Workshop Report: Visual Interfaces to Digital Libraries at JCDL '02

Contributed by:
Katy Börner
Indiana University
<katy@indiana.edu>

Chaomei Chen
Drexel University
<Chaomei.Chen@cis.drexel.edu>

The Second International Workshop on Visual Interfaces to Digital Libraries was held at the 2nd Joint Conference on Digital Libraries in Portland, Oregon on July 18th, 2002.

The objectives of the workshop were to provide a stimulating forum for researchers in information visualization and digital libraries to share their views, experiences, and plans; to raise the awareness of the state of the art in related fields of research; to identify a research agenda concerning the role of visual interfaces in digital library research; to exploit potentially useful theories, methodologies, and technologies; and to establish long-term interdisciplinary collaboration between researchers from different fields.

This year's workshop introduced several new topics, for example:
- Web based Visual Interfaces
- Mobile Access to Information
- Collaborative Document Spaces
- Usability and Formal Methods
- Real World Needs, Products & Applications

The keynote speech was given by Tim Bray, a co-inventor of XML and founder of Antarti.ca Systems. In his talk, entitled "Design Criteria for Visual Interfaces to Anything", Tim Bray argued that visual interfaces are a necessity for the digital library in particular when datasets become too big to be displayed on a single screen. Drawing on the work of Edward Tufte and other pioneers he laid out two sets of criteria, one for where visualization is appropriate and the other for excellence in doing it. He illustrated his main points using Antarcti.ca's visual interfaces to PubMed, Map.Net, and VCDeal map.

During the break the WS participants had a chance to experience a diverse range of interactive demonstrations of visual interfaces to digital libraries. The following demonstrations were included:
- Interactive Information Visualization in the Digital Flora of Texas by John Leggett, Texas A&M University
- 2D and 3D Visualization of Large Information Spaces by Carlos Proal, Universidad de las Americas-Puebla, Mexico
- ENVISION_ODL a Lightweight Protocol between Digital Libraries and Visualization Systems by Rao Shen, Virginia Tech
- James Burke's Knowledge Web by Patrick McKercher

- Collaborative Visual Interfaces to Digital Libraries by Katy Börner, Indiana University
- Visualizing Knowledge Domains by Katy Börner, Indiana University, Chaomei Chen, Drexel University and Kevin W. Boyack, Sandia National Laboratories

This year's workshop featured seven papers. Each paper was presented and discussed among the participants. The presentations and discussions were divided into two sessions. Dan Ancona, University of California, chaired the first session. Anselm Spoerri, Rutgers University, chaired the second session.

The first paper in the morning session was presented by Adrian Graham, Hector Garcia-Molina, Andreas Paepcke and Terry Winograd, Stanford University, entitled "Time as Essence for Photo Browsing Through Personal Digital Libraries." Their paper described a visual photo browser for collections containing more than thousands of time-stamped digital images. Subsequently, Carlos Monroy, Rajiv Kochumman, Richard Furuta & Eduardo Urbina, Texas A&M University introduced the "Interactive Timeline Viewer (ItLv): A Tool to Visualize Variants Among Documents". ItLv visualizes and supports the interactive exploration of text variants obtained in a textual collation helping to understand the relationships among the texts. The third paper was presented by Mark Notess & Natalia Minibayeva, Indiana University and described work on "Variations2: Toward Visual Interfaces for Digital Music Libraries". Based on a discussion of the unique challenges of visualizing musical data as well as the limitations of existing music retrieval and browsing interfaces, they proposed a data model and interface design for the Variations2 digital music library project.

The afternoon session started with a presentation by Michael Christoffel & Bethina Schmitt, University of Karlsruhe, Germany on "Accessing Libraries as Easy as a Game". Aiming at the look and feel of a "real world" library, they used a game engine to model the interior and exterior of an existing library building as well as the basic functionality such as literature search and browsing. Initial feedback from teenagers and other users followed a play instinct when trying out the system. The next talk was given by TeongJoo Ong & John J. Leggett, Texas A&M University introduced "Interactive Information Visualization in the Digital Flora of Texas" a visual interface used by a large group of botanists and botanically interested non-specialists. Among the different types of interactive information visualizations are a hierarchical taxonomic browser, specimen distribution and density maps, and stackable bar graphs of temporal specimen data. Dan Ancona & Terry Smith, University of California, presented "Towards Escaping the Interface Local Minimum: Visualization and the Alexandria Digital Earth Prototype". The project aims to ease the access, browsing, delivery, and understanding of geospatially referenced library items. Initial visualizations use cartographic metaphors to lay out digital objects in geographic or in abstract semantic spaces. Last but not least, Rao Shen presented joint work with Jun Wang and Edward A. Fox, Virginia Tech on "A Lightweight Protocol between Digital Libraries and Visualization Systems". The proposed protocol, called VIDI, extends the Open Archives Initiative Protocol for Metadata Harvesting and presents a new solution to achieve interoperability between the growing number of digital libraries and diverse visual interfaces.

Links to all papers presented at the workshop as well as all systems demonstrated may be found at the workshop page http://vw.indiana.edu/visual02/jcdl.html.

A collection of extended versions of papers in the two workshops in 2001 and 2002 will be published as a book in the Lecture Notes in Computer Science, Volume 2539, entitled *Visual Interfaces to Digital Libraries*.

In 2003, the "Visual Interfaces to Digital Libraries" workshop will be merged with another JCDL-workshop on "Document Search Interface Design and Intelligent Access in Large-Scale Collections" (http://xtasy.slis.indiana.edu/jcdlui/uiws.html). The tentative title of the combined workshop is "Information Retrieval and Navigation Interfaces". Organizers will be Javed Mostafa and Katy Börner.