

Andreas Rauber  
Stavros Christodoulakis  
A Min Tjoa (Eds.)

# Research and Advanced Technology for Digital Libraries

9th European Conference, ECDL 2005  
Vienna, Austria, September 2005  
Proceedings



Springer

LNCS 3652

75  
Andreas Rauber Stavros Christodoulakis  
A Min Tjoa (Eds.)

# Research and Advanced Technology for Digital Libraries

9th European Conference, ECDL 2005  
Vienna, Austria, September 18-23, 2005  
Proceedings



E200600015

 Springer

**Volume Editors**

**Andreas Rauber**

**A Min Tjoa**

**Vienna University of Technology**

**Department of Software Technology and Interactive Systems**

**Vienna, Austria**

**E-mail: {rauber,amin}@ifs.tuwien.ac.at**

**Stavros Christodoulakis**

**Technical University of Crete**

**Laboratory of Distributed Multimedia Information Systems and Applications**

**Heraklion, Greece**

**E-mail: stavros@ced.tuc.gr**

Library of Congress Control Number: 2005932345

CR Subject Classification (1998): H.3.7, H.2, H.3, H.4.3, H.5, J.7, J.1, I.7

**ISSN** 0302-9743

**ISBN-10** 3-540-28767-1 Springer Berlin Heidelberg New York

**ISBN-13** 978-3-540-28767-4 Springer Berlin Heidelberg New York

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer. Violations are liable to prosecution under the German Copyright Law.

Springer is a part of Springer Science+Business Media

[springeronline.com](http://springeronline.com)

© Springer-Verlag Berlin Heidelberg 2005

Printed in Germany

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India  
Printed on acid-free paper SPIN: 11551362 06/3142 5 4 3 2 1 0

*Commenced Publication in 1973*

Founding and Former Series Editors:

Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

## Editorial Board

David Hutchison

*Lancaster University, UK*

Takeo Kanade

*Carnegie Mellon University, Pittsburgh, PA, USA*

Josef Kittler

*University of Surrey, Guildford, UK*

Jon M. Kleinberg

*Cornell University, Ithaca, NY, USA*

Friedemann Mattern

*ETH Zurich, Switzerland*

John C. Mitchell

*Stanford University, CA, USA*

Moni Naor

*Weizmann Institute of Science, Rehovot, Israel*

Oscar Nierstrasz

*University of Bern, Switzerland*

C. Pandu Rangan

*Indian Institute of Technology, Madras, India*

Bernhard Steffen

*University of Dortmund, Germany*

Madhu Sudan

*Massachusetts Institute of Technology, MA, USA*

Demetri Terzopoulos

*New York University, NY, USA*

Doug Tygar

*University of California, Berkeley, CA, USA*

Moshe Y. Vardi

*Rice University, Houston, TX, USA*

Gerhard Weikum

*Max-Planck Institute of Computer Science, Saarbruecken, Germany*

## Preface

Since its inception in 1997, the European Conference on Research and Advanced Technology for Digital Libraries (ECDL) has come a long way, creating a strong interdisciplinary community of researchers and practitioners in the field of digital libraries. We are proud to present the proceedings of ECDL 2005, the ninth conference in this series, which, following Pisa (1997), Heraklion (1998), Paris (1999), Lisbon (2000), Darmstadt (2001), Rome (2002), Trondheim (2003), and Bath (2004), took place on September 18–23, 2005 in Vienna, Austria.

ECDL 2005 featured separate calls for paper and poster submissions, resulting in 130 full papers and 32 posters being submitted to the conference. All papers were subject to a thorough peer-review process, with an 87-person-strong Program Committee and a further 68 additional reviewers from 35 countries from basically all continents sharing the tremendous review load, producing between three and four detailed reviews per paper. Based on these, as well as on the discussion that took place during a one-week on-line PC discussion phase, 41 papers were finally selected for inclusion in the conference program during a 1.5 day PC meeting, resulting in an acceptance rate of only 32%. Furthermore, 17 paper submissions were accepted for poster presentations with an additional 13 posters being accepted based on a simplified review process of 2–3 reviews per poster from the poster submission track. Both the full papers as well as extended abstracts of the posters presented at ECDL 2005 are provided in these proceedings.

The dense program of ECDL started on Sunday with a range of tutorials providing in-depth coverage of both introductory as well as advanced topics of digital libraries. These included a tutorial on Context-Enhanced Digital Libraries by Erich Neuhold, Claudia Niederee and Avare Stewart; Thesauri and Ontologies by Dagobert Soergel; tutorials on the creation of digital library collections with Greenstone, as well as Digital Library Interoperability Standards by Ian Witten and David Bainbridge; as well as a tutorial on the 5S Digital Library Framework by Ed Fox and Marcos Andre Goncalves.

