

System Demonstrations: Abstracts

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IR Application Development with FireWorks

David J. Harper, David G. Hendry, Jan-Jaap IJdens, and Jeomon Jose

Abstract

We are developing two different architectures that support the development of IR applications. Eclair is a C++ class library that provides abstractions for the representation, storage, and retrieval of multimedia documents. FireWorks is a user-interface architecture, consisting of IR-specific toolkit and frameworks, for constructing a wide range of IR applications. Both architectures are built on top of Objectstore, a state-of-the-art distributed object data management system. The goal of this demonstration is to show the broad range of IR applications can be implemented with these frameworks.

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A Novel Client-server Protocol for the Demanding Opac User

E.J. Yannakoudakis

Abstract

We aim to demonstrate an integrated multilingual OPAC module that offers several novel features, including SDI, free-text retrieval and a full thesaurus tree, using an open logical client-server protocol. The module was implemented under Windows 3.1/95 and a UNIX server running INFORMIX-4GL while the communication layer is operational under both serial and TCP/IP standards. Note that the new module is part of the integrated library automation system LIBRETTO which has already been installed at several sites in Greece.

The need for a new system to manage our catalogue became even greater as we attempted to process thesaurus relationships using Greek character sets, to define character mappings, to switch from one language to another, to produce logical lexicographic orderings, to process voice, image, video, and cardex information, etc..

The protocol is based on ASCII packages which are exchanged using the format: Header% [Flags] Data [Flags], where the header comprises one to four characters and is used to denote the command function or the result set. The first and the second

set of flags are used by some commands to enhance their meaning. For example, in the free text search, the flag 10100000000 is used to limit the search into two specific database fields, in this case the TITLE and the AUTHOR. Data contains command parameters or result information.

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WING: A Multiple-view Smooth Information Retrieval System

Toshiyuki Masui, Mitsuru Minakuchi, George R. Borden, and Kouichi Kashiwagi

Abstract

WING (Whole Interactive Nara Guide) is a system to enable smooth information retrieval by integrating multiple search strategies such as 3-D map visualization, hypertext, keyword search, and category search with the same smooth zooming interface. Nara, located about 40 kilometers south of Kyoto, is an ancient capital of Japan and full of tourist attractions like old shrines and temples. Using WING, any vague knowledge about the data can be utilized to narrow the search space, and users can smoothly navigate through Nara at will, by modifying the search area in each view.

Visualizing Search Results with Envision

Lucy Terry Nowell, Robert K. France, and Edward A. Fox

Abstract

Envision, a multimedia digital library of computer science literature, is unique in the variety of document characteristics visualized and in the flexibility afforded users to change the visualization to suit their current information needs. Envision's Graphic View window displays search results as a matrix of icons. Using controls provided in the user interface, the layout of the matrix may be changed to visualize estimated relevance to query, publication year, document type, document size, author names, and index terms. Icon characteristics used in the visualizations include placement relative to the x-axis and y-axis and an alphanumeric icon label, as well as icon size, shape, and

color. Visualizations supporting a wide range of user tasks will be demonstrated.

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Ariadne: Electronic Information for Computer Scientists

Markus Dreger, Stefan Lohrum, Kai Grossjohann, and Claus Dieter Ziegler

Abstract

Ariadne is a WWW-based system that combines several services in one information system. Quick access to references of relevant publications, preprints, software, etc. about Computer Science is provided by its main service, the navigational part. This is a repository of links, structured hierarchically according to the ACM Classification Scheme. The repository is maintained by the cooperation of the users ("give and take").

They suggest new links to be added which then undergo a cooperative peer review (also by the users) which ensures the quality of information. A search interface is included, as well.

Ariadne offers two profiling services. The first regularly checks a URL and notifies the user if the information has changed; the second (known as SFprofile) regularly issues queries to freeWAIS-sf databases with an SFgate WWW forms interface. SFprofile supports in-place (in the HTML form) editing of profiles and a variety of processing options.

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WebCompass: An Agent-based Metasearch and Metadata Discovery Tool for the Web

Brad Allen, John Jensen, Jay Nelson, Brian Ulicny, Kristina Lerman, and Linda Rudell-Betts

Abstract

WebCompass is an agent-based system that automatically gathers and organizes information from the World Wide Web for personal or workgroup use. Given a specification of user interest in the form of thesaurus topics, WebCompass performs metasearch to retrieve potentially relevant Web pages, and then automatically summarizes, classifies and clusters the retrieved Web pages, creating a relational database of metadata about Web pages, organized by topic. WebCompass periodically updates the database, providing the user with an up-to-date overview of Web content of interest.

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Querying Hierarchically Structured Texts with Generalized Context-free Grammars

Yves Marcoux and Martin Sevigny

Abstract

The system demonstrated is a prototype of information retrieval system for hierarchically structured text. It is based on a new model in which queries are expressed as generalized context-free grammars that allow complementation and intersection operations on the right-hand side of productions. The prototype also incorporates new user-interface elements especially designed for assisting users in retrieving information from large structured-document bases. Such elements include succinct and detailed guides to the structure of the document base. The prototype is demonstrated operating on a document base of SGML documents.

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The CD-ROM of Crete: A Multimedia Tourism Application, Based on Geographic Interaction and Information Retrieval Techniques

N. Moumoutzis and M. Frangonikolakis

Abstract

During the last years, MUSIC has undertaken a number of competitive research and development projects in the area of multimedia tourism information systems. A powerful model has been elaborated supporting the detailed description of areas of touristic interest with their sites and facilities hierarchically organized. An extensive multimedia information base for the region of Crete has been established. Tools have been developed to maintain this information base. A hypermedia model has been implemented in order to create hypermedia presentations with detailed and accurate geographic maps, diagrams and architectural sketches. Commercially available tools have been integrated for creating synthetic multimedia presentations, virtual navigations, and multimedia data processing.

Graphical queries supported are classified into (a) boolean queries, that are expressed graphically on trees representing type hierarchies and (b) similarity queries, that are meaningful only for type hierarchies with weights. These two classes of queries can be combined together. The CD-ROM of Crete is an Interactive Multimedia Tourism Application developed on this Software Bench that exploits all the above mentioned capabilities.

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