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## Publications

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### Ein FEM-basierter Mimikgenerator für animierte anthropomorphe Avatare

**Rolf M. Koch, Markus H. Gross, Albert A. Bosshard.** *Institut for Scientific Computing.* January 1998.

Pages: 8. Language: Deutsch.

Available files: [\[abstract\]](#) [\[plain, unix- or gnu-compressed Portable Document Format\]](#) [\[plain, unix- or gnu-compressed Postscript\]](#)

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### A Framework for Physically-Based Information Visualization

**T. C. Sprenger, M. H. Gross, A. Eggenberger, M. Kaufmann.** *Institute for Information Systems, Swiss Federal Institute of Technology, Zürich.* July 1997.

**Keywords:** information visualization, physically based model, clustering

Pages: 14. Language: english.

Available files: [\[abstract\]](#) [\[plain, unix- or gnu-compressed Portable Document Format\]](#) [\[plain, unix- or gnu-compressed Postscript\]](#)

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### Visualizing Information on a Sphere

**M. H. Gross, T. C. Sprenger, J. Finger.** *Institute for Information Systems, Swiss Federal Institute of Technology, Zürich.* August 1997.

**Keywords:** information visualization, physically based model, clustering, blobs

Pages: 6. Language: english.

Available files: [[abstract](#)] [[plain](#), [unix-](#) or [gnu-](#)compressed Portable Document Format] [[plain](#), [unix-](#) or [gnu-](#)compressed Postscript] [[plain](#), [unix-](#) or [gnu-](#)compressed Postscript]

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## Multiresolution Compression and Reconstruction

**Oliver G. Staadt, Markus H. Gross, Roger Weber.** *Institut fuer Informationssysteme.* July 1997.

**Keywords:** wavelets, compression, mesh simplification

Pages: 11. Language: English.

Available files: [[abstract](#)] [[plain](#), [unix-](#) or [gnu-](#)compressed Portable Document Format]

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## A Framework for Physically-Based Information Visualization

**T. C. Sprenger, M. H. Gross, A. Eggenberger, M. Kaufmann.** *Institute for Information Systems, Swiss Federal Institute of Technology, Zürich.* April 1997.

**Keywords:** information visualization, physically based model, clustering

Pages: 10. Language: english.

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## Multiscale image texture analysis in wavelet spaces

**M.Gross, R.Koch, L.Lippert, A.Dreger.**

Available files: [[abstract](#)] [[plain](#), [unix-](#) or [gnu-](#)compressed Postscript]

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## Efficient Triangular Surface Approximations using Wavelets and Quadtree Data Structures

**Markus H. Gross, Oliver G. Staadt and Roger Gatti.** *Institute for Information Systems, ETH Zürich.* June 1996.

IEEE Transactions on Visualization and Computer Graphics. Vol. 2. Nr. 2.

**Keywords:** Surface Meshing, Triangle Approximations, Level-of-Detail, Quadtrees, Wavelet Transforms, Wavelet Space Filtering, Biorthogonal Wavelets, Mean-Square Error, Digital Terrain Modeling

Pages: 19. Language: English.

Available files: [[abstract](#)] [[plain](#), [unix-](#) or [gnu-](#)compressed Postscript] [[plain](#), [unix-](#) or [gnu-](#)compressed Postscript]

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## Simulating Facial Surgery Using Finite Element Models

**R. M. Koch, M. H. Gross, F. R. Carls, D. F. von Bueren, G. Fankhauser, Y. I. H. Parish.** *Institute for Information Systems, ETH Zürich.*

August 1996.

Proceedings of the SIGGRAPH '96 conference.

**Keywords:** Computational Geometry and Object Modeling, Finite Element Method, Facial Surgery Simulation, Facial Modeling, Data Reconstruction

Pages: 8. Language: English.

