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Bibliography

- [ACC⁺99] G. Auffret, J. Carrive, O. Chevet, T. Dechilly, R. Ronfard, and B. Bachimont. Audiovisual-based hypermedia authoring: using structured representations for efficient access to av documents. In Klaus Tochtermann, Jorg Westbomke, Uffe K. Will, and John J. Leggett, editors, *Proceedings of the 10th ACM conference on Hypertext and Hypermedia*, pages 169 – 178, Darmstadt, Germany, February 1999. ACM.
- [Alt01] AltaVista. *AltaVista - Image Search*. www.altavista.com/sites/search/simage, 2001.
- [App87] D. E. Appelt. Bidirectional grammars and the design of natural language generation systems. In *Proceedings of Third Conference on Theoretical Issues in Natural Language Processing (TINLAP-3)*, pages 185 – 191, New Mexico State University, Las Cruces, New Mexico, January 1987.
- [AR01] Anne Abeillé and Owen Rambow. *Tree Adjoining Grammars: Mathematical, Computational and Linguistic Properties*. University of Chicago Press, first edition, January 2001.
- [Arn74] R. Arnheim. *Art and Visual Perception: A Psychology of the Creative Eye*. Faber and Faber, London, 1974.
- [AS88] G. T. M. Altmann and M. J. Steedman. Interaction with context during human sentence processing. *Cognition*, 30(3):191 – 238, 1988.
- [ASF97] Vassilis Athitsos, Michael J. Swain, and Charles Frankel. Distinguishing photographs and graphics on the world wide web. In *Workshop on Content-Based Access of Image and Video Libraries*, Puerto Rico, June 1997.
- [ASU86] Alfred V. Aho, Ravi Sethi, and Jeffrey D. Ullman. *Compilers – Principles, Techniques, and Tools*. Addison-Wesley, 1986.
- [Bak79] J. Baker. Trainable grammars for speech recognition. In *Speech Communication Papers for the 97th Meeting of the Acoustical Society of America*, pages 547 – 550, Cambridge, Massachusetts, 1979. MIT Press.
- [BB75] John Seely Brown and Richard R. Burton. Multiple representations of knowledge for tutorial reasoning. In Daniel G. Bobrow and Allan Collins, editors, *Representation and Understanding, Language, Thought, and Culture*, pages 311 – 349. Academic Press, 1975.

- [BK86] J.A. Bergstra and J. W. Klop. Process algebra: specification and verification in bisimulation semantics. In M. Hazewinkel, J.K. Lenstra, and G.T.L. Meertens, editors, *Mathematics & Computer Science II*, volume 4 of *CWI Monograph*. North-Holland, 1986.
- [BK94] J.A. Bergstra and P. Klint. The toolbus - a component interconnection architecture. Technical Report P9408, Programming Research Group, University of Amsterdam, 1994.
- [BK95] P. A. Boncz and M. L. Kersten. Monet: An Impressionist Sketch of an Advanced Database System. In *Proceedings Basque International Workshop on Information Technology*, San Sebastian, Spain, July 1995.
- [BK96] J.A. Bergstra and P. Klint. The discrete time toolbus. In M. Wirsing and M. Nivat, editors, *Algebraic Methodology and Software Technology (AMAST'96)*, volume 1101 of *Lecture Notes in Computer Science*, pages 286 – 305. Springer-Verlag, 1996.
- [BK99] P. A. Boncz and M. L. Kersten. MIL Primitives for Querying a Fragmented World. *The VLDB Journal*, 8(2):101–119, October 1999. The original publication is available in LINK, © Springer-Verlag.
- [Bla97] Philippe Blanche. Disambiguating with controlled disjunctions. In *Proceedings of the International Workshop on Parsing Technologies*, 1997.
- [Bla98] Philippe Blanche. Parsing ambiguous structures using controlled disjunctions and unary quasi-trees. In *Proceedings of ACL-COLING'98*, 1998.
- [BLFIM98] T. Berners-Lee, R. Fielding, U.C. Irvine, and L. Masinter. *Uniform Resource Identifiers (URI): Generic Syntax*. The Internet Engineering Task Force, www.ietf.org/rfc/rfc2396.txt, August 1998 1998.
- [Blo02] Henk Ernst Blok. *Database Optimization Aspects for Information Retrieval*. PhD thesis, Centre for Telematics and Information Technology, Enschede, The Netherlands, April 2002.
- [Bon02] P. A. Boncz. *Monet: A Next-Generation DBMS Kernel For Query-Intensive Applications*. Ph.d. thesis, Universiteit van Amsterdam, Amsterdam, The Netherlands, May 2002.
