.

To explore Chim's life and work, click on one of the years in the timeline at the top of the screen.

Visit the exhibition at the International Center of Photography/Midtown
1133 Avenue of the Americas (at 43rd St.), New York City
September 13 - November 20, 1996
Exhibition Hours: Tuesday 11am - 8pm. Wednesday - Sunday 11am - 6pm
Chim

Chim was born David Szymin on November 20, 1911, in Warsaw, Poland, then a province of Czarist Russia. On becoming a photo-reporter in Paris in 1933, he signed his work "CHIM," a French phonetic abbreviation of his surname, distinctive in its use of capital letters and elegant in its brevity. Life began for David and his sister, Eileen, three years his senior, as the children of Regina and Benjamin Szymin, a respected publisher of Yiddish and Hebrew books. They enjoyed an excellent education in Jewish and secular subjects, with David attending the Jewish Gymnasium Ascolah.

Upon passing his baccalaureate David also went off to Germany, to Leipzig, to the Akademische Staatliche Hochschule für Bildende Künste (Academy of Combined Arts).
UNICEF: Children of War

By 1948 fate dealt Chim a card that had "ace" written all over it. UNICEF (United Nations International Children's Emergency Fund), only recently formed, asked him to take photographs for a book depicting Europe's children in need. It was not a lucrative proposition, but a labor of love, for instead of paying the usual magazine rate of at least one hundred dollars a day, all UNICEF could muster was twenty-six dollars. The project would take twelve weeks, and Chim was to travel to Poland, Hungary, Austria, Italy, and Greece. The purpose was to show the work being done by UNICEF, providing some of Europe's thirteen million children with the barest minimum of necessities: powdered milk, a bowl of soup each day, a pair of shoes, and vaccination.

Tereska, a child in a residence for disturbed children, grew up in a concentration camp. She drew a picture of home on the blackboard. Poland, 1948
©1996 from the Estate of David Seymour

Photograph by Elliott Erwitt.
©1996 Elliott Erwitt
Portraits of Personalities

In those years, Magnum photographers helped each other, not only with their work, but sometimes also emotionally. Just before Magnum was founded, Robert Capa had ended a love affair with Ingrid Bergman. She was then still married to her first husband, the Swedish surgeon Peter Lindstrom, and she was an idol of public and press. Bob felt marrying would not be compatible with his work as a photographer, but they remained friends. In 1950 Ingrid gave birth to her first child with Roberto Rossellini. The world press hounded her for pictures, at the same time reviling her for having left her first husband and daughter. Chim was the only one Ingrid allowed to photograph her. Ingrid became, as Chim used to say, his "favorite subject." Two years later, Chim went down once again to Santa Marmella, and took the now-classic photographs of Ingrid and the twins. Ingrid soon wrote to him:

Chim and Marilyn Monroe at The 21 Club. New York City, circa 1952.

Photograph by Burt Glinn.
©1996 Burt Glinn

Sophia Loren at home. Naples, 1955
©1996 from the Estate of David Seymour

More Pictures
Venice. Mrs Peggy GUGGENHEIM in her palace on the Grand Canal.

See related features:

Book: David Seymour (Chim)
Portfolio: SED_CENTERPANEL
Distribution: Book DAVID SEYMOUR-“CHIM”
Distribution: Book CLOSE ENOUGH
Book: AFTER THE WAR WAS OVER
Book: CHIM - The Photographs of David Seymour
Book: David Seymour Exhibition Catalogue

Image reference: PAR82161 (SED1955001 W00068/07C)

Hide Keywords:
Canal, Carree, Dog, Exterior, Flat roof, Fortune, Glamour, GUGGENHEIM Peggy, Italy, Pet, Portrait, Seated, Sunglasses, Venice (Italy), White people

ITALY. Rome. 1955. Sophia LOREN.

From original feature : ITALY.Rome. Sophia LOREN, Italian actress, at home. by David Seymour

Image reference: NYC40337 (SED1955006 K049)

Hide Keywords:
Apartment, Exterior, Glamour, LOREN Sophia, Portrait, Residence (Personnel)
Rome (City), Seduction, Sensuality, Shorts, White people, Woman - 25 to 35 years
Solving Image Retrieval = Cleaning Up Air Pollution

• Family of problems demands multiple solutions
  → Explode the problem

• What kinds of images?
• What kinds of image collections?
• What kinds of searches?

• Improve technology &
  Design human-centered solutions
Exploratory Search Motivations

• Users' knowledge of the data is incomplete

• Users' tasks are vaguely specified

• Indexes don’t match users' search request
PhotoFinder: Drag-and-Drop Annotation

Library Viewer

Collection Viewer

Photo Viewer
SAPHARI: Cluster by clothing

Semi-Automatic PHoto Annotation and Recognition Interface
www.cs.umd.edu/hcil/saphari/
SAPHARI: Cluster by clothing

Human Clothing Model

Face Height

Face Height * 1/2

Face Height * 2

Detected Face

Neck

Upper Body Clothing

Pick color samples in rectangle, more weight on upper area.

