

# Curriculum Vitae of Peter Apers

## 1 Personal Data

**Name:** Apers, Peter M.G.

**Date of birth:** April 2, 1952.

**Place of birth:** Amstelveen, the Netherlands

**Status:** married, three children.



**Office address:** Centre for Telematics and Information Technology, University of Twente,  
P.O. Box 217, 7500 AE Enschede, the Netherlands,  
phone +31 - 53 - 489 8031, FAX +31 - 53 - 489 1070,  
e-mail p.m.g.apers@utwente.nl,  
personal homepage: <http://wwwhome.cs.utwente.nl/~apers>  
homepage DB group: <http://db.cs.utwente.nl>  
homepage CTIT: <http://www.ctit.utwente.nl>  
homepage NIRICT: <http://nirict.3tu.nl>

**Home address:** Klaas de Rookstraat 14, 7558 DG Hengelo,  
phone +31 - 74 - 278 0467, FAX +31 - 74 - 278 0468,  
e-mail peter@apers.nl  
private homepage:<http://peter.apers.nl>

## 2 Education

- MSc in Mathematics, Vrije Universiteit, Amsterdam (1976).  
Specialisation Computer Science.
- Dissertation, Vrije Universiteit, Amsterdam (1982).

**Title** Query Processing and Data Allocation in Distributed Database Systems

**Advisor** Prof.dr.R.P. van de Riet

**External reviewer** Dr. P. Selinger (IBM Research Lab. San Jose, USA)

### 3 Positions held

**September 1976 - Augustus 1977** Research fellow, University of California, Santa Cruz.

**Augustus 1977 - January 1985** PhD student and assistant professor, Vrije Universiteit, Amsterdam.

**January 1984 - June 1984** Research associate, Stanford University.

**February 1985 - now** Full professor, University of Twente.

- Dean Computer Science, 1991 - 1993 and 1997 - 2000
- Executive Board, 2000 - 2002
- Scientific Director CTIT, 2002 - now

### 4 Teaching experience

Introductory and advanced courses in the area of Databases and introductory courses in the area of Artificial Intelligence. MSc advisor of many students, including students doing their thesis work in industry, and advisor of students of the TWAIO program OTIS.

### 5 Publications

For an online publication list with more details see

[http://www.informatik.uni-trier.de/~ley/db/indices/a-tree/a/Apers:Peter\\_M=\\_G\\_.html](http://www.informatik.uni-trier.de/~ley/db/indices/a-tree/a/Apers:Peter_M=_G_.html).

#### Journals

Some of the conference publications also appeared in a journal.

1. Recursive Samplesort, BIT 18, 1978, pp.125-132.
2. P.M.G. Apers, A.R. Hevner, and S.B. Yao, Optimization Algorithms for Distributed Queries, IEEE Transactions on Software Engineering, Vol. SE-9, No.1, January 1983, pp.57-68, (also appeared in: Distributed Systems, Vol II: Distributed Database Systems, pp 266-273).
3. Data Allocation in Distributed Database Systems, ACM Transactions on Database Systems, Vol 13, No 3, September 1988, pp. 263-304.
4. Schema architecture and their relationships to transaction processing in distributed database systems, Information Systems, 1991 (together with P. Scheuermann).
5. Maurice A.W. Houtsma and P.M.G. Apers, "Algebraic optimization of recursive queries", Data and Knowledge Engineering, DKE 7: 299-325 (1991)
6. P.M.G. Apers, Carel A. van den Berg, Jan Flokstra, Paul W.P.J. Grefen, Martin L. Kersten and An-nita N. Wilschut, "PRISMA/DB: A Parallel Main-Memory Relational DBMS", IEEE Transactions on Knowledge and Data Engineering, December 1992.