- [Boo69] T. L. Booth. Probabilistic representation of formal languages. In *IEEE Conference Recors of the 1969 Tenth Annual Symposium on Switching and Automata Theory*, pages 74 – 81, Waterloo, Ontario, 1969. IEEE.
- [Bos99] Peter Bosch. *Mixed-Media File Systems*. PhD thesis, Centre for Telematics and Information Technology, Enschede, The Netherlands, Juni 1999.
- [Bou03] Ronald Bourret. *XML Database Products*. www.rpbourret.com/xml/XMLDatabaseProds.htm, 2003.
- [Bre82] J. Bresnan, editor. *The Mental Representation of Grammatical Relations*. MIT Press, Cambridge, MA, 1982.
- [BWK98] P. A. Boncz, A. N. Wilschut, and M. L. Kersten. Flattening an Object Algebra to Provide Performance. In *Proceedings of the IEEE International Conference on Data Engineering (ICDE)*, pages 568–577, Orlando, FL, USA, February 1998.

- [BWvZ⁺01] H. E. Blok, M. A. Windhouwer, R. van Zwol, M. Petkovic, P. M. G. Apers, M. L. Kersten, and W. Jonker. Flexible and scalable digital library search. In *Proceedings of the International Conference on Very Large Data Bases (VLDB)*, Rome, Italy, September 2001.
- [BYRN99] Ricardo Baeza-Yates and Berthier Ribeiro-Neto. *Modern Information Retrieval*. Addison Wesley, 1999.
- [CAM01] G. Cobena, S. Abiteboul, and A. Marian. Detecting changes in xml documents. In *Proceedings of ICDE*, 2001.
- [CDP99] Carlo Colombo, Alberto Del Bimbo, and Pietro Pala. Semantics in visual information retrieval. *IEEE MultiMedia*, 6(3):38 – 53, July 1999.
- [CGM97] S. S. Chawathe and H. Garcia-Molina. Meaningful change detection in structured data. In *Proceedings of ACM SIGMOD*, 1997.
- [Cho59] Noam Chomsky. On certain formal properties of grammars. *Information Control*, 2:137–167, 1959.
- [CK85] A. Copeland and S. Khoshafian. A decomposition storage model. In *Proceedings of the ACM SIGMOD International Conference on Management of Data*, pages 268 – 279, Austin, Texas, USA, May 1985.
- [CK01] James Clark and Kohsuke Kawaguchi. *Guidelines for using W3C XML Schema Datatypes with RELAX NG*. Oasis, www.oasis-open.org/committees/relax-ng/xsd.html, 2001.
- [CL96] J. Cha and S. Lee. Comib: Composite icon browser for multimedia databases. *Multimedia Tools and Applications*, 3(3):203 – 223, 1996.
- [Cla99] James Clark. XT. www.blnz.com/xt/index.html, 1999.
- [CM77] K. Culik II and H.A. Maurer. Tree controlled grammars. *Computing*, 19:129 – 139, 1977.
- [CM01] James Clark and Makoto Murata. *RELAX NG Specification*. Oasis, www.oasis-open.org/committees/relax-ng/spec-20011203.html, 2001.
- [CMOY96] I.J. Cox, M.L. Miller, S.M. Omohundro, and P.N. Yianilos. Pichunter: Bayesian relevance feedback for image retrieval. In *Proceedings of ICPR 1996*, pages 361 – 369, Vienna, Austria, 1996.
- [CSL01] Princeton University Cognitive Science Laboratory. *WordNet - a Lexical Database for English*. www.cogsci.princeton.edu/~wn/, 2001.
- [CVDKP94] Erzsébet Csuhanj-Varhú, Jürgen Dassow, Jozef Kelemen, and Gheorghe Păun. *Grammar Systems: A Grammatical Approach to Distribution and Cooperation*, volume 5 of *Topics in computer mathematics*. Gordon and Breach Science Publishers, 1994.
- [DAR03] DARPA. *The DAML+OIL ontology markup language*. www.daml.org, 2003.
- [Dat01] Datapower. *XSLTMark*. www.datapower.com/xml_community/xsltmark.html, 2001.
- [DCM01] DCMI. *Dublin Core Metadata Initiative*. dublincore.org, 2001.

- [DE90] Jochen Dörre and Andreas Eisele. Feature logic with disjunctive unification. In *Proceedings of COLING'90*, pages 100 – 105, 1990.
- [Del99] Alberto Del Bimbo. *Visual Information Retrieval*. Morgan Kaufmann Publishers, Inc., 1999.
- [dJGHN00] F. de Jong, J-L. Gauvain, D. Hiemstra, and K. Netter. Language-based multimedia information retrieval. In *Proceedings of RIAO*, pages 713–725, Paris, France, 2000.