The main conference featured two keynotes. Neil Beagrie from the British Library raised a series of challenges with respect to the growing importance of personal digital libraries, stemming from the increasingly empowered landscape of personal collections and digital memory. In the second keynote, Erich Neuhold discussed the promises and challenges of next-generation digital library architectures, analyzing the move from centralized systems to flexible content and service federations. Scientific presentations were held in two parallel sessions, interleaved with the poster sessions as well as two panel sessions addressing highly controversial topics. Tamara Sumner chaired a panel discussing the contributions that digital library technology can make to the changing nature of science and

scientific data curation. Donatella Castelli and Yannis Ioannidis raised a debate on the promises and fallacies of moving Digital Libraries onto the GRID.

Following the main conference ECDL hosted five workshops, including the long-standing CLEF Workshop of the Cross-Language Evaluation Forum, a major event on its own that was running an intensive 3-day program, as well as the fifth edition of the ECDL Workshop on Web Archiving and Digital Preservation (IWAW 2005), the 4th NKOS Workshop on Mapping Knowledge Organization Systems (NKOS 2005), the 3rd Workshop on Digital Libraries in Health Care (HDL 2005), as well as the 1st Workshop on Knowledge Extraction and Deployment for Digital Libraries and Repositories (KED 2005).

All information relating to ECDL 2005 is available from the conference homepage at <http://www.ecdl2005.org>.

We would like to take the opportunity to thank everybody involved in making ECDL 2005 such a marvellous event. Specifically, we would like to thank all conference participants and presenters, who provided a fascinating 1-week program of high-quality presentations and intensive discussions, as well as all members from the Program Committee and the additional reviewers, who went to great length to ensure the high quality of this conference. Furthermore, we would like to thank all members of the Organizing Committee, and particularly everybody in the local organizing teams at the Austrian National Library, the Austrian Computer Society, and the Vienna University of Technology. Particularly, we would like to thank Andreas Pesenhofer for running and thoroughly monitoring the Conference Management System, Georg Pölzlauer for his diligent effort in compiling the proceedings, Thomas Lidy, Rudolf Mayer, Carl Rauch and Stephan Strodl, who, together with numerous student volunteers, assisted in all stages of organizing the conference. They all invested tremendous efforts to make sure that ECDL 2005 became an exciting and enjoyable event. It is due to them that the organization of ECDL 2005 was not just hard work, but also a pleasure.

June 2005

Andreas Rauber, Stavros Christodoulakis

## Organization

## **Organization Committee**

## General chair

A Min Tjoa Vienna University of Technology, Austria

## Program Chairs

Andreas Rauber      Vienna University of Technology, Austria  
Stavros Christodoulakis      Technical University of Crete, Greece

## **Poster and Demo Chairs**

## Workshop Chairs

Fabio Crestani University of Strathclyde, UK  
Dieter Merkl University of Western Sydney, Australia

## Panel Chairs

László Kovács      Hungarian Academy of Sciences, Hungary  
Ed Fox                Virginia Tech University, USA

## Tutorial Chairs

Nozha Boujemaa INRIA, France  
Shin'ichi Satoh National Institute of Informatics, Japan

## **Best Paper Award Chair**

## **Doctoral Consortium Chair**

Jose Borbinha INESC-ID – Information System Group, Portugal

## **Publicity Chairs**

Julien Masanes Bibliothèque nationale de France, France  
Michael Bauer Technische Universität München, Germany

## Local Organizing Chairs

Eugen Muehlvenzl Austrian Computer Society, Austria  
Max Kaiser Austrian National Library, Austria  
Alexander Schatten Vienna University of Technology, Austria  
Carl Rauch Vienna University of Technology, Austria

## Program Committee

Maristella Agosti	University of Padua, Italy
Helena Ahonen-Myka	University of Helsinki, Finland
Hanne Albrechtsen	Risø National Laboratory, Denmark
Anders Andrö	Lund University, Sweden
Margherita Antona	Foundation for Research and Technology, Greece
Daniel E. Atkins	University of Michigan, USA
Ricardo Baeza-Yates	University Pompeu Fabra, Spain, University of Chile, Chile
Miroslav Bartošek	Masaryk University, Czech Republic
Alejandro Bia	Universidad Miguel Hernández, Spain
Mária Bieliková	Slovak University of Technology in Bratislava, Slovakia
Alberto Del Bimbo	Università degli Studi di Firenze, Italy
Ann Blandford	University College London, UK
Davide Bolchini	Università della Svizzera Italiana, Switzerland
Christine L. Borgman	University of California, USA
Pavel I. Braslavsky	Russian Academy of Sciences, Russia
Christian Breiteneder	Vienna University of Technology, Austria
Gerhard Budin	University of Vienna, Austria
Tiziana Cartaci	University of Roma "La Sapienza", Italy
Donatella Castelli	Consiglio Nazionale delle Ricerche, Italy
A. Enis Cetin	Bilkent University, Turkey
Lee-Feng Chien	Academia Sinica, Taiwan
Key-Sun Choi	Korea Advanced Institute of Science and Technology, Korea
Birte Christensen-Dalsgaard	State and University Library, Denmark
Anita Coleman	University of Arizona, USA
Michel Crucianu	INRIA, France
Sally Jo Cunningham	University of Waikato, New Zealand
Michael Day	University of Bath, UK
Michael Dittenbach	E-Commerce Competence Center – EC3, Austria
Boris Dobrov	Moscow State University, Russia
Martin Doerr	Foundation for Research & Technology, Greece
Sandor Dominich	University of Veszprem, Hungary
Matthew Dovey	University of Oxford, UK
J. Stephen Downie	University of Illinois at Urbana-Champaign, USA
Cédric Dumas	Ecole des Mines de Nantes, France
Jan Engelen	Katholieke Universiteit Leuven, Belgium
Dieter Fellner	Technische Universität Braunschweig, Germany
Pablo de la Fuente	Universidad de Valladolid, Spain
Norbert Fuhr	University of Duisburg-Essen, Germany