7. P.W.P.J. Grefen, P.M.G. Apers, "Integrity Control in Relational Database Systems P.M.G. Apers-An Overview," *Data and Knowledge Engineering*, Vol. 10, No. 2, 1993, North Holland, pp. 187–223.
8. Annita N. Wilschut and P.M.G. Apers, "Dataflow Query Execution in a Parallel Main-Memory Environment" *Distributed and Parallel Databases* 1(1): 103-128 (1993)
9. P.W.P.J. Grefen, P.M.G. Apers; A Graph-Based Approach to Action Scheduling in a Parallel Database System; *Journal on Computers and Artificial Intelligence*, Vol. 12, No. 3, 1993; Slovak Academic Press; pp. 251–278.
10. Annita N. Wilschut and Peter M. G. Apers, "Dataflow Query Execution in a Parallel, Main-memory Environment," *Distributed and Parallel Databases* 1, nr. 1, ISSN 0926–8782, 1993, pp. 103–108.
11. Mark W.W. Vermeer, Peter M.G. Apers, "Query modification on complex objects in database federations", *Int. J. of Cooperative Information Systems*, Vol 6, Nos 3 & 4 (1997), pp 219 - 240.
12. Paul Grefen, Jochem Vonk, and Peter Apers, Global transaction support for workflow management systems: from formal specifications to practical implementations. *VLDB Journal* 10(4), pp. 316-333.
13. Henk Ernst Blok, Sunil Choenni, Henk M. Blanken, Peter M.G. Apers, A selectivity model for fragmented relations: Applied in information retrieval, *IEEE Trans. on Knowledge and Data Engineering*, May 2004, vol. 16, no. 5, pp. 635-639, ISSN 1041-4347

## Conferences and workshops

Databases is a field with major conferences of which the acceptance rate is often lower than the average journal. See for more detail: <http://wwwhome.cs.utwente.nl/~apers/rates.html>.

1. Data Allocation and Distributed Query Processing, Proc. ACM Pacific 80, San Francisco, November 1980, pp.48-54.
2. Redundant Allocation of Relations in a Communication Network, Proc. Fifth Berkeley Workshop on Distributed Data Management and Computer Networks, San Francisco, February 1981, pp.245-258.
3. Centralized or Decentralized Data Allocation, Proc 2nd Seminar on Distributed Data Sharing Systems, June 1981, pp.101-116.
4. P.M.G. Apers and Gio Wiederhold, An Expert Database Systems in a Loosely Coupled Environment, Proc. First International Workshop on Expert Database Systems Kiawah Island, South Carolina, October 1984, pp. 611-617,
5. P.M.G. Apers and Gio Wiederhold, Transaction Handling in a Loosely Coupled Environment, Proc. 8th ACM ICS, Florence, eds Bucci en Valle, March 1985, pp. 27-36.
6. P.M.G. Apers and Gio Wiederhold, Transaction Handling in a Loosely Coupled Environment, Proc. NGI/SION Symposium 1985, Amsterdam, April 1985, pp. 476-484, (extended abstract).
7. Processing Recursive Queries in Relational Algebra, together with M.A.W. Houtsma and F. Brandse, Proc. IFIP-TC2 Working Conf. "Knowledge and Data", Albufeira, Portugal, November 1986.

8. Extending a Relational Interface with Recursion, Proc. 6th Advanced Database Symp., Tokio, Japan, 1986, pp. 159-166, (together with M.A.W. Houtsma and F. Brandse).
9. A Distributed, Main-Memory Database Machine, Proc. 5th Int. Workshop on Database Machines, Japan, October 1987, pp. 496-511, (together with M.L. Kersten, M.A.W. Houtsma, H.J.A. van Kuijk, and R.L.W. van de Weg).
10. PRISMA Database Machine: A Distributed Main-Memory Approach, Proc. EDBT '88, Venice, 1988, pp. 590-593, Lecture Notes Computer Science #303, Springer Verlag.
11. Processing Regular Recursive Queries, Proc. CSN 1988, Nov 1988, pp. 495-519, (together with M.A.W. Houtsma).
12. Data and Knowledge Model: a Proposal, Proc. Workshop on Database Programming Languages, sept 1987, 20 pages, Roscoff, Frankrijk, (together with M.A.W. Houtsma; also appeared in: Advances in Database Programming Languages, ACM Press and Adison Wesley, 1990),
13. Implementing PRISMA/DB in an OOP, Proc. IWDM, June 1989, pp.? (together with A.N. Wilschut, P.W.P.J. Grefen and M.L. Kersten).
14. A Semantic Data Model for Integration of Data and Knowledge, Proc. Int. Conf. on Computing and Information, North Holland, Sept. 1989, (together with M.A.W. Houtsma).
15. Semantic Query Optimization in Distributed Databases: a Knowledge-based Approach, Proc. Workshop on Database Query Processing, Portland, Oregon, May 1989, pp. 53-58, (together with H.J.A. van Kuijk).
16. Pipelining in Query Execution, Proc. Parbase-90, Florida, March 1990, pp. 562, (together with A. Wilschut).
17. Multilevel Query Optimization in Distributed Databases, Proc. Int. Conf on Computation and Information, 6 pages, Niagra Falls, May 1990, (together with H.J.A. van Kuijk and F.H.E. Pijpers)
18. Parallel Handling of Integrity Constraints on Fragmented Relations, Proc. Second Int. Symp. on Databases in Parallel and Distributed Systems, Ireland, July 1990, pp. ? (together with P. Grefen).
19. Distributed Transitive Closure Computations: The Disconnection Set Approach, Proc. 16th VLDB Conference, Brisbane, Australia, August 1990 (together with M.A.W. Houtsma and S. Ceri).
20. The PRISMA Experiment, Proc. Workshop on Parallel Database Systems, Noordwijk, the Netherlands, Springer Verlag, September 1990 (together with L.O. Hertzberger and B. Hulshof).
21. Parallel Handling of Integrity Constraints, Proc. Workshop on Parallel Database Systems, Noordwijk, the Netherlands, Springer Verlag, September 1990 (together with P.W.P.J. Grefen and J. Flokstra).
22. Parallel Query Execution in PRISMA/DB, Proc. Workshop on Parallel Database Systems, Noordwijk, the Netherlands, Springer Verlag, September 1990 (together with A.N. Wilschut and J. Flokstra).
23. ADL-Algebraic Database Language, Proc CSN, the Netherlands, November 1990 (together with H.J. Steenhagen).

