Designing 3D Information Systems
Katy Börner

SLIS Orientation 2002.08.29
Why?

Limited Vision (Flat, 2D)
No Speech
No Gestures

Limited Audio
One Hand Tied Behind Back
Limited Tactile

(Source: George G. Robertson, OZCHI, 1998)
Collaborative 3-D VWs Offer:

- Natural, multi-perceptual interaction engagement - spatial sound, animation, video, … (Brill, 1993).
- Exploitation of spatial metaphors - connecting information to space.
- Sophisticated self representation (avatars wave, dance, …, interact).
- Change of perspective – avatar view or third person view (Loftin, et al., 1993; Dede, et al., 1996)
- Presence (Barfield & Weghorst, 1993) & Telepresence (Steuer, 1995; Biocca, 1995).
- Real context of interaction. Environment supports talk, triggers discussion.
- Shared awareness promotes informal communication - brief, unplanned, frequent (Kraut et al., 1988; Whittaker et al., 1994).
- Abstract concept representation (Byrne, 1996; Winn, 1993).
- Worlds are available online 24/7.
- User logs.
The Collaborative Information Universe @ IU

Purpose:
Aims at the design and evaluation of collaborative 3D online ‘Learning Environments’ for IU faculty.

Technology: Active Worlds, Desktop
Mode: Multiple User

http://iuni.slis.indiana.edu/

User 0

Navigation activity

Object click activity

Click on map to teleport to corresponding 3D space.

William R. Hazlewood and Alan Lin
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Twin-Worlds - Memory Palaces & Mirror Gardens

Memory Palaces
Provide intuitive, efficient, and collaborative document access for a scholarly community.

Mirror Gardens
Visualize user interaction data to evaluate the effectiveness and usability, to optimize design properties, or to examine the evolving user community of a world.

L542 Human Computer Interaction

This course covers
• Basic cognitive psychology issues relevant to HCI.
• Capabilities and limitations of today's input and output devices.
• How to conduct a user and task analysis.
• Interface design and evaluation issues.
• The design and conduction of usability studies.
• The software developer's professional and ethical responsibilities to software users and society as a whole.

Students do weekly readings, provide a presentation on specific readings, design Web projects and participate in class & online discussion.

Class Webpage: http://ella.slis.indiana.edu/~katy/L542/
L575 Interface Design for Collaborative Information Spaces

This course covers

- An overview about the state of the art in text based, 2-dimensional, and 3-dimensional Interface design.
- User and task analysis.
- Interface goals & interface design methods.
- Design for **usability** and **sociability**.
- Empirical evaluation of user interfaces.
- Discussion of fundamental issues in the field.

Students do weekly readings, provide a presentation on specific readings, do JavaScript and 3-D Virtual Worlds projects, and participate in class & online discussion.

Class Webpage: [http://ella.slis.indiana.edu/~katy/L578](http://ella.slis.indiana.edu/~katy/L578)
Visualizing Knowledge Domains

Recent Publications


For more information please contact

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Visualizing Knowledge Domains

- Apply advanced data mining and information visualization techniques to large amounts of, e.g., publication, patent, and grant data.
- Visualizations objectively identify major research areas, experts, institutions, grants, publications, journals, etc. in a research area of interest, to identify interconnections, the import and export of research between fields, the dynamics (speed of growth, diversification) of scientific fields, scientific and social networks, and the impact of strategic and applied research funding programs among others.
- Results are not only interesting for funding agencies but also for companies, researchers, and society.

Author supplied linkage patterns from grants to publications with links highlighted in red for grant 01 P50 AG11715-01.
L597 Information Visualization
(L595 1.5 credit hour WS by Jason Baumgartner)

This course covers

• Perceptual basis of information visualization.
• Data mining algorithms that enable extraction of relationships in data.
• Visualization and interaction techniques.
• Discussions of systems that drive research and development, and
• Future trends and remaining fundamental problems in the field.

Students do weekly readings, provide a presentation on specific readings, do Java projects, and participate in class & online discussion.

Class Webpage: http://ella.slis.indiana.edu/~katy/L697
Information Visualization Software Repository

http://ella.slis.indiana.edu/~katy/L697/code/
Stock Tracker
Larry Mongin & Steve Rice
L542 Introduction to Human Computer Interaction

Examines the human factors associated with information technology and seeks to provide students with knowledge of the variables likely to influence the perceived usability, and hence the acceptability, of any information technology. In so doing it will enable students to progress further towards specialist work in the important field of human-computer interaction.

To view a grade distribution, please select the semester node, i.e. 1-2000, from the hyperbolic tree.

L542, 1-2000
BORNER

Course Grade Distribution for L542

+ A+ A A- B+ B B- C+ C C- D+ D D- F P S I RNR NC NY WWX Other
0 4 9 11 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0
Newsgroup Votes Visualization

David Heald (Collaborator John C. Paolillo)
Hyperbolic Tree Visualization of Roget's Thesaurus
Jason Baumgartner & Tim Waugh (Collaborator John Old)
Springer will publish a selected set of extended papers of the 2001 and 2002 JCDL workshop on "Visual Interfaces to Digital Libraries" in its Lecture Notes in Computer Science (LNCS) series.

The edited book aims to provide a comprehensive coverage of the topic to a wider audience.
Second International Symposium on "Collaborative Information Visualization Environments"
IV 2003, London, UK.

Organizers:
Katy Börner, Indiana University, USA & Raquel Navarro-Prieto, Motorola, UK

Program Committee:
C. Chen, H. Chen, T. Erickson, J. Leigh, S. Mukherjea, Y. Rogers, R. Shibasaki

For more information please consult
http://www.graphicslink.demon.co.uk/IV03/ and
http://vw.indiana.edu/cive03/
Colloquium Prospectus

The National Academy of Sciences recently agreed to sponsor an Arthur M. Sackler Colloquium on "Mapping Knowledge Domains". The colloquium will take place May 9-11, 2003 in the Beckman Center of the National Academy of Sciences, Irvine, CA.

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http://vw.indiana.edu/sackler03