Julio Gonzalo	Universidad Nacional de Educación a Distancia, Spain
Juha Hakala	Helsinki University Library, Finland
Allan Hanbury	Vienna University of Technology, Austria
Jane Hunter	University of Queensland, Australia
Stephen Katz	Food and Agriculture Organization of the United Nations, Italy
Wolfgang Klas	University of Vienna, Austria
Traugott Koch	UKOLN, UK
Harald Krottmaier	Graz University of Technology, Austria
Josef Küng	Johannes Kepler Universität Linz, Austria
Carl Lagoze	Cornell University, USA
Mounia Lalmas	Queen Mary University London, UK
Ray R. Larson	University of California, Berkeley, USA
Ee-Peng Lim	Nanyang Technological University, Singapore
Liz Lyon	University of Bath, UK
Gary Marchionini	University of North Carolina at Chapel Hill, USA
Vladimír Marík	Czech Technical University, Czech Republic
András Micsik	Hungarian Academy of Sciences, Hungary
Dunja Mladenic	Josef Stefan Institute, Slovenia
Günter Mühlberger	University of Innsbruck, Austria
Marc Nanard	Laboratoire d'Informatique, de Robotique et de Microélectronique de Montpellier, France
Igor Nekrestyanov	Saint Petersburg State University, Russia
Heike Neuroth	Georg-August Universität Göttingen, Germany
Liddy Nevile	La Trobe University, Australia
Elias Pampalk	Austrian Research Institute for Artificial Intelligence, Austria
Christos Papatheodorou	Ionian University, Greece
Jan Paralic	University of Technology Kosice, Slovakia
Thomas Risse	IPSI Fraunhofer, Germany
Seamus Ross	University of Glasgow, UK
Nieves Rodríguez Brisaboa	Universidad de A Coruña, Spain
Lloyd Rutledge	Centrum voor Wiskunde en Informatica, Netherlands
Rudi Schmiede	Technische Universität Darmstadt, Germany
Heiko Schuldt	University of Health Sciences, Medical Informatics and Technology, Austria
Timos Sellis	National Technical University of Athens, Greece
Mário J. Gaspar da Silva	Universidade de Lisboa, Portugal
Edleno Silva de Moura	Universidade do Amazonas, Brazil
Simeon Simoff	University of Technology Sydney, Australia
Maria Sliwinska	International Center for Information Management Systems and Services, Poland

Dagobert Soergel	University of Maryland, USA
Ingeborg T. Sølvberg	Norwegian University of Technology and Science, Norway
Nicolas Spyros	Université de Paris-Sud, France
Jela Steinerová	Comenius University in Bratislava, Slovakia
Shigeo Sugimoto	University of Tsukuba, Japan
Hussein Suleman	University of Cape Town, South Africa
Shalini R. Urs	University of Mysore, India
Felisa M. Verdejo	Universidad Nacional de Educación a Distancia, Spain
Paula Viana	Instituto Politécnico do Porto, Portugal
James Z. Wang	Pennsylvania State University, USA
Gerhard Weikum	Max-Planck-Institut für Informatik, Germany
Ian Witten	University of Waikato, New Zealand