24. Complex transitive closure queries on a fragmented graph, Proc. 3rd Int. Conf. on Database Theory, Paris, France, December 1990 (together with M.A.W. Houtsma and S. Ceri).
25. Paul W.P.J. Grefen and P.M.G. Apers "Integrity constraint enforcement through transaction modification" in Proc. 2nd Int. Conf. on Database and Expert System Applications DEXA'91, Berlin, Germany, August 1991
26. Maurice A.W. Houtsma, and P.M.G. Apers "Data and Knowledge model: A proposal" in Proc. of the Workshop on Database Programming Languages, Roscoff, France, published as Advances in Database Programming Languages, F. Bancilhon, P. Buneman (Eds.), ACM Press and Addison Wesley, 1991, pp. 387-402.
27. Annita N. Wilschut and P.M.G. Apers, "Dataflow query execution in a parallel main-memory environment" in Proc. 1st Int. Conf. Parallel and Distributed Information Systems, Miami Beach, FL., Dec. 1991.
28. Paul W.P.J. Grefen and P.M.G. Apers, "Dynamic Action Scheduling in a Parallel Database System" in Proc. 1992 European Conf. on Parallel Architectures and Languages, Paris, France, June 1992.
29. Paul W.P.J. Grefen, P.M.G. Apers, "Performance Evaluation of Integrity Control in a Parallel Main-Memory Database System", Proc. 3rd International Conf. on Database and Expert System Applications, Valencia, Spain, September 1992
30. Annita N. Wilschut, Jan Flokstra and P.M.G. Apers, "Parallelism in a Main-Memory System: The Performance of PRISMA/DB" in Proc. of the 18th Int. Conf. on Very Large Data Bases, Vancouver, Canada, August 23-27, 1992.
31. Maurice A.W. Houtsma, P.M.G. Apers and Gideon L.V. Schipper, "Data fragmentation for parallel transitive closure strategies," in 9th Int. Conf. on Data Engineering, April 19-23, 1993, Vienna, Austria.
32. H.M. Veenhof, M.A.W. Houtsma, P.M.G. Apers, "Query optimization for GIS using filters," *Workshop on Advances in Geographic Information Systems*, November 5, 1993, Washington D.C.
33. P.W.P.J. Grefen, R.A. de By and P.M.G. Apers, "Integrity Control in Advanced Database Systems." IEEE Bulletin on Data Engineering, June 1994, pp. 9-13.
34. H.J. Steenhagen, P.M.G. Apers, and H.M. Blanken, "Optimization of Nested Queries in a Complex Object Model", Proc. EDBT Conf, Cambridge, UK, March 1994, Springer-Verlag, LNCS # 779, pp. 337-350.
35. H.J. Steenhagen, P.M.G. Apers, H.M. Blanken, and R.A. de By, "From Nested-Loop to Join Queries in OODB", Proc. VLDB, Chile, Sept. 1994.
36. P.M.G. Apers, "Identifying Internet-related database research", Proc. East-West Database Workshop, Klagenfurt, Austria, Sept 25-27, 1994, Springer-Verlag, Workshops in Computing, pp. 183-193.
37. Mark W.W. Vermeer and P.M.G. Apers, "Object-oriented views of relational databases incorporating behaviour", Conf. DASFAA'95 Database Support For Advanced Applications, Singapore, April 10-15, 1995.