- [dJK] H.A. de Jong and P. Klint. Toolbus: the next generation. In *Proceedings of Formal Methods Components and Objects 2002 (FMCO 2002)*. to appear.
- [DP89] J. Dassow and G. Păun. *Regulated Rewriting in Formal Language Theory*, volume 18 of *EATCS Monographs on Theoretical Computer Science*. Springer-Verlag, 1989.
- [DP97] A. Del Bimbo and P. Pala. Retrieval by elastic matching of user sketches. *IEEE Trans. on Pattern Analysis and Machine Intelligence*, 19(2):121 – 132, 1997.
- [dV99] Arjen P. de Vries. *Content and Multimedia Database Management Systems*. PhD thesis, Centre for Telematics and Information Technology, Enschede, The Netherlands, December 1999.
- [dVEK98] Arjen P. de Vries, Brian Eberman, and David E. Kovalcin. The design and implementation of an infrastructure for multimedia digital libraries. In *Proceedings of the 1998 International Database Engineering & Applications Symposium*, pages 103–110, Cardiff, UK, July 1998.
- [dVWAK00] A. P. de Vries, M. A. Windhouwer, P. M. G. Apers, and M. L. Kersten. Information Access in Multimedia Databases based on Feature Models. *New Generation Computing*, 18(4):323–339, October 2000.
- [Eak96] John P. Eakins. Automatic image content retrieval - are we getting anywhere? In *Proceedings of Third International Conference on Electronic Library and Visual Information Research*, pages 123 – 135, De Montfort University, Milton Keynes, May 1996.
- [Eng02] Joost Engelfriet. The delta operation: From strings to trees to strings. In W. Brauer, H. Ehrig, J. Karhumäki, and A. Salomaa, editors, *Formal and Natural Computing*, volume 2300 of *Lecture Notes in Computer Science (LNCS)*, pages 39 – 56. Springer-Verlag, 2002.
- [Fal96] Christos Faloutsos. *Searching multimedia databases by content*. Kluwer Academic Publishers, Dordrecht, NL, 1996.
- [Fal01] David C. Fallside. *XML Schema Part 0: Primer*. W3C, www.w3.org/TR/xmlschema-0/, 2001.
- [Fau94] Laurene V. Fausett. *Fundamentals of Neural Networks*. Prentice Hall, 1994.
- [FCP00] G. Frederix, G. Caenen, and E. J. Pauwels. Pariss: Panoramic, adaptive and reconfigurable interface for similarity search. In *Proceedings of the ICIP 2000 International Conference on Image Processing*, pages 222 – 225, September 2000.

- [FH99] H. Fernau and M. Holzer. Bidirectional cooperating distributed grammar systems. *Publicationes Mathematicae Debrecen*, (54):787 – 806, 1999.
- [FK99] Daniela Florescu and Donald Kossman. A performance evaluation of alternative mapping schemes for storing xml data in a relational database. Technical Report 3680, INRIA, Rocquencourt, France, May 1999.
- [Flo62] R. W. Floyd. On the non-existence of a phrase-structure for algol 60. *Communications of the ACM*, (5):483 – 484, 1962.
- [Fri02] Jeffrey E. F. Friedl. *Mastering Regular Expressions*. O'Reilly & Associates, Inc., second edition, 2002.
- [FSA96] Charles Frankel, Michael J. Swain, and Vassilis Athitsos. WebSeer: An Image Search Engine for the World Wide Web. Technical Report 96-14, The University of Chicago, August 1996.
- [GAS00] Th. Gevers, F. Aldershoff, and A. W. M. Smeulders. Classification of images on internet by visual and textual information. In *Internet Imaging, SPIE*, San Jose, January 2000.
- [GEF⁺99] W. Grosso, H. Eriksson, R. Ferguson, J. Gennari, S. Tu, and M. Musen. Knowledge modeling at the millennium (the design and evolution of protege-2000). Technical Report SMI-1999-0801, Stanford Medical Informatics (SMI), 1999.
- [Gel95] David Gelernter. Generative communication in linda. *ACM Transactions on Programming Languages and Systems*, 7(1):80 – 112, January 1995.
- [GJ98] Dick Grune and Cerial Jacobs. *Parsing Techniques - A Practical Guide*. Vrije Universiteit, Amsterdam, 1998.
- [Goo01] Google. *Google Image Search*. www.google.com/imghp, 2001.
- [Gro94] William I. Grosky. Multimedia information systems. *IEEE MultiMedia*, 1(1):12–24, 1994.
- [Gru02] Torsten Grust. Accelerating xpath location steps. In *Proceedings of the 21st ACM SIGMOD International Conference on Management of Data (SIGMOD 2002)*, pages 109–120, Madison, Wisconsin, June 2002.