## Additional Reviewers

Trond Aalberg	Giorg Maria Di Nunzio	Kristina Machova
Michail Ageev	Dulce Domingos	Hubert Mara
Enrique Amigo	Georges Dupret	Mari Carmen Marcos
Pedro Antunes	Horst Eidenberger	Bruno Martins
Michela Bacchin	Kateryna Falkovych	Olena Medelyan
David Bainbridge	Renato Ferreira	Massimo Melucci
Maria Bruna Baldacci	Nicola Ferro	Dave Nichols
Peter Bednar	Gudrun Fischer	Blaz Novak
Helmut Berger	Blaz Fortuna	Ashish Parulekar
Stefano Berretti	Ingo Frommholz	Anselmo Penas
Stefano Bocconi	Silvia Gabrielli	Dimitris Plexousakis
Leonid Boitsov	Manolis Gergatsoulis	Carl Rauch
Janez Brank	Joost Geurts	Timothy Read
Peter Butka	Francois Goasdoue	Covadonga Rodrigo
Andrea Calì	Miha Grčar	Martin Sarnovsky
Pavel Calado	Maxim Gubin	Tarkan Sevilmis
Liliana Calderon	Nuno M. Guimaraes	Manuele Simi
Leonardo Candela	Mohand-Said Hacid	Jaroslav Susol
Luis Carrico	Bernhard Haslhofer	Giannis Tsakonas
Joao M.B. Cavalcanti	Robert Hecht	Torsten Ullrich
Marcilio Chaves	Aleks Jakulin	Miha Vuk
Juan Cigarran	Kevin Keenoy	Andreas Wichert
Altigran Soares Da Silva	Stefan Leitich	

# Lecture Notes in Computer Science

For information about Vols. 1–3581

please contact your bookseller or Springer

Vol. 3710: M. Barni, I. Cox, T. Kalker, H.J. Kim (Eds.),  
Digital Watermarking. XII, 485 pages. 2005.

Vol. 3703: F. Fages, S. Soliman (Eds.), Principles and  
Practice of Semantic Web Reasoning. VIII, 163 pages.  
2005.

Vol. 3698: U. Furbach (Ed.), KI 2005: Advances in Artificial  
Intelligence. XIII, 409 pages. 2005. (Subseries LNAI).

Vol. 3697: W. Duch, J. Kacprzyk, E. Oja, S. Zadrożny  
(Eds.), Artificial Neural Networks: Formal Models and  
Their Applications - ICANN 2005, Part II. XXXII, 1045  
pages. 2005.

Vol. 3696: W. Duch, J. Kacprzyk, E. Oja, S. Zadrożny  
(Eds.), Artificial Neural Networks: Biological Inspirations  
- ICANN 2005, Part I. XXXI, 703 pages. 2005.

Vol. 3687: S. Singh, M. Singh, C. Apte, P. Perner (Eds.),  
Pattern Recognition and Image Analysis, Part II. XXV,  
809 pages. 2005.

Vol. 3686: S. Singh, M. Singh, C. Apte, P. Perner (Eds.),  
Pattern Recognition and Data Mining, Part I. XXVI, 689  
pages. 2005.

Vol. 3675: Y. Luo (Ed.), Cooperative Design, Visualization,  
and Engineering. XI, 264 pages. 2005.

Vol. 3674: W. Jonker, M. Petković (Eds.), Secure Data  
Management. X, 241 pages. 2005.

Vol. 3672: C. Hankin, I. Siveroni (Eds.), Static Analysis.  
X, 369 pages. 2005.

Vol. 3671: S. Bressan, S. Ceri, E. Hunt, Z.G. Ives, Z. Bel-  
lahsène, M. Rys, R. Unland (Eds.), Database and XML  
Technologies. X, 239 pages. 2005.

Vol. 3670: M. Bravetti, L. Kloul, G. Zavattaro (Eds.), Formal  
Techniques for Computer Systems and Business Pro-  
cesses. XIII, 349 pages. 2005.

Vol. 3665: K. S. Candan, A. Celentano (Eds.), Advances  
in Multimedia Information Systems. X, 221 pages. 2005.

Vol. 3664: C. Türker, M. Agosti, H.-J. Schek (Eds.), Peer-  
to-Peer, Grid, and Service-Orientation in Digital Library  
Architectures. X, 261 pages. 2005.

Vol. 3663: W.G. Kropatsch, R. Sablatnig, A. Hanbury  
(Eds.), Pattern Recognition. XIV, 512 pages. 2005.

Vol. 3662: C. Baral, G. Greco, N. Leone, G. Terracina  
(Eds.), Logic Programming and Nonmonotonic Reason-  
ing. XIII, 454 pages. 2005. (Subseries LNAI).

Vol. 3661: T. Panayiotopoulos, J. Gratch, R. Aylett, D.  
Ballin, P. Olivier, T. Rist (Eds.), Intelligent Virtual Agents.  
XIII, 506 pages. 2005. (Subseries LNAI).

Vol. 3660: M. Beigl, S. Intille, J. Rekimoto, H. Tokuda  
(Eds.), UbiComp 2005: Ubiquitous Computing. XVII,  
394 pages. 2005.

Vol. 3659: J.R. Rao, B. Sunar (Eds.), Cryptographic Hard-  
ware and Embedded Systems – CHES 2005. XIV, 458  
pages. 2005.

Vol. 3658: V. Matoušek, P. Mautner, T. Pavelka (Eds.),  
Text, Speech and Dialogue. XV, 460 pages. 2005. (Sub-  
series LNAI).