38. Annita N. Wilschut, Jan Flokstra and P.M.G. Apers. "Parallel evaluation of multi-join queries", ACM SIGMOD International Conference on Management of Data in San Jose, CA, USA, May 23-25, 1995.
39. Hein M. Veenhof, P.M.G. Apers, Maurice A.W. Houtsma, "Optimization of Spatial Joins Using Filters", Thirteenth British National Conference on Databases (BNCOD13), Manchester, U.K. July 12-14, 1995.
40. Mark W.W. Vermeer and P.M.G. Apers, "Reverse engineering of relational database applications". To appear in: Proc. OO-ER'95, Fourteenth Int. Conf. on Object-Oriented and Entity-Relationship Modelling, Gold Coast, Qld Australia, December 12-15 1995, Springer Verlag.
41. M. van Keulen, J. Skowronek, P.M.G. Apers, H. Balsters, H.M. Blanken, R.A. de By, J. Flokstra, "A Framework for Representation, Validation and Implementation of Database Application Semantics", Sixth IFIP TC-2 Working Conference on Data Semantics, 1995.
42. Mark W.W. Vermeer, P.M.G. Apers, "The role of integrity constraints in database interoperation" in Proc. 22nd. Int. Conf. on Very Large Data Bases (VLDB'96), Bombay, India, September 1996.
43. Mark W.W. Vermeer, P.M.G. Apers, "On the applicability of schema integration techniques to database interoperation" in Proc. 15th. Int. Conf. on Conceptual Modelling (ER'96), Cottbus, Germany, October 1996.
44. A.N. Wilschut, J. Flokstra, and P.M.G. Apers, Parallel Evaluation of Multi-join Queries (extended abstract), Proc. Third Int. ACPC Conf, Klagenfurt, Austria, Sept 1996, pp. 90-97.
45. Mark W.W. Vermeer, Peter M.G. Apers, "Behaviour specification in database interoperation" in Proc. 9th. Int. Conf. on Advanced Information Systems Engineering (CAiSE'97), Barcelona, Spain, June 1997, Springer Verlag LNCS.
46. Mark W.W. Vermeer, Peter M.G. Apers, "Query modification in object-oriented database federations" in Proc. 2nd. Int. Conf. on Cooperative Information Systems (CoopIS'97), Charleston, SC, USA, June 1997, IEEE CS Press.
47. Frans J. Faase, Susan J. Even, Rolf A. de By, Peter Apers, "Integrating organisational and transactional aspects of cooperative activities" in 6th conference on Database Programming Languages, Estes Park, CO, USA, August 1997.
48. P. Grefen, J. Vonk, E. Boertjes, P. Apers; "Two-Layer Transaction Management for Workflow Management Applications"; in Proc. 8th Int. Conf. on Database and Expert System Applications (DEXA); Toulouse, France, 1997; pp. 430-439.
49. D.K.C. Chan, J. Vonk, G. Sanchez, P.W.P.J. Grefen, P.M.G. Apers; A Specification Language for the WIDE Workflow Model; Proceedings 1998 ACM Symposium on Applied Computing; Atlanta, USA, 1998; pp. 197-199.
50. Frans J. Faase, Susan J. Even, Rolf A. de By, Peter Apers, "Integrating organisational and transactional aspects of cooperative activities" in Proc. 6th Workshop on Database Programming Languages, 1998.