- [GvK03] Torsten Grust and Maurice van Keulen. Tree Awareness for Relational DBMS Kernels: Staircase Join. In *Intelligent Search on XML*, Lecture Notes in Computer Science (LNCS), © Springer-Verlag, 2003. To appear.
- [GvKT03] Torsten Grust, Maurice van Keulen, and Jens Teubner. Accelerating xpath location steps in any rdms (even if all you got is a binary table). *ACM Transactions on Database Systems (TODS)*, 2003. under revision.
- [GW98] Michael Gorman and Paul W. Winkler, editors. *Anglo-American Cataloguing Rules*. Amer Library Assn Editions, 2nd revision edition, 1998.
- [GYA97] James Griffioen, Raj Yavatkar, and Robert Adams. A framework for developing content-based retrieval systems. In Mark T. Maybury, editor, *Intelligent Multimedia Information Retrieval*. The AAAI Press and The MIT Press, 1997.
- [Hal73] Patrick A. V. Hall. Equivalence between and/or graphs and context-free grammars. *Communications of the ACM (CACM)*, 16(7):444 – 445, July 1973.

- [HKR90] J. Heering, P. Klint, and J. Rekers. Incremental generation of parsers. *IEEE Transactions on Software Engineering*, 16(12):1344 – 1350, 1990.
- [HMU01] John E. Hopcroft, Rajeev Motwani, and Jeffrey D. Ullman. *Introduction to Automata Theory, Languages, and Computation*. Addison-Wesley, second edition, 2001.
- [IBM01] IBM. *XML Diff and Merge Tool*. www.alphaworks.ibm.com/tech/xmldiffmerge, 2001.
- [ISO01] ISO. *Overview of the MPEG-7 Standard*. mpeg.telecomitalia.com/standards/mpeg-7/mpeg-7.htm, 2001.
- [ISO02] ISO. *Overview of the MPEG-4 Standard*. mpeg.telecomitalia.com/standards/mpeg-4/mpeg-4.htm, 2002.
- [Jel69] F. Jelinek. Fast sequential decoding algorithm using a stack. *IBM Journal of Research and Development*, 64:532 – 556, 1969.
- [Jel02] Rick Jelliffe. *The Schematron Assertion Language 1.5*. Academia Sinica Computing Centre, www.ascc.net/xml/resource/schematron/Schematron2000.html, 2002.
- [JFS95] C. E. Jacobs, A. Finkelstein, and D. H. Salesin. Fast multiresolution image querying. In *Proceedings of SIGGRAPH 95*, pages 277–286, August 1995.
- [JM00] Daniel Jurafsky and James H. Martin. *Speech and Language Processing*. Prentice Hall, 2000.
- [JS98] Adrian Johnstone and Elizabeth Scott. Construction reduced derivation trees. Technical Report CSD-TR-98-09, Department of Computer Science, Royal Holloway, University of London, October 12 1998.
- [KD96] A. Knott and R. Dale. *Choosing a Set of Rhetorical Relations for Text Generation: A Data-Drive Approach*. Trends in Natural Language Generation: an Artificial Intelligence Perspective. 1996.
- [Ker89] M. L. Kersten. A grammatical database model: An informal introduction. Unpublished manuscript, May 1989.
- [KKK⁺91] P. Kophakis, A. Karmirantzou, Y. Kavaklis, E. Petrakis, and S. Orphanoudakis. Image archiving by content: An object oriented approach. In *SPIE Int. Conf. on Image Processing, Medical Imaging V*, pages 227 – 233, San Jose, CA, February 1991.
- [KNW98a] M. L. Kersten, N. Nes, and M. Windhouwer. A feature database for multimedia objects. In *ERCIM Database Research Group Workshop on Metadata for Web Databases*, pages 49–57, Bonn, Germany, 1998.
- [KNW98b] M. L. Kersten, N. Nes, and M. A. Windhouwer. A Feature Database for Multimedia Objects. Technical Report INS-R9807, CWI, Amsterdam, The Netherlands, July 1998.
- [KS89] M. L. Kersten and A. Siebes. The grammatical datamodel; its algebra. Unpublished manuscript, October 1989.
- [KSvdBB96] M. L. Kersten, F. Schippers, C. A. van den Berg, and P. A. Boncz. Mx documentation tool. January 1996.

- [KV94] Paul Klint and Eelco Visser. Using filters for the disambiguation of context-free grammars. In G. Pighizzini and P. San Pietro, editors, *Proceedings of the ASNICS Workshop on Parsing Theory*, pages 1–20, Milano, Italy, 1994.