Available files: [[abstract](#)] [[plain](#), [unix-](#) or [gnu-](#)compressed Portable Document Format] [[plain](#), [unix-](#) or [gnu-](#)compressed Postscript]

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## Fast Multiresolution Surface Meshing

**M. H. Gross, R. Gatti and O. Staadt.** *Institute for Information Systems, ETH Zürich.* July 1995.

Proceedings of the IEEE Visualization '95 (to appear).

**Keywords:** Surface Meshing, Polygonal Approximations, Level-of-Detail, Quadrees, Wavelet Transforms, Wavelet Space Filtering, Biorthogonal Wavelets, Mean-Square Error, Digital Terrain Modeling

Pages: 8. Language: English.

Available files: [[abstract](#)] [[plain](#), [unix-](#) or [gnu-](#)compressed Postscript] [[plain](#), [unix-](#) or [gnu-](#)compressed Postscript] [[plain](#), [unix-](#) or [gnu-](#)compressed Postscript]

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## Visualization of Multidimensional Shape and Texture Features in Laser Range Data using Complex-Valued Gabor Wavelets

**M. H. Gross, R. Koch.** *Institut für Informationssysteme, ETH Zürich.* March 1995.

IEEE - Transactions on Visualization and Computer Graphics. Vol. 1. Nr. 1.

**Keywords:** Feature-based visualization, feature extraction, wavelet transform, Gabor wavelets, multidimensional visualization, subspace mapping, principal components, shape and texture analysis

Pages: 43. Language: english.

Available files: [[ieee-tvcg95](#)] [[abstract](#)]

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## SPIDER retrieval system at TREC5

**Jean-Paul Ballerini, Marco Buechel, Ruxandra Domenig, Daniel Knaus, Bojidar Mateev, Elke Mittendorf, Peter Schaeuble, Paraid Sheridan, Martin Wechsler.** *Institute for Information Systems, ETH Zürich.* 1997.

Proceedings of the 5th Text REtrieval Conference, TREC-5.

**Keywords:** information retrieval system, information routing, information retrieval, OCR data

Pages: 12. Language: English.

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## Speech Retrieval Based on Automatic Indexing

**M. Wechsler and P. Schauble.** *Swiss Federal Institute of Technology.* October 1995.

Final Workshop on Multimedia Information Retrieval (MIRO'95).

**Keywords:** Multimedia Information Retrieval, Speech Indexing

Pages: 8. Language: English.

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## First Experiences with a System for Content Based Retrieval of Information from Speech Recordings

**P. Schauble and M. Wechsler.** *Swiss Federal Institute of Technology (ETH).* August 1995.

IJCAI Workshop: Intelligent Multimedia Information Retrieval.

**Keywords:** Multimedia Information Retrieval, Speech Indexing

Pages: 12. Language: English.

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## The System Architecture and the Transaction Concept of the SPIDER Information Retrieval System

**D. Knaus and P. Schauble.** *Institute for Information Systems, ETH Zürich.* March 1996.

IEEE Bulletin of the Technical Committee on Data Engineering, Special Issue on the Integration of Information Retrieval and Database Technology.

**Keywords:** information retrieval system, database system, transaction processing

Pages: 9. Language: English.

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## Experiments in Multilingual Information Retrieval using the SPIDER System

**P. Sheridan and J.P. Ballerini.** *Institute for Information Systems, ETH Zürich.* May 1996.  
SIGIR'96.

**Keywords:** multilingual information retrieval

Pages: 8. Language: English.

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## Automatic Indexing for Storage and Retrieval of Line Drawing

**O. Lorenz and G. Monagan.** *Institute for Information Systems, ETH Zürich.* February 1995.  
Storage and Retrieval for Image and Video Databases III.

**Keywords:** none

Pages: 216-227 (10). Language: English.

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## A Retrieval System for Graphical Documents

**O. Lorenz and G. Monagan.** *Institute for Information Systems, ETH Zürich.* April 1995.  
Fourth Annual Symposium on Document Analysis and Information Retrieval.