51. Erik M. Boertjes, Paul W.P.J. Grefen, Jochem Vonk, and Peter M.G. Apers, "An Architecture for Nested Transaction Support on Standard Database Systems," *Procs. of the 9th International Conference on Database and Expert Systems Applications (DEXA)*, Vienna, Austria, 1998. (Lecture Notes in Computer Science), pp. 448-459.
52. Mark W.W. Vermeer and Peter M.G. Apers, "Specifying global behaviour in database federations", *Information Systems*, Vol 23/3-4, June 1998, pp. 217-233.
53. Peter Apers and Martin Kersten, Content-based retrieval in multimedia databases based on feature models, invited paper AMCP'98 Conference, Japan, November 1998, Springer Lecture Notes in Computer Science, Ed. Shojiro Nishio and Fumio Kishino, pp. 119-130.
54. J. Vonk, P. Grefen, E. Boertjes, P. Apers, "Distributed Global Transaction Support for Workflow Management Applications," *Proc. DEXA '99*, Florence, pp. 942-951.
55. A.P. de Vries, M.G.L.M. van Doorn, H.M. Blanken, and P.M.G. Apers, "The Mirror MMDDBMS architecture." In *Proceedings of 25th International Conference on Very Large Databases (VLDB '99)*, Edinburgh, Scotland, UK, September 1999. Technical demo.
56. Paul Grefen, Jochem Vonk, Erik Boertjes, and Peter Apers, *Semantics and Architecture of Global Transaction Support in Workflow Environments*, Proc CoopIS '99, Edinburgh, pp. 348-359.
57. Kecheng Liu, Peter Apers, Satya Chattopadhyay, Albert Cheng, Mark Fox, Tom Greene, Mark Klein, and Ronald Stamper, "Enterprise Information Systems: issues, challenges and viewpoints". In Joaquim Filip (ed), *Enterprise Information Systems*, to be published by Kluwer Academic Publishers (2000).
58. Arjen de Vries, Menzo Windhouwer, Peter M.G. Apers, and Martin Kersten, *Information Access in Multimedia Databases based on Feature Models*, NGC, 2000.
59. Roelof van Zwol and Peter Apers, Modeling the webspace of an intranet, *Proc. Int. Conf. on Web Information Systems Engineering 2000*, June 2000, pp. 250-259.
60. Roelof van Zwol and Peter Apers, The Webspace Method: On the Integration of Database Technology with Multimedia Retrieval, *Proc. CIKM 2000*.
61. Henk Ernst Blok, Sunil Choenni, Djoerd Hiemstra, Franciska de Jong, Henk Blanken, and Peter Apers, Predicting the cost-quality trade-off for information retrieval queries: Facilitating database design and query optimization, *Proc 10th ACM Int. Conf on Information and Knowledge Management (CIKM01)*, Atlanta, 2001, ACM Press, pp. 207-214.
62. Henk Ernst Blok, Arjan de Vries, Henk Blanken, and Peter Apers, Experiences with IR TOP optimization in a main memory DBMS: Applying "the database approach" in new domains, *Proc. 18th BNCOD*, Chilton, UK, 2001, B.J. Read, Ed. vol. 2097 of LNCS, pp. 126-151.
63. Henk Ernst Blok, Menzo Windhouwer, Roelof van Zwol, Milan Petkovic Peter Apers, Martin Kersten, Willem and Jonker, Flexible and scalable digital library search. In *proceedings of the twenty-seventh International Conference on Very Large Databases (VLDB2001)*, pages 705 - 706, Roma, Italy, Technical demo.

64. Petkovic, M., Windhouwer, M., van Zwol, R., Blok, H., Apers, P., Kersten, M., and Jonker, W. (2002). 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. IEEE Computer Society. Technical demo
65. Roelof van Zwol, Maarten Fokkinga, Vincent Jeronimus, and Peter Apers, Data exchange over web-based applications. In proceedings of the second International Workshop on Data Integration on the Web (DIWeb'02), Toronto, Canada 2002.
66. Roelof van Zwol and Peter Apers, Retrieval performance experiment with the webspace method. In proceedings of the British National Conference On Databases (BNCOD), Sheffield, UK, 2002.
67. Roelof van Zwol and Peter Apers, Information Modelling for Internet Applications, chapter The Webspace Method. Internet based technologies. IDEA group publishing, Hershey, Pennsylvania, USA. To appear.
68. Roelof van Zwol and Peter Apers, Complex query formulation with the webspace method. In proceedings of the sixth World Multi Conference on Systematics, Cybernetics, and Informatics, Orlando, Florida, USA, 2002.
69. V. Mihajlovic, D. Hiemstra, P.M.G. Apers, On Region Algebras, Databases and Information Retrieval, In: Arjen P. de Vries, Proceedings of the Fourth Dutch-Belgian Information Retrieval Workshop (DIR 2003), December 2003, Institute for Logic, Language and Computation, pp. 63-69
70. V. Mihajlovic, D. Hiemstra, P.M.G. Apers, CIRQuL: Complex Information Retrieval Query Language, In: Proceedings of the VLDB PhD Workshop, September 2003,
71. L. Feng, P.M.G. Apers, W. Jonker, Towards Context-Aware Data Management for Ambient Intelligence, In: Proc. of the 15th Intl. Conf. on Database and Expert Systems Applications, 2004, vol. 3180, LNCS, Springer, Zaragoza, Spain, ISBN 3-540-22936-1
72. V. Mihajlovic, D. Hiemstra, H.E. Blok, P.M.G. Apers, An XML-IR-DB-Sandwich: Is it Better with an Algebra in Between?, In: Proceedings of the SIGIR workshop on Information Retrieval and Databases (WIRD'04), July 2004, 8 pp.
73. V. Mihajlovic, H.E. Blok, D. Hiemstra, P.M.G. Apers, Score Region Algebra: Building a Transparent XML-IR Database, In: Abdur Chowdhury, Norbert Fuhr, Marc Ronthaler, Hans-Jrg Schek, Wilfried Teiken, Proceedings of the 14th ACM Conference on Information and Knowledge Management (CIKM '05), October 2005, ACM Press, ISBN 1-59593-140-6,, pp. 12-19
74. A.H. van Bunningen, Ling Feng, Peter M.G. Apers, Context for Ubiquitous Data Management, In: International Workshop on Ubiquitous Data Management (UDM2005), Tokyo, Japan, April 2005, IEEE Computer Society, ISBN 0-7695-2411-7, pp. 17-24
75. A.H. van Bunningen, Ling Feng, Peter M.G. Apers, A context-aware preference model for database querying in an Ambient Intelligent environment, In: Proceedings of the 17th International Conference on Database and Expert Systems Applications (DEXA), 2006
76. H.J.W. van Heerde, N. Ancaux, Ling Feng, P.M.G. Apers, Balancing smartness and privacy for the Ambient Intelligence, In: P.J.M. Havinga, N. Meratnia, M Wegdam, M Lijding, Smart Sensing and Context, October 2006, vol. 4272, Lecture Notes in Computer Science, Springer, Berlin, ISBN 3-540-47842-6, ISSN 0302-9743, pp. 255-258