- [LaL77] W. R. LaLonde. Regular right part grammars and their parsers. *Communications of the ACM*, 20(10):731–741, 1977.
- [Lan74] B. Lang. Deterministic techniques for efficient non-deterministic parsers. In J. Loeckx, editor, *Proceedings of the Second Colloquium on Automata, Languages and Programming*, volume 14 of *Lecture Notes in Computer Science*, pages 225 – 269. Springer Verlag, 1974.
- [Lew00] Michael S. Lew. Next generation web searches for visual content. *IEEE Computer*, pages 46–53, November 2000.
- [Lew02] Amelia Lewis. *Not My Type: Sizing Up W3C XML Schema Primitives*. www.xml.com/pub/a/2002/07/31/wxstypes.html, 2002.
- [LH96] Michael S. Lew and Nies Huijsmans. Information theory and face detection. In *Proceedings of the International Conference on Pattern Recognition*, pages 601–605, Vienna, Austria, 1996.
- [Lin97] Peter Linz. *An Introduction to Formal Languages and Automata - Second Edition*. Jones and Bartlett Publications, 1997.
- [LMB92] John R. Levinne, Tony Mason, and Doug Brown. *lex & yacc*. O'Reilly & Associates, Inc., 1992.
- [Ltd03] Monsell EDM Ltd. *Change Control for XML, in XML*. www.deltaxml.com, 2003.
- [Man94] A. Manaster Ramer. Uses and misuses of mathematics in linguistics. In *Proceedings of Xth Congress on Natural and Formal Languages*, Sevilla, 1994.
- [Mat01] The MathWorks, Inc. *The MathWorks Homepage*. www.mathworks.com, 2001.
- [MB01] Colin Meek and William P. Birmingham. Thematic extractor. In *2nd Annual International Symposium on Music Information Retrieval*, 2001.
- [MHF83] Mitchell Marcus, Donald Hincle, and Margaret M. Fleck. D-theory: Talking about talking about trees. In *Proceedings of the 21st Annual Meeting of the Association for Computational Linguistics*, pages 129 – 136, 1983.
- [Mic68] D. Michie. Memo functions and machine learning. *Nature*, 218:19 – 22, 1968.
- [Mic99] Microsoft, www.microsoft.com/Developer/PRODINFO/directx/dxm/help/ds/default.htm. *DirectShow*, 1999.
- [Mit97] Tom M. Mitchell. *Machine Learning*. McGraw-Hill, 1997.
- [MM96] Valeria Mihalache and Victor Mitrana. Deterministic cooperating distributed grammar systems. Technical Report 63, Turku Centre for Computer Science, November 1996.
- [MM99] J. Martinez and N. Mouaddib. Multimedia and Databases: A Survey. *Networking and Information Systems Journal*, 2(1):89–123, 1999.

- [MMT89] W. C. Mann, C. X. M. I. M. Matthiesen, and S. A. Thompson. Rhetorical structure theory and text analysis. Technical Report ISI/RR-89-242, Information Sciences Institute, University of Southern California, November 1989.
- [Nes00] N. Nes. *Image Database Management System Design Considerations, Algorithms and Architecture*. Ph.d. thesis, Universiteit van Amsterdam, Amsterdam, The Netherlands, December 2000.
- [Neu91] Günter Neumann. A bidirectional model for natural language processing. In *Fifth Conference of the European Chapter of the Association for Computational Linguistics*, pages 245 – 250, Berlin, Germany, April 1991.
- [Nil98] Nils J. Nilsson. *Artificial Intelligence – A New Synthesis*. Morgan Kaufmann, 1998.
- [NK98] N. Nes and M. L. Kersten. The Acoi Algebra: a Query Algebra for Image Retrieval Systems. In *Proceedings of the British National Conference on Databases (BNCOD)*, volume 1405 of *Lecture Notes in Computer Science (LNCS)*, © Springer-Verlag, pages 77–88, Cardiff, Wales, U.K., July 1998.
- [NL00] F. Nack and C. Lindley. Production and maintenance environments for interactive audio-visual stories. In *Proceedings ACM MM 2000 Workshops - Bridging the Gap: Bringing Together New Media Artists and Multimedia Technologists*, pages 21 – 24, Los Angeles, CA, October 2000.
- [Nor91] Peter Norvig. Techniques for automatic memoization with application to context-free parsing. *Computational Linguistics*, 17(1):91 – 98, 1991.
- [NWH⁺01] F. Nack, M. A. Windhouwer, L. Hardman, E. Pauwels, and M. Huijberts. The Role of High-level and Low-level Features in Style-based Retrieval and Generation of Multimedia Presentations. *The New Review of Hypermedia and Multimedia*, 7:39–65, 2001.