**Keywords:** none

Pages: 291-300 (10). Language: English.

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## Hishlighting Relevant Passages for Users of th Interactive SPIDER Retrieval System

**D. Knaus, E. Mittendorf, P. Schäuble and P. Sheridan.** *Institute for Information Systems, ETH Zürich.* 1995.  
TREC 4 Conference.

**Keywords:** none

Pages: 10. Language: English.

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## Measuring the Effects of Data Corruption on Information Retrieval

**E. Mittendorf and P. Schäuble.** *Institute for Information Systems, ETH Zürich.* 1995.  
SDAIR '96.

**Keywords:** none

Pages: 10. Language: English.

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## Recognition of Cartographic Symbols

**Sushil Bhattacharjee and Gladys Monagan.** *Institute for Information Systems, ETH Zürich.* 1994.  
in Proc. 4th IAPR International Workshop on Machine Vision Applications, Kawasaki, Japan, 1994, pp. 226-229.

**Keywords:** cartography, maps, symbol recognition, shape classification

Pages: 4. Language: English.

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## A Procedure for Segmenting Touching Numbers in Cadastral Maps

**Gladys Monagan.** *Institute for Information Systems, ETH Zürich.* 1994.

4th IAPR International Workshop on Machine Vision Applications, Kawasaki, Japan, 1994, pp. 427-430.

**Keywords:** segmentation, OCR, map

Pages: 4. Language: English.

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## Extracting Words and Multi-part Symbols in Graphics Rich Document

**Mark Burge and Gladys Monagan.** *Institute for Information Systems, ETH Zürich.* 1995.

Proceedings of the 8th International Conference on Image Analysis and Processing ICIAP, Lecture Notes in Computer Science, Springer Verlag, 1995.

**Keywords:** document analysis, image understanding, text and symbol grouping, area Voronoi tessellation

Pages: 4. Language: English.

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## Audiodokumente in Hypermedia Informationssystemen

**U. Glavitsch, D. Knaus, J. Rentsch.** *Institute for Information Systems, ETH Zürich.* March 1993.

In: Proc. Hypermedia Conf., Informatik aktuell, Springer Verlag, March 1993.

**Keywords:** none

Pages: -. Language: English.

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## Appropriate Base Representation Using a Run Graph



**Gladys Monagan and Markus Rösli.** *Institute for Information Systems, ETH Zürich.* 1993.

Proceedings of the Second International Conf. on Document Analysis and Recognition, Tsukuba, Japan, pp. 623-626.

**Keywords:** map and drawing understanding, line extraction, run graph representation, skeleton, component recognition in drawings

Pages: 4. Language: English.

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## Metadata for Integrating Speech Documents in a Text Retrieval System

**U. Glavitsch, P. Schäuble and M. Wechsler.** *Institute for Information Systems, ETH Zürich.* November 1994.

**Keywords:** none

Pages: 6. Language: English.

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## A High Quality Vectorization Combining Local Quality Measures and Global Constraints

**Markus Rösli and Gladys Monagan.** *Institute for Information Systems, ETH Zürich.* August 1994.

Proceedings of the Third International Conf. on Document Analysis and Recognition, Montreal, Canada, August 14-16, 1995.

**Keywords:** raster-to-vector technique, graphical primitives, map vectorization

Pages: 6. Language: English.

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## SPIDER: A Multiuser Information Retrieval System for Semistructured and Dynamic Data

**P. Schäuble.** *Institute for Information Systems, ETH Zürich.* 1993.

In: SIGIR, 1993, pp. 318-327.

**Keywords:** none

Pages: -. Language: English.

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## Verbesserung der Kantenbeschreibung in Hyperkollektionen durch Relevanzrückkoppelung

**D. Stieger.** *Institute for Information Systems, ETH Zürich.* March 1993.

In: Proc. Hypermedia Conf. , Informatik aktuell, Springer Verlag, March 1993.

**Keywords:** none

Pages: -. Language: English.