Vol. 3655: A. Aldini, R. Gorrieri, F. Martinelli (Eds.),  
Foundations of Security Analysis and Design III. VII, 273  
pages. 2005.

Vol. 3654: S. Jajodia, D. Wijesekera (Eds.), Data and Ap-  
plications Security XIX. X, 353 pages. 2005.

Vol. 3653: M. Abadi, L.d. Alfaro (Eds.), CONCUR 2005  
– Concurrency Theory. XIV, 578 pages. 2005.

Vol. 3652: A. Rauber, S. Christodoulakis, A. M. Tjoa  
(Eds.), Research and Advanced Technology for Digital  
Libraries. XVIII, 545 pages. 2005.

Vol. 3649: W.M.P. van der Aalst, B. Benatallah, F. Casati,  
F. Curbera (Eds.), Business Process Management. XII,  
472 pages. 2005.

Vol. 3648: J.C. Cunha, P.D. Medeiros (Eds.), Euro-Par  
2005 Parallel Processing. XXXVI, 1299 pages. 2005.

Vol. 3646: A. F. Famili, J.N. Kok, J.M. Peña, A. Siebes,  
A. Feelders (Eds.), Advances in Intelligent Data Analysis  
VI. XIV, 522 pages. 2005.

Vol. 3645: D.-S. Huang, X.-P. Zhang, G.-B. Huang (Eds.),  
Advances in Intelligent Computing, Part II. XIII, 1010  
pages. 2005.

Vol. 3644: D.-S. Huang, X.-P. Zhang, G.-B. Huang (Eds.),  
Advances in Intelligent Computing, Part I. XXVII, 1101  
pages. 2005.

Vol. 3642: D. Ślezałk, J. Yao, J.F. Peters, W. Ziarko, X. Hu  
(Eds.), Rough Sets, Fuzzy Sets, Data Mining, and Granular  
Computing, Part II. XXIII, 738 pages. 2005. (Subseries  
LNAI).

Vol. 3641: D. Ślezałk, G. Wang, M. Szczuka, I. Düntsch,  
Y. Yao (Eds.), Rough Sets, Fuzzy Sets, Data Mining, and  
Granular Computing, Part I. XXIV, 742 pages. 2005. (Sub-  
series LNAI).

Vol. 3639: P. Godefroid (Ed.), Model Checking Software.  
XI, 289 pages. 2005.

Vol. 3638: A. Butz, B. Fisher, A. Krüger, P. Olivier (Eds.),  
Smart Graphics. XI, 269 pages. 2005.

Vol. 3637: J. M. Moreno, J. Madrenas, J. Cosp (Eds.),  
Evolvable Systems: From Biology to Hardware. XI, 227  
pages. 2005.

Vol. 3636: M.J. Blesa, C. Blum, A. Roli, M. Sampels  
(Eds.), Hybrid Metaheuristics. XII, 155 pages. 2005.

Vol. 3634: L. Ong (Ed.), Computer Science Logic. XI, 567  
pages. 2005.