77. A.H. van Bunningen, Ling Feng, Peter M.G. Apers, Modeling Uncertain Context Information via Event Probabilities, In: A. de Keijzer, M. van Keulen, Proceedings of the 2nd Twente Data Management Workshop (TDM'06) on Uncertainty in Databases, June 2006, CTIT Workshop Series, Centre for Telematics and Information Technology, ISSN 1574-0846, pp. 25-32

## Books or contributions to books

1. Peter M.G. Apers, Query Processing and Data Allocation in Distributed Database Systems, MC-tract 156, CWI, Amsterdam, ISBN 90 6196 251 X, 1983.
2. Peter M.G. Apers, Geavanceerde informatiesystemen, Informatie, 29, nr. 1, jan. 1987, pp. 40-50 (inaugural speech).
3. P.M.G. Apers and G. Wiederhold, VLDB Proceedings, Amsterdam, 1989.
4. P.M.G. Apers, M. Bouzeghoub, and G. Gardarin, Advances in Database Technology – EDBT'96, Avignon, France, March 1996, LNCS Springer.
5. Search support in a distributed, hypermedia information system, in Multimedia databases in perspective, Springer, ISBN 3-540-76109-8.
6. P.M.G. Apers, H.M. Blanken, and M.A.W. Houtsma (eds), Multimedia Databases in Perspective, Springer, ISBN 3-540-76109-8.
7. Peter M. G. Apers, Paolo Atzeni, Stefano Ceri, Stefano Paraboschi, Kotagiri Ramamohanarao, Richard T. Snodgrass (Eds.): VLDB 2001, Proceedings of 27th International Conference on Very Large Data Bases, September 11-14, 2001, Roma, Italy. Morgan Kaufmann 2001, ISBN 1-55860-804-4

## 6 Keynote speeches

1. Understanding large scale parallelism for data management, keynote speech, Conf. PDIS'94, Austin, Texas, Sept. 29-30, 1994.
2. Database support for the Web, BDA'95, August '95, Nancy, extended abstract, pp. 405-410, keynote speech.
3. Understanding large scale parallelism for data management, keynote speech, ACPC, Klagenfurt, Austria, September 23-25, 1996.
4. Content-based retrieval in multimedia databases based on feature models, AMCP Conference, Japan, November 1998 (together with M.L. Kersten).
5. Database Technology and its Applications, keynote speech ICEIS, Lisbon, March 27-30, 1999.

## 7 Tutorials

1. Parallel query processing in relational DBMSs, tutorial (together with A. Wilschut), ACPC, Klagenfurt, Austria, September 23-25, 1996.

2. Web-based Information systems, EDBT summerschool, September 1997.
3. Web-based Information systems, Berlin, October 1998.

## 8 Presentations and Publications

More than 100 presentations at (inter)national conferences and workshops, and invited talks at seminars at various universities.

- Dies Natalis presentation: Being Smart in Smart Surroundings, November 2003, <http://www.ctit.utwente.nl/dies/>

## 9 Contract research

Below you will find a list of major, externally funded research project in the database group at the University of Twente.