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## A Semantic Link Model for Hypertext Retrieval

**H. P. Frei and D. Stieger.** *Institute for Information Systems, ETH Zürich.* 1993.

In: Berichte des Departements Informatik ETH, No. 194, 1993.

**Keywords:** none

Pages: -. Language: English.

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## A New Reestimation Formula for Hidden Markov Models to Enforce State Transition

## Constraints

**P. Schäuble.** *Institute for Information Systems, ETH Zürich.* November 1994.

In: EUSIPCO, 1994, pp. 127-130.

**Keywords:** none

Pages: 4. Language: English.

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## Hypermedia

**H.P. Frei, P. Schäuble (ed.)**. *Institute for Information Systems, ETH Zürich.*

**Keywords:** none

Pages: -. Language: English.

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## Assessing the Retrieval Effectiveness of a Speech Retrieval System by Simulating Recognition Errors

**P. Schäuble and U. Glavitsch.** *Institute for Information Systems, ETH Zürich.* November 1994.

In: ARPA Workshop on Human Language Technology (HLT'94), 1994.

**Keywords:** none

Pages: -. Language: English.

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## Speech Retrieval in a Multimedia System

**U. Glavitsch and P. Schäuble.** *Institute for Information Systems, ETH Zürich.* 1992.

In: EUSIPCO, 1992, pp. 295-298.

**Keywords:** none

Pages: -. Language: English.

Available files: [[abstract](#) ]

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## Making Use of Hypertext Links when Retrieving Information

**H. P. Frei and D. Stieger.** *Institute for Information Systems, ETH Zürich.* 1992.

In: ACM Conference on Hypertext and Hypermedia, ECHT'92, 1992, pp. 102-111.

**Keywords:** none

Pages: -. Language: English.

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## On the Expressive Power of Query Languages

**P. Schäuble and B. Wüthrich.** *Institute for Information Systems, ETH Zürich.* 1992.

In: ACM-TOIS, 12(1).

**Keywords:** none

Pages: -. Language: English.

Available files: [[abstract](#) ]

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## First Experiences with a System for Content Based Retrieval of Information from

## Speech Recordings

**Peter Schäuble, Martin Wechsler.** *Institute for Information Systems, ETH Zürich.* March 1995.

**Keywords:** Speech Information Retrieval

Language: English.

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## Eine neue Indexierungsmethode fuer Information Retrieval auf Audiodokumenten

**Martin Wechsler.** *Institut fuer Informationssysteme, ETH Zürich.* February 1995.

submitted (HIM 95).

**Keywords:** Speech Information Retrieval

Pages: 12. Language: Deutsch.

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## Applying a Similarity Thesaurus to a Large Collection for Information Retrieval

**Hans-Peter Frei and Yonggang Qiu.** *Institute for Information Systems, ETH Zürich.* January 1995.

**Keywords:** none

Pages: 15. Language: English.

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## Applying Probabilistic Term Weighting to OCR Text in the Case of a Large Alphabetic Library Catalogue

**Elke Mittendorf, Peter Schäuble, Paraic Sheridan.** *Institute for Information Systems, ETH Zürich.* January 1995.

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**Keywords:** none

Pages: 8. Language: English.

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## Improving a Basic Retrieval Method by Links and Passage Level Evidence

**D. Knaus, E. Mittendorf and P. Schäuble.** *Institute for Information Systems, ETH Zürich.* November 1994.

TREC-3 Conference, 1994.

**Keywords:** none

Pages: 6. Language: English.

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## Effective and Efficient Retrieval from Large and Dynamic Document Collections

**D. Knaus and P. Schäuble.** *Institute for Information Systems, ETH Zürich.* 1993.

In: TREC-2 Proceedings, 1993, pp. 163-170.

**Keywords:** none

Pages: 9. Language: English.