- Vol. 3633: C. Bauzer Medeiros, M. Egenhofer, E. Bertino (Eds.), Advances in Spatial and Temporal Databases. XIII, 433 pages. 2005.
- Vol. 3632: R. Nieuwenhuis (Ed.), Automated Deduction – CADE-20. XIII, 459 pages. 2005. (Subseries LNAI).
- Vol. 3631: J. Eder, H.-M. Haav, A. Kalja, J. Penjam (Eds.), Advances in Databases and Information Systems. XIII, 393 pages. 2005.
- Vol. 3630: M.S. Capcarrere, A.A. Freitas, P.J. Bentley, C.G. Johnson, J. Timmis (Eds.), Advances in Artificial Life. XIX, 949 pages. 2005. (Subseries LNAI).
- Vol. 3629: J.L. Fiadeiro, N. Harman, M. Roggenbach, J. Rutten (Eds.), Algebra and Coalgebra in Computer Science. XI, 457 pages. 2005.
- Vol. 3628: T. Gschwind, U. Aßmann, O. Nierstrasz (Eds.), Software Composition. X, 199 pages. 2005.
- Vol. 3627: C. Jacob, M.L. Pilat, P.J. Bentley, J. Timmis (Eds.), Artificial Immune Systems. XII, 500 pages. 2005.
- Vol. 3626: B. Ganter, G. Stumme, R. Wille (Eds.), Formal Concept Analysis. X, 349 pages. 2005. (Subseries LNAI).
- Vol. 3625: S. Kramer, B. Pfahringer (Eds.), Inductive Logic Programming. XIII, 427 pages. 2005. (Subseries LNAI).
- Vol. 3624: C. Chekuri, K. Jansen, J.D.P. Rolim, L. Trevisan (Eds.), Approximation, Randomization and Combinatorial Optimization. XI, 495 pages. 2005.
- Vol. 3623: M. Liśkiewicz, R. Reischuk (Eds.), Fundamentals of Computation Theory. XV, 576 pages. 2005.
- Vol. 3621: V. Shoup (Ed.), Advances in Cryptology – CRYPTO 2005. XI, 568 pages. 2005.
- Vol. 3620: H. Muñoz-Avila, F. Ricci (Eds.), Case-Based Reasoning Research and Development. XV, 654 pages. 2005. (Subseries LNAI).
- Vol. 3619: X. Lu, W. Zhao (Eds.), Networking and Mobile Computing. XXIV, 1299 pages. 2005.
- Vol. 3618: J. Jedrzejowicz, A. Szepietowski (Eds.), Mathematical Foundations of Computer Science 2005. XVI, 814 pages. 2005.
- Vol. 3617: F. Roli, S. Vitulano (Eds.), Image Analysis and Processing – ICIAP 2005. XXIV, 1219 pages. 2005.
- Vol. 3615: B. Ludäscher, L. Raschid (Eds.), Data Integration in the Life Sciences. XII, 344 pages. 2005. (Subseries LNBI).
- Vol. 3614: L. Wang, Y. Jin (Eds.), Fuzzy Systems and Knowledge Discovery, Part II. XLI, 1314 pages. 2005. (Subseries LNAI).
- Vol. 3613: L. Wang, Y. Jin (Eds.), Fuzzy Systems and Knowledge Discovery, Part I. XLI, 1334 pages. 2005. (Subseries LNAI).
- Vol. 3612: L. Wang, K. Chen, Y. S. Ong (Eds.), Advances in Natural Computation, Part III. LXI, 1326 pages. 2005.
- Vol. 3611: L. Wang, K. Chen, Y. S. Ong (Eds.), Advances in Natural Computation, Part II. LXI, 1292 pages. 2005.
- Vol. 3610: L. Wang, K. Chen, Y. S. Ong (Eds.), Advances in Natural Computation, Part I. LXI, 1302 pages. 2005.
- Vol. 3608: F. Dehne, A. López-Ortiz, J.-R. Sack (Eds.), Algorithms and Data Structures. XIV, 446 pages. 2005.
- Vol. 3607: J.-D. Zucker, L. Saitta (Eds.), Abstraction, Reformulation and Approximation. XII, 376 pages. 2005. (Subseries LNAI).
- Vol. 3606: V. Malyshkin (Ed.), Parallel Computing Technologies. XII, 470 pages. 2005.
- Vol. 3604: R. Martin, H. Bez, M. Sabin (Eds.), Mathematics of Surfaces XI. IX, 473 pages. 2005.
- Vol. 3603: J. Hurd, T. Melham (Eds.), Theorem Proving in Higher Order Logics. IX, 409 pages. 2005.
- Vol. 3602: R. Eigenmann, Z. Li, S.P. Midkiff (Eds.), Languages and Compilers for High Performance Computing. IX, 486 pages. 2005.
- Vol. 3599: U. Aßmann, M. Aksit, A. Rensink (Eds.), Model Driven Architecture. X, 235 pages. 2005.
- Vol. 3598: H. Murakami, H. Nakashima, H. Tokuda, M. Yasumura, Ubiquitous Computing Systems. XIII, 275 pages. 2005.
- Vol. 3597: S. Shimojo, S. Ichii, T.W. Ling, K.-H. Song (Eds.), Web and Communication Technologies and Internet-Related Social Issues - HSI 2005. XIX, 368 pages. 2005.
- Vol. 3596: F. Dau, M.-L. Mugnier, G. Stumme (Eds.), Conceptual Structures: Common Semantics for Sharing Knowledge. XI, 467 pages. 2005. (Subseries LNAI).
- Vol. 3595: L. Wang (Ed.), Computing and Combinatorics. XVI, 995 pages. 2005.
- Vol. 3594: J.C. Setubal, S. Verjovski-Almeida (Eds.), Advances in Bioinformatics and Computational Biology. XIV, 258 pages. 2005. (Subseries LNBI).
- Vol. 3593: V. Mařík, R. W. Brennan, M. Pěchouček (Eds.), Holonic and Multi-Agent Systems for Manufacturing. XI, 269 pages. 2005. (Subseries LNAI).
- Vol. 3592: S. Katsikas, J. Lopez, G. Pernul (Eds.), Trust, Privacy and Security in Digital Business. XII, 332 pages. 2005.
- Vol. 3591: M.A. Wimmer, R. Traunmüller, Å. Grönlund, K.V. Andersen (Eds.), Electronic Government. XIII, 317 pages. 2005.
- Vol. 3590: K. Bauknecht, B. Pröll, H. Werthner (Eds.), E-Commerce and Web Technologies. XIV, 380 pages. 2005.
- Vol. 3589: A.M. Tjoa, J. Trujillo (Eds.), Data Warehousing and Knowledge Discovery. XVI, 538 pages. 2005.
- Vol. 3588: K.V. Andersen, J. Debenham, R. Wagner (Eds.), Database and Expert Systems Applications. XX, 955 pages. 2005.
- Vol. 3587: P. Perner, A. Imiya (Eds.), Machine Learning and Data Mining in Pattern Recognition. XVII, 695 pages. 2005. (Subseries LNAI).
- Vol. 3586: A.P. Black (Ed.), ECOOP 2005 - Object-Oriented Programming. XVII, 631 pages. 2005.
- Vol. 3584: X. Li, S. Wang, Z.Y. Dong (Eds.), Advanced Data Mining and Applications. XIX, 835 pages. 2005. (Subseries LNAI).
- Vol. 3583: R.W. H. Lau, Q. Li, R. Cheung, W. Liu (Eds.), Advances in Web-Based Learning – ICWL 2005. XIV, 420 pages. 2005.
- Vol. 3582: J. Fitzgerald, I.J. Hayes, A. Tarlecki (Eds.), FM 2005: Formal Methods. XIV, 558 pages. 2005.