- [NWP⁺01] F. Nack, M. A. Windhouwer, E. Pauwels, M. Huijberts, and L. Hardman. The Role of High-level and Low-level Features in Semi-automated Retrieval and Generation of Multimedia Presentations. Technical Report INS-R0108, CWI, Amsterdam, The Netherlands, June 2001.
- [OS95] V.E. Ogle and M. Stonebraker. Chabot: Retrieval from a relational database of images. *IEEE Computer*, pages 40–48, September 1995.
- [Par93] Terence John Parr. *Obtaining Practical Variants of $LL(k)$ and $LR(K)$ for $k > 1$ by Splitting the Atomic k -tuple*. PhD thesis, Purdue University, August 1993.
- [Pei60] C. Peirce. *The Collected Papers of Charles Sanders Peirce: (1) Principles of Philosophy and (2) Elements of Logic*. The Belknap Press of Harvard University Press, Cambridge, 1960.
- [Pet03] Milan Petkovic. *Content-Based Video Retrieval Supported by Database Technology*. PhD thesis, Centre for Telematics and Information Technology, Enschede, The Netherlands, February 2003.
- [PF00] E. Pauwels and G. Frederix. Image segmentation by nonparametric clustering based on the kolmogorov-smirnov distance. In *Proceedings of the ECCV 2000*,

- 6th European Conference on Computer Vision, pages 85 – 99, Dublin, June 2000.
- [PJ00] M. Petkovic and W. Jonker. A framework for video modelling. In *proceedings of Intl. Conf. on Applied Informatics*, Innsbruck, Austria, February 2000.
- [PQ95] Terence J. Parr and Russell W. Quong. ANTLR: A predicated- $ll(k)$ parser generator. *Journal of Software, Practice & Experience*, 25:789, July 1995. 1995.
- [PQ96] Terence J. Parr and Russell W. Quong. LL and Lr translators need $k > 1$ lookahead. *SIGPLAN Notices*, 31(2), 1996.
- [Pro03] The Apache Jakarta Project. *Apache Tomcat*. jakarta.apache.org/tomcat/, 2003.
- [PS94] C. Pollard and I.A. Sag. *Head-Driven Phrase Structure Grammar*. University of Chicago Press, Chicago, 1994.
- [PS98] Gheorghe Paun and Arto Salomaa, editors. *Grammatical Models of Multi-Agent Systems*. Topics in Computer Mathematics. Taylor & Francis, 1998.
- [PWvZ⁺02] M. Petkovic, M. A. Windhouwer, R. van Zwol, H. E. Blok, P. M. G. Apers, M. L. Kersten, and W. Jonker. Content-based Video Indexing for the Support of Digital Library Search. In *Proceedings of the IEEE International Conference on Data Engineering (ICDE)*, San Jose, California, USA, February 2002.
- [Qui93] J. Ross Quinlan. *C4.5: Programs for Machine Learning*. Morgan Kaufmann, 1993.
- [RBvO⁺00] L. Rutledge, B. Bailey, J. van Ossenbrugge, L. Hardman, and J. Geurts. Generating presentation constraints from rhetorical structure. In *Proceedings of the 11th ACM Conference on Hypertext and Hypermedia*, pages 19 – 28, San Antonio, Texas, USA, May - June 2000.
- [Rek91] J. Rekers. Generalized Lr parsing for general context-free grammars. Technical Report CS-R9153, Centrum voor Wiskunde en Informatica (CWI), Amsterdam, 1991.
- [RHM98] Yong Rui, Thomas S. Huang, and Sharad Mehrotra. Human perception subjectivity and relevance feedback in multimedia information retrieval. In *Proceedings of IS&T and SPIE Storage and Retrieval of Image and Video Databases VI*, San Jose, CA, January 1998.
- [RHOM98] Yong Rui, Thomas S. Huang, Michael Ortega, and Sharad Mehrotra. Relevance feedback: A power tool in interactive content-based image retrieval. *IEEE Trans on Circuits and Systems for Video Technology*, 8(5):644 – 655, 1998.
- [RJ99] Brian Roark and Mark Johnson. Efficient probabilistic top-down and left-corner parsing. In *Proceedings of the 37th Annual Meeting of the Association for Computational Linguistics*, pages 421 – 428, 1999.
- [Roc71] J. J. Rocchio. Relevance feedback in information retrieval. In G. Salton, editor, *The SMART retrieval system: Experiments in automatic document processing*, pages 313 – 323. Prentice-Hall, 1971.
- [RS70] D.J. Rosenkrantz and R.E. Stearns. Properties of deterministic top-down grammars. *Information and Control*, 17:225 – 256, 1970.