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## Document and Passage Retrieval Based on Hidden Markov Models

**E. Mittendorf and P. Schäuble.** *Institute for Information Systems, ETH Zürich.* November 1994.

In: SIGIR, 1994, pp. 318-327.

**Keywords:** none

Pages: 10. Language: English.

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## Processes + Transactions = Distributed Applications

**Gustavo Alonso.** *Institute for Information Systems, ETH Zürich.* September 1997.

Proceedings of High Performance Transaction.

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## Distributed Client Caching for Multimedia Data

**D. Ma and G. Alonso.** *Institute for Information Systems, ETH Zürich.* September 1997.

Proc. of the 3rd Int. Workshop on MIS.

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## Distributed Processing over Stand-alone Systems and Applications

**Gustavo Alonso, Claus Hagen, Hans-Joerg Schek, Markus Tresch.** *Institute for Information Systems, ETH Zürich.* August 1997.

Proceedings of VLDB'97.

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## Client-Caching Algorithms in a Video-on-Demand System

**D. Ma and G. Alonso.** *Institute of Information Systems, ETH Zürich.* April 1997.

Technical report.

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## Flexible Kopplung von CIM-Systemen mit Hilfe von Datenbank-Agenten

**H. Schuldt and M. Tresch.** *Institute of Information Systems, ETH Zürich.* May 1997.

9. Workshop "Grundlagen von Datenbanken".

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## Exploiting Atomic Broadcast in Replicated Databases

**D. Agrawal, G. Alonso, A. El Abbadi, I. Stanoi.** *Institute for Information Systems, ETH Zürich.* August 1997.

Proceedings of Euro-Par'97.

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## Physical Database Design for Raster Images in Concert

**Lukas Relly and Hans-J. Schek and Olof Henricsson and Stephan Nebiker.** *Institute of Information Systems, ETH Zürich.* July 1997.

5th International Symposium on Spatial Databases (SSD'97).

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## Geo-Opera: Workflow Concepts for Spatial Processes

Alonso, G. and Hagen, C. *Institute for Information Systems, ETH Zürich*. July 1997.  
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## Kombination von aktiven Mechanismen und Transaktionen im TRAMs-Projekt

C. Hagen. *Institute of Information Systems, ETH Zürich*. May 1996.  
8. Workshop "Grundlagen von Datenbanken".

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## Physischer Datenbankentwurf für mehrdimensionale Daten in Concert

Lukas Relly. *Institut für Informationssysteme, ETH Zürich*. March 1997.  
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## Correctness and Parallelism in Composite Systems

Alonso, G., Blott, S., Fessler, A., Schek, H.-J. *Institute of Information Systems, ETH Zürich*. May 1997.

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## Workflow Management: the Next Generation of Distributed

Alonso, G., Mohan, C. *Kluwer Academic Publishers*. 1997.  
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## Distributed Data Management in Workflow Environments

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## Partial Database Replication and Group Communication Primitives

G. Alonso. *Institute for Information Systems, ETH Zürich*. March 1997.  
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## Functionality and Limitations of Current Workflow Management Systems

Gustavo Alonso, Divyakant Agrawal, Amr El Abbadi and C. Mohan. *Institute for Information Systems, ETH Zürich*. 1996.  
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## Extending TP--Monitors for Intra-Transaction Parallelism

**K. Kaufmann and H.-J. Schek.** *Institute for Information Systems, ETH Zürich.* December 1996.  
Proc. of the 4th Int. Conf. on Parallel and Distributed Information Systems.

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## Intra-Transaction Parallelism in the Mapping of an Object Model to a Relational Multi-Processor System

**Michael Rys, Moira C. Norrie, Hans-Jörg Schek.** *Institute for Information Systems, ETH Zürich.* September 1996.  
Proc. of the 22nd Internat. Conference VLDB.

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## Providing High Availability in Very Large Workflow Management Systems

**M. Kamath, G. Alonso, R. Guenthoer, C. Mohan.** *Institute for Information Systems, ETH Zürich.* March 1996.  
Proceedings of the Fifth International Conference on Extending Database Technology (EDBT'96).