¥ 641.92 元

# Table of Contents

## Digital Library Models and Architectures

Requirements Gathering and Modeling of Domain-Specific Digital Libraries with the 5S Framework: An Archaeological Case Study with ETANA

*Rao Shen, Marcos André Gonçalves, Weiguo Fan,  
Edward Fox* ..... 1

On the Effective Manipulation of Digital Objects: A Prototype-Based Instantiation Approach

*Kostas Saidis, George Pyrounakis, Mara Nikolaidou* ..... 13

LibraRing: An Architecture for Distributed Digital Libraries Based on DHTs

*Christos Tryfonopoulos, Stratos Idreos, Manolis Koubarakis* ..... 25

## Multimedia and Hypermedia Digital Libraries

Hierarchical Organization and Description of Music Collections at the Artist Level

*Elias Pampalk, Arthur Flexer, Gerhard Widmer* ..... 37

A Comparison of Melodic Segmentation Techniques for Music Information Retrieval

*Giovanna Neve, Nicola Orio* ..... 49

The Effect of Collection Fusion Strategies on Information Seeking Performance in Distributed Hypermedia Digital Libraries

*Michail Salampasis, John Tait* ..... 57

## XML

A Native XML Database Supporting Approximate Match Search

*Giuseppe Amato, Franca Debole* ..... 69

XMLibrary Search: An XML Search Engine Oriented to Digital Libraries

*Enrique Sánchez-Villamil, Carlos González Muñoz,  
Rafael C. Carrasco* ..... 81

From Legacy Documents to XML: A Conversion Framework <i>Jean-Pierre Chanod, Boris Chidlovskii, Hervé Dejean, Olivier Fambon, Jérôme Fuselier, Thierry Jacquin, Jean-Luc Meunier</i> .....	92
SCOPE – A Generic Framework for XML Based Publishing Processes <i>Uwe Müller, Manuel Klatt</i> .....	104
<b>Building Digital Libraries</b>	
DAR: A Digital Assets Repository for Library Collections <i>Iman Saleh, Noha Adly, Magdy Nagi</i> .....	116
Weservices Infrastructure for the Registration of Scientific Primary Data <i>Uwe Schindler, Jan Bräse, Michael Diepenbroek</i> .....	128
Incremental, Semi-automatic, Mapping-Based Integration of Heterogeneous Collections into Archaeological Digital Libraries: Megiddo Case Study <i>Ananth Raghavan, Naga Srinivas Vemuri, Rao Shen, Marcos A. Goncalves, Weiguo Fan, Edward A. Fox</i> .....	139
Integrating Diverse Research in a Digital Library Focused on a Single Author <i>Neal Audenaert, Richard Furuta, Eduardo Urbina, Jie Deng, Carlos Monroy, Rosy Sáenz, Doris Careaga</i> .....	151
<b>User Studies</b>	
A Fluid Interface for Personal Digital Libraries <i>Lance E. Good, Ashok C. Popat, William C. Janssen, Eric A. Bier</i> .....	162
MedioVis – A User-Centred Library Metadata Browser <i>Christian Grün, Jens Gerken, Hans-Christian Jetter, Werner König, Harald Reiterer</i> .....	174
Effectiveness of Implicit Rating Data on Characterizing Users in Complex Information Systems <i>Seonho Kim, Uma Murthy, Kapil Ahuja, Sandi Vasile, Edward A. Fox</i> .....	186