- [RS97a] G. Rozenberg and A. Salomaa. *Handbook of Formal Languages – Vol. 1 Word, Language, Grammar*. Springer-Verlag, 1997.
- [RS97b] G. Rozenberg and A. Salomaa. *Handbook of Formal Languages – Vol. 2 Linear Modelling: Background and Application*. Springer-Verlag, 1997.
- [RTG98] Y. Rubner, C. Tomasi, and L. Guibas. Adaptive color-image embeddings for database navigation. In *Proceedings of the 3rd Asian Conference on Computer Vision (ACCV98)*, pages 104–111, Hong Kong, 1998.
- [SC96] John R. Smith and Shih-Fu Chang. Searching for Images and Videos on the World-Wide Web. Technical Report 459-96-25, Columbia University, August 1996.
- [Sch02] A. R. Schmidt. *Processing XML in Database Systems*. Ph.d. thesis, Universiteit van Amsterdam, Amsterdam, The Netherlands, November 2002.
- [SDWW01] A. Th. Schreiber, Barbara Dubbeldam, Jan Wielemaker, and Bob Wielinga. Ontology-Based Photo Annotation. *IEEE Intelligent Systems*, 16(3):66–74, May/June 2001.
- [SK98] Amit P. Sheth and Wolfgang Klas. *Multimedia Data Management: Using Metadata to Integrate and Apply Digital Media*. McGraw-Hill, 1998.
- [SKWW00] A. R. Schmidt, M. L. Kersten, M. A. Windhouwer, and F. Waas. Efficient Relational Storage and Retrieval of XML Documents (Extended Version). In *The World Wide Web and Databases - Selected Papers of WebDB 2000*, volume 1997 of *Lecture Notes in Computer Science (LNCS)*, © Springer-Verlag, pages 137–150, 2000.
- [Sol69] A. Solomaa. Probabilistic and weighted grammars. *Information and Control*, 15:529–544, 1969.
- [SR00] S. Santini and J. Ramesh. Integrated browsing and querying for image databases. *IEEE MultiMedia*, 7(3):26–39, July - September 2000.
- [Sta92] William Stallings. *Operating Systems*. Maxwell Macmillan, 1992.
- [Sub97] V. S. Subrahmaniam. *Principles of Multimedia Database Systems*. Morgan Kaufmann Publishers, Inc., 1997.
- [SWK99] A. Schmidt, M. Windhouwer, and M. L. Kersten. Feature grammars. In *ISAS'99 The 5th. Int'l Conference on Information Systems Analysis and Synthesis*, Orlando, Florida, 1999.
- [SWK⁺01] A. R. Schmidt, F. Waas, M. L. Kersten, D. Florescu, I. Manolescu, M. J. Carey, and R. Busse. The XML Benchmark Project. Technical Report INS-R0103, CWI, Amsterdam, The Netherlands, April 2001.
- [SWK⁺02] A. R. Schmidt, F. Waas, M. L. Kersten, M. J. Carey, I. Manolescu, and R. Busse. XMark: A Benchmark for XML Data Management. In *Proceedings of the International Conference on Very Large Data Bases (VLDB)*, pages 974–985, Hong Kong, China, August 2002.
- [SWS⁺00] Arnold W. Smeulders, Marcel Worring, Simone Santini, Amarnath Gupta, and Ramesh Jain. Content-based image retrieval at the end of the early years. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 22(12):1349–1380, December 2000.

- [Tch01] Paul A. Tchistopolskii. *PXSLServlet*. www.pault.com/pault/old/Pxsl, 2001.
- [Tom86] Masaru Tomita. *Efficient parsing for natural language*. Kluwer Academic Publishers, 1986.
- [vdBdJKO00] M.G.J. van den Brand, H.A. de Jong, P. Klint, and P.A. Olivier. Efficient annotated terms. *Journal of Software, Practice & Experience*, 30(3):259 – 291, 2000.
- [vdBKMV03] M.G.J. van den Brand, A.S. Klusener, L. Moonen, and J.J. Vinju. Generalized parsing and term rewriting: Semantics driven disambiguation. In B.R. Bryant and J. Saraiva, editors, *Proceedings of the Third Workshop on Language Description, Tools and Applications (LDTA03)*, volume 82 of *Electronic Notes in Theoretical Computer Science*, 2003.
- [vdV01] Eric van der Vlist. *Comparing XML Schema Languages*. www.xml.com/lpt/a/2001/12/12/schemacompare.html, 2001.
- [Vei03] Daniel Veillard. *The XML C library for Gnome*. xmlsoft.org, 2003.
- [Vel98] Daan Velthausz. *Cost-effective Network-based Multimedia Information Retrieval*. PhD thesis, Telematica Instituut, 1998.