Semi-Automatic PHoto Annotation and Recognition Interface
Bongwon Suh & B. Bederson, 2003
Riya Photo Search

We use face recognition, text recognition, and more to look inside the photograph so you can find the photo you want. Search above or browse below.
Photo annotation methods

- Context at capture
- Automated annotation at capture
- Automated analysis
- Human annotation during ingest
- Social annotation (tagging & folksonomies)
- Continuous human annotation
- Annotation by use
Exploratory Search Motivations

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- Users' tasks are vaguely specified
- Indexes don't match users' search request
Exploratory Search Strategies

• Users' knowledge of the data is incomplete
  • Provide users overviews - show the whole database
  • Allow multiple perspectives
Exploratory Search Strategies

• Users' knowledge of the data is incomplete

• Users' tasks are vaguely specified
  • Interfaces shape process of query formulation
  • Allow multiple starting points
  • Support iterative search
  • Allow marking or collections
Exploratory Search Strategies

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• Users' tasks are vaguely specified

• Indexes don’t match users' search request
  • Reveal your data
  • Expose indexes
  • Provide multiple facets
  • Show categorized search results
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  • Show categorized search results
Research Methods

• Controlled Experiments
  • Theory-driven, hypothesis testing
  • Modify Independent Variables \rightarrow Measure Dependent Variables

• Ethnographic Methods

• Surveys & Questionnaires

• Logging & Automated Metrics

http://www.otal.umd.edu/charm/
The Creativity & Cognition Conference series began in 1993 to foster a lively multidisciplinary event and practice. Rigorous research is helping to define the essential foundations of creativity and goals, and practice. Success in creative thinking is manifesting itself in the development of tools for discovery and software adaptation and gradual refinement. Educators and developers will understand and use tools can feature two elegant evening receptions at prominent Washington, DC locations:

- National Academy of Sciences (June 13)
- Corcoran Gallery of Art (June 14)

Important Dates

- Papers Deadline: December 15, 2006
- Notification: February 19, 2007
- Revised papers: March 19, 2007

For More Information

• Visit the HCIL website for 350 papers & info on videos
  www.cs.umd.edu/hcil

• Conferences & resources: www.infovis.org

• See Chapter 14 on Info Visualization

• Edited Collections:
  *Readings in Information Visualization: Using Vision to Think*
  *The Craft of Information Visualization: Readings and Reflections*
For More Information

- **Treemaps**
  - HiveGroup: [www.hivegroup.com](http://www.hivegroup.com)
  - Smartmoney: [www.smartmoney.com/marketmap](http://www.smartmoney.com/marketmap)
  - HCIL Treemap 4.0: [www.cs.umd.edu/hcil/treemap](http://www.cs.umd.edu/hcil/treemap)

- **Spotfire**: [www.spotfire.com](http://www.spotfire.com)

- **TimeSearcher**: [www.cs.umd.edu/hcil/timesearcher](http://www.cs.umd.edu/hcil/timesearcher)

- **Hierarchical Clustering Explorer**: [www.cs.umd.edu/hcil/hce](http://www.cs.umd.edu/hcil/hce)
Minining operations, Pennsylvania coal fields (1904)
The film opens on an area covered with snow where the following operations are visible: track laying, and dirt moving by explosion, grader, steam shovel, and steam engine.

Genre: Historical
Keywords: Mines and mineral resources--Pennsylvania; Actuality--Shorts
Duration: 00:02:25
Popularity (downloads): 310

The Story of Hoover Dam, segment 04 of 12 (1996)
Construction began with diverting the Colorado River around the dam site

Genre: Documentary
Keywords: Hoover Dam; Construction; Dam
Duration: 00:02:30
Popularity (downloads): 698

Lake Powell, segment 03 of 11 (1997)
Construction of the dam began in October, 1956

Genre: Documentary
Keywords: Construction; Dam
Duration: 00:02:17
Popularity (downloads): 330

Hoover Dam Construction, segment 06 of 17 (1996)
The canyon walls were prepared to receive the abutments of the dam

Genre: Documentary
Keywords:
Duration: 00:01:47
Popularity (downloads): 298
We found 7,422 photos about chi2006.

View: Most relevant • Most recent • Most interesting

We found 926,812 photos about tree.

View: Most relevant • Most recent • Most interesting
Click on any of these keywords to begin a new search.

**RRA, RRA02, RRA02102, Richard Radstone, boredom, caucasian, color image, contemporary, convertible, day, eyes closed, full length, horizontal, latin american and hispanic, leisure activity, lifestyle, one person, only women, outdoors, palm tree, people, photography, recreation, relaxing, road trip, sleeping, sunbathing, transportation, uc1, windshield, woman, young adult, automobile, closed eyes, color, colour, daytime, entertainment, female, full body, hispanic, holiday, latin american, leisure, one, outside, person, relaxation, sleep, slumbering, tanning, transporting, tree, twenty, western european, windscreen, laying, lay, Young Adult, Caucasian, White**
Israel

The plight of the Jews was never far from Chim's consciousness, even, as Cartier-Bresson described it, "with a certain sense of despair at his own situation." However sophisticated and caring he was, however much he enjoyed life, he was conditioned by the circumstances of his background and by the fate of his parents in a world where anti-Semitism was rife. The safe haven of Palestine, later Israel, for those who had survived the Holocaust, was therefore never far from his thoughts. In November 1947, the young United Nations passed a resolution to partition Palestine into two new states, the State of Israel and the State of Palestine. The latter was never formed because the leaders of Egypt, Transjordan, Syria, Iraq, and Lebanon rejected the partition, and immediately upon the formation of the State of Israel in May 1948, the fighting began.