Managing Personal Documents with a Digital Library <i>Imene Jaballah, Sally Jo Cunningham, Ian H. Witten</i> .....	195
The Influence of the Scatter of Literature on the Use of Electronic Resources Across Disciplines: A Case Study of FinELib <i>Pertti Vakkari, Sanna Talja</i> .....	207
Information Seeking by Humanities Scholars <i>George Buchanan, Sally Jo Cunningham, Ann Blandford, Jon Rimmer, Claire Warwick</i> .....	218
ReadUp: A Widget for Reading <i>William C. Janssen</i> .....	230
<b>Digital Preservation</b>	
The DSpace Open Source Digital Asset Management System: Challenges and Opportunities <i>Robert Tansley, MacKenzie Smith, Julie Harford Walker</i> .....	242
File-Based Storage of Digital Objects and Constituent Datastreams: XMLtapes and Internet Archive ARC Files <i>Xiaoming Liu, Lyudmila Balakireva, Patrick Hochstenbach, Herbert Van de Sompel</i> .....	254
A No-Compromises Architecture for Digital Document Preservation <i>Thomas A. Phelps, P.B. Watry</i> .....	266
A Study into the Effect of Digitisation Projects on the Management and Stability of Historic Photograph Collections <i>Veronica Davis-Perkins, Richard Butterworth, Paul Curzon, Bob Fields</i> .....	278
<b>Metadata</b>	
Strategies for Reprocessing Aggregated Metadata <i>Muriel Foulonneau, Timothy W. Cole</i> .....	290
A Hybrid Declarative/Procedural Metadata Mapping Language Based on Python <i>Greg Janée, James Frew</i> .....	302

Using a Metadata Schema Registry in the National Digital Data Archive of Hungary <i>Csaba Fülop, Gergő Kiss, László Kovács, András Micsik</i>	314
<b>Digital Libraries and e-Learning</b>	
Finding Appropriate Learning Objects: An Empirical Evaluation <i>Jehad Najjar, Joris Klerkx, Riina Vuorikari, Erik Duval</i>	323
Managing Geography Learning Objects Using Personalized Project Spaces in G-Portal <i>Dion Hoe-Lian Goh, Aixin Sun, Wenbo Zong, Dan Wu, Ee-Peng Lim, Yin-Leng Theng, John Hedberg, Chew Hung Chang</i>	336
Evaluation of the NSDL and Google for Obtaining Pedagogical Resources <i>Frank McCown, Johan Bollen, Michael L. Nelson</i>	344
Policy Model for University Digital Collections <i>Alexandros Koulouris, Sarantos Kapidakis</i>	356
<b>Text Classification in Digital Libraries</b>	
Importance of HTML Structural Elements and Metadata in Automated Subject Classification <i>Koraljka Golub, Anders Ardö</i>	368
DL Meets P2P – Distributed Document Retrieval Based on Classification and Content <i>Wolf-Tilo Balke, Wolfgang Nejdl, Wolf Siberski, Uwe Thaden</i>	379
Automatic Detection of Survey Articles <i>Hidetsugu Nanba, Manabu Okumura</i>	391
<b>Searching</b>	
Focused Crawling Using Latent Semantic Indexing - An Application for Vertical Search Engines <i>George Almpantidis, Constantine Kotropoulos, Ioannis Pitas</i>	402

Active Support for Query Formulation in Virtual Digital Libraries: A Case Study with DAFFODIL <i>André Schaefer, Matthias Jordan, Claus-Peter Klas, Norbert Fuhr</i> . . . . .	414
Expression of Z39.50 Supported Search Capabilities by Applying Formal Descriptions <i>Michalis Sfakakis, Sarantos Kapidakis</i> . . . . .	426
<b>Text Digital Libraries</b>	
A Comparison of On-line Computer Science Citation Databases <i>Vaclav Petricek, Ingemar J. Cox, Hui Han, Isaac G. Councill, C. Lee Giles</i> . . . . .	438
A Multi-document Summarization System for Sociology Dissertation Abstracts: Design, Implementation and Evaluation <i>Shiyan Ou, Christopher S.G. Khoo, Dion H. Goh</i> . . . . .	450
Compressing Dynamic Text Collections via Phrase-Based Coding <i>Nieves R. Brisaboa, Antonio Fariña, Gonzalo Navarro, José R. Paramá</i> . . . . .	462
<b>Panels</b>	
Does eScience Need Digital Libraries? <i>Tamara Sumner, Rachel Heery, Jane Hunter, Norbert Lossau, Michael Wright</i> . . . . .	475
Digital Libraries over the Grid: Heaven or Hell? (Panel Description) <i>Donatella Castelli, Yannis Ioannidis</i> . . . . .	477
<b>Posters</b>	
Management and Sharing of Bibliographies <i>Erik Wilde, Sai Anand, Petra Zimmermann</i> . . . . .	479
Legislative Digital Library: Online and Off-Line Database of Laws <i>Viorel Dumitru, Adrian Colomitchi, Eduard Budulea, Stefan Diaconescu</i> . . . . .	481
DIRECT: A System for Evaluating Information Access Components of Digital Libraries <i>Giorgio Maria Di Nunzio, Nicola Ferro</i> . . . . .	483