- [Vis97] Eelco Visser. *Syntax Definition for Language Prototyping*. PhD thesis, University of Amsterdam, 1997.
- [vLdLW00] R. van Liere, W. de Leeuw, and F. Waas. Interactive Visualization of Multi-dimensional Feature Spaces. In *New Paradigms for Information Visualization*, pages 58–71, Washington, DC, USA, November 2000.
- [vOGC⁺01] J. van Ossenbruggen, J. Geurts, F. Cornelissen, L. Rutledge, and L. Hardman. Towards second and third generation web-based multimedia. In *Proceedings of the Tenth International World Wide Web Conference*, pages 279 – 488, Hong Kong, May 2001.
- [VS92] K. Vijay-Shanker. Using descriptions of trees in a tree adjoining grammar. *Computational Linguistics*, 18(4):481 – 518, 1992.
- [VWS01] J. Vendrig, M. Worring, and A.W.M. Smeulders. Filter image browsing: Interactive image retrieval by using database overviews. *Multimedia Tools and Applications*, 15(1):83–103, September 2001.
- [vZ02] Roelof van Zwol. *Modelling and searching web-based document collections*. PhD thesis, Centre for Telematics and Information Technology, Enschede, The Netherlands, April 2002.
- [vZAW99] R. van Zwol, P.M.G. Apers, and A.N. Wilschut. Modelling and querying semistructured data with moa. In *Proceedings of the Workshop on Semi-Structured Data and Non-Standard Data Formats (SSDNSDF 1999)*, Jerusalem, Israel, 1999.
- [W3C98] W3C. *Synchronized Multimedia Integration Language (SMIL) 1.0 Specification*. www.w3.org/TR/REC-smil/, June 1998.
- [W3C00] W3C. *Extensible Markup Language (XML)*. www.w3.org/TR/REC-xml, 2000.

- [W3C01a] W3C. *Document Object Model (DOM)*. www.w3.org/DOM/, 2001.
- [W3C01b] W3C. *Extensible Stylesheet Language (XSL)*. www.w3.org/Style/XSL/, 2001.
- [W3C01c] W3C. *Synchronized Multimedia Integration Language (SMIL 2.0)*. www.w3.org/TR/smil20/, August 2001.
- [W3C01d] W3C. *XML Path Language (XPath) 2.0*. www.w3.org/TR/xpath20/, December 2001.
- [W3C02a] W3C. *Libwww - the W3C Protocol Library*. www.w3c.org/Library/, 2002.
- [W3C02b] W3C. *XML Pointer Language*. www.w3c.org/TR/xptr/, August 2002.
- [WSK99] M. A. Windhouwer, A. R. Schmidt, and M. L. Kersten. Acoi: A System for Indexing Multimedia Objects. In *International Workshop on Information Integration and Web-based Applications & Services*, Yogyakarta, Indonesia, November 1999.
- [WSK00] M. A. Windhouwer, A. R. Schmidt, and M. L. Kersten. Acoi: A System for Indexing Multimedia Objects. In *Proceedings of the International World Wide Web Conference*, Amsterdam, The Netherlands, May 2000.
- [WSvZ⁺01] M. A. Windhouwer, A. R. Schmidt, R. van Zwol, M. Petkovic, and H. E. Blok. Flexible and Scalable Digital Library Search. Technical Report INS-R0111, CWI, Amsterdam, The Netherlands, December 2001.
- [WSvZ⁺03] M. A. Windhouwer, A. R. Schmidt, R. van Zwol, M. Petkovic, and H. E. Blok. Flexible Digital Library Search. In A. Dahanayake and W. Gerhardt, editors, *Web-enabled Systems Integration: Challenges and Practices*, pages 200–224. Idea Group Publishing, 2003.
- [WvZ03] M. A. Windhouwer and R. van Zwol. Combining Concept- with Content-based Multimedia Retrieval. In H. M. Blanken, T. Grabs, H.-J. Schek, R. Schenkel, and G. Weikum, editors, *Intelligent Search on XML Data*, volume 2818 of *Lecture Notes in Computer Science (LNCS)*, © Springer-Verlag, pages 217 – 230, 2003.
- [XFr01] XFront, www.xfront.com/ExtendingSchemas.html. *Extending XML Schemas*, 2001.
- [YW03] Jin-Yi Cai Yuan Wang, David J. DeWitt. *X-Diff - Detecting Changes in XML Documents*. www.cs.wisc.edu/~yuanwang/xdiff.html, 2003.
- [ZS90] K. Zhang and D. Shasha. Fast algorithms for unit cost editing between trees. *Journal of Algorithms*, 11(6):581 – 621, 1990.