### PRISMA

**Goal** design and implementation of a main-memory database system on top of a multi-processor system.

**Cooperation** Philips Research Lab Eindhoven, Univ. of Amsterdam, Center for Mathematics and Computer Science and the Univ. of Twente.

**Sponsor, period, UT participation** SPIN (National Research Fund, 1985–1989, 3 f.t.e.

### TROPICS

**Goal** Design and implementation of a database system for multi-media documents.

**Cooperation** Database Task Force: Philips Research Lab Eindhoven, Center for Mathematics and Computer Science, Olivetti, Thomson, Info Sys and Univ. of Twente.

**Sponsor, period, UT participation** ESPRIT 2, 1989–1990, 2 f.t.e.

### IDOMENEUS

**Goal** combining efforts in the area of databases, informationa retrieval, and multimedia

**Cooperation** many European universities

**Sponsor, period** Network of Excellence ESPRIT 3, 1991–1996

### IMPRESS

**Goal** Design and implementation of a information system for technical applications.

**Cooperation** Alcatel ISR, Alcatel Alsthom Recherche, INFOSYS, Bureau van Dijk, Iberdrola, and Univ. of Twente.

**Sponsor, period, UT participation** ESPRIT 3, 1992–1995, 2.5 f.t.e.

## **TransCoop P8012**

**Goal** Advanced, cooperative transaction models for database systems, powerful specification language.

**Cooperation** GMD Darmstadt, VTT Helsinki, and Univ. of Twente.

**Sponsor, period, UT participation** ESPRIT 3 (BRA), 1994–1997, 2.5 f.t.e.

## **MAGNUM**

**Goal** OO database support for GIS

**Cooperation** CWI, Univ of Amsterdam, TU Eindhoven, and Univ. of Twente

**Sponsor, period, UT participation** SION, 1994–1998, 1 f.t.e.

## **WIDE**

**Goal** Database support for workflow management

**Cooperation** SEMA, Politecnico di Milano, ING Bank, Hospital General de Manresa, and Univ. of Twente.

**Sponsor, period, UT participation** ESPRIT 4, 1995–1998, 2.5 f.t.e.

## **QUANTUM**

**Goal** Object-oriented environment for application development

**Cooperation** Compuware and Univ. of Twente.

**Sponsor, period, UT participation** Senter (National research fund), 1996–1999, 2 f.t.e.

## **IMPACT**

**Goal** Parallel database support for financial applications

**Cooperation** ING-Bank, CWI, TU Delft, UvA, and Univ. of Twente.

**Sponsor, period, UT participation** HPCN (National research fund), 1996–1999, 1 f.t.e.

## **ORDE**

**Goal** Gaining practical experience with object-oriented formal specification language

**Cooperation** KPN Research and Univ. of Twente.

**Sponsor, period** KPN Research, 1996–1997

## **DMW**

**Goal** Multimedia retrieval

**Cooperation** CWI, Telematics Institute, KPN Research, Sylogic, and University of Twente

**Sponsor, period, UT participation** Telematics Institute, 1998–2002, 2.5 f.t.e.

## **Summer**

**Goal** Secure multimedia retrieval system

**Cooperation** CWI, KPN Research, V2 Lab., Ministry of Transport, Public Works and Water Management

**Sponsor, period, UT participation** Senter and KPN Research, 2000–2002, 2 f.t.e.

## **CIRQUID**

**Goal** seamless integration of relevance-oriented querying of semi-structured data (XML) with traditional querying

**Cooperation** CWI

**Sponsor, period, UT participation** NWO, 2002–2006, 2 f.t.e.

## **MultimediaN**

**Goal** XML database support for multimedia applications

**Cooperation** several Dutch universities and companies, including Philips, Unilever, IBM

**Sponsor, period, UT participation** Bsik, 2004–2008, 4 f.t.e.

## **Bricks**

**Goal** Organic databases

**Cooperation** CWI and Univ Utrecht

**Sponsor, period, UT participation** Bsik, 2005–2009, 0.75 f.t.e

## **Context-Aware Data Management**

**Goal** Data management in sensor networks

**Cooperation** MultimediaN and Smart Surroundings, both Bsik projects

**Sponsor, period, UT participation** NWO, VIDI for Ling Feng, 2005–2008, 3.5 f.t.e.

## **NICE: Natural Interaction in Computer-Mediated Environments**

**Goal** Improving human interaction

**Cooperation** Various groups within CTIT

**Sponsor, period, UT participation** CTIT, 2005-2009, 1 f.t.e.