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## Research Issues in Large Workflow Management Systems

**Gustavo Alonso and Hans-Joerg Schek.** *Institute for Information Systems, ETH Zürich.* May 1996.

Proceedings of the NSF Workshop on Workflow and Process Automation in Information Systems.

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## Advanced Transaction Models in Workflow Contexts

**G. Alonso, D. Agrawal, A. El Abbadi, M. Kamath, R. Guenthoer, C. Mohan.** *Institute for Information Systems, ETH Zürich.* February 1996.

Proceedings of the 12th International Conference on Data Engineering.

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## Accessing Geographical Metafiles through a Database Storage System

**Stephen Blott and Andrej Vckovski.** *Institute for Information Systems, ETH Zürich.* August 1995.

Proceedings of the Fourth International Symposium on Large Spatial Databases.

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## An Open Abstract-Object Storage System

**Stephen Blott and Lukas Relly and Hans-Joerg Schek.** *Institute for Information Systems, ETH Zürich.* June 1996.

Proceedings of the 1996 ACM SIGMOD Conference on Management of Data.

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## Database Technology in Workflow Environments

**Gustavo Alonso and Hans-Joerg Schek.** *Institute for Information Systems, ETH Zürich.* 1996.  
Informatik.

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## The Role of Database Technology in Workflow Management

**Gustavo Alonso.** *Institute for Information Systems, ETH Zürich.* June 1996.  
Proceedings of the First International Conference on Interoperable and Cooperative Systems.

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## Terminological Reasoning by Query Evaluation: A Formal Mapping of a Terminological Logic to an Object Data Model

**U. Reimer and P. Lippuner and M. Norrie and M. Rys.** *Institute for Information Systems, ETH Zürich and Swiss Life Information Systems Research Group, Zürich.* August 1995.  
Proc. Int. KRUSE Symp. (Knowledge Retrieval, Use and Storage for Efficiency).

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## Transactional Workflows Support using Middleware

**A. Deacon.** *Institute for Information Systems, ETH Zürich.* September 1995.  
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## Text Search Using Database Systems Revisited --- Some Experiments

**H. Kaufmann and H.-J. Schek.** *Institute for Information Systems, ETH Zürich.* July 1995.

Proc. of the 13th British National Conference on Databases.

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## Multidatabase Agents for CIM Systems

**M. Wunderli and M. C. Norrie and W. Schaad.** *Institute for Information Systems, ETH Zürich.* July 1995.

Proc. of the 3rd Int. Conf. on Computer Integrated Manufacturing (ICCIM'95).

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## Relaxation of Correctness in Database Systems

**H. Kaufmann and M.C. Norrie.** *Institute for Information Systems, ETH Zürich.* June 1995.

Advances in Databases and Information Systems (ADBIS) Proc. of the 2nd International Workshop of the Moscow ACM SIGMOD Chapter (in cooperation with the Russian Foundation for Basic Research).

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## Universal Contextual Queries in Database Networks

**M. C. Norrie and D. Kerr.** *Institute for Information Systems, ETH Zürich.* May 1995.

Proc. of the 3rd Int. Conf. on Cooperative Information Systems.

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## Flexible Enterprise Integration through Coordination Repositories

**M. C. Norrie and M. Wunderli.** *Institute for Information Systems, ETH Zürich.* August 1995.

Proc. of the 11th Int. Conf. on CAD/CAM, Robotics and Factories of the Future (CARS & FOF).

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## A Storage Manager for the Development of Spatial Data Structures

**L. Relly, A. Wolf.** *Institute for Information Systems, ETH Zürich.* March 1994.

Int. Workshop on Advanced Research in Geographic Information Systems.

**Keywords:** storage manager, GIS

Pages: 10. Language: English.

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## **Efficient Integration of Declarative Paradigms into Symbolic Computation Systems**

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*February 10, 1998*