## **OPAQUE: Optimization of Pathfinder Queries**

**Goal** Optimization of XQUERY queries

**Cooperation** UT cooperates with Konstanz Univ.

**Sponsor, period, UT participation** NWO, 2006-2010, 1 f.t.e.

## **EffoRT: Effective Focused Retrieved Techniques**

**Goal** Representing Web information to improve search

**Cooperation** Univ of Amsterdam

**Sponsor, period, UT participation** NWO, 2006-2010, 1 f.t.e.

## **10 PhD-Theses**

### **Advisor**

- Program generator systems for business-oriented programs, F.A. van Hoeve, September 29, 1989.
- Data and Knowledge Base Management Systems: Data Model and Query Processing, M.A.W. Houtsma, November 17, 1989.
- On Complex Objects, A.P.J.M. Siebes, March 9, 1990.
- Semantic Query Optimization in Distributed Databases, H.J.A. van Kuijk, Januari 17, 1991.
- Rolf A. de By, The Integration of Specification Aspects in Database Design, October 1991. ISBN 90-9004461-2.
- Paul W.P.J. Grefen, Integrity Control in Parallel Database Systems, October 1992. ISBN 90-9005395-6.
- Annita N. Wilschut, Parallel Query Execution in a Main-Memory Database System, April 1993. ISBN 90-9005857-5.
- Wouter B. Teeuw, Parallel Management of Complex Objects, September 1993. ISBN 90-9006314-5.
- Carel A. van den Berg, Dynamic Query Processing in a Parallel Object-oriented Database System, February 1994. ISBN 90-6196-434-2.
- Rene (C.) M.R. Bal, A deductive and typed object-oriented language, October 1994. ISBN 90-9007532-1.

- Sunil Choenni, On the Automation of Physical Database Design, May 1995. ISBN 90-9008135-6.
- Hennie Steenhagen, Optimization of Object Query Languages, Oct. 1995. ISBN 90-9008745-1
- Marli Vogels, Architecture and Construction Principles for Computational Fluid Dynamics Software for Engineering in Industry, February 1997, together with prof.dr.ir. P.J. Zandbergen, Applied Mathematics Dept.
- Mark Vermeer, Semantic Interoperability for Legacy Databases, Oct 3, 1997.
- Hein Veenhof, Processing Multi-Way Spatial Joins. Oct 9, 1997
- Maurice van Keulen, Formal operation definition in object-oriented databases, Nov 7, 1997.
- Jacek Skowronek. Distributed Optimization of Nested Queries, December 4, 1997.
- Daan Velthausz, Cost-Effective Network-Based Multimedia Information Retrieval, November 20, 1998, Isbn 90-75176-16-3
- David Spelt, Verification Support For Object Database Design, September 10, 1999, Isbn 90-365-1355-3
- Arjen De Vries, Content And Multimedia Database Management Systems, December 17, 1999, Isbn 90-365-1388-X
- Gerrit Hiddink, Educational Multimedia Databases, 2001.
- Henk Ernst Blok, Database Optimization Aspects for Information Retrieval, 2002.
- Rick van Rein, Extending model checking to object process validation, 2002
- Roelof van Zwol, Modelling and searching web-based document collections, 2002.
- J.L. Campos dos Santos, A biodiversity information system in an open data-metadatabase architecture, ISBN 90-6164-214-0, 2003
- Nirvana Meratnia, Towards Database Support for Moving Object Data, ISBN 90-365-2152-1, 2005
- Joeri van Ruth, Flattening Queries over Nested Data Types, ISBN 90-9020723-6, 2006
- Vojkan Mihajlovic, Score Region Algebra: A flexible framework for structured information retrieval, ISBN 90-365-2428-8, 2006

### **External reviewer**

- P. Verstraete, Univ. of Gent (Belgium), March 14, 1986.
- O. Risnes, Univ. of Trondheim (Norway), March 3, 1988.
- I. De Diana, Dept of Education, Univ. of Twente, December 15, 1988.
- H. J. Pels, TU Eindhoven, October 17, 1988.
- E. Spoor, Vrije Univ., November 14, 1989.

- J.-M. Thevenin and Ph. Pucheral, Paris (France), December 20, 1989.
- G.-J. Houben, TU Eindhoven of Tech., December 11, 1990.
- Sun, Univ of Amsterdam, March 3, 1992
- X. Liao, Dept of Mechanical Eng, Univ of Twente, October 1, 1992
- A. Visscher, Dept of Education, Univ. of Twente, January 22, 1993
- Ling Liu, KUB Tilburg, January 29, 1993
- G. Ramackers, RU Leiden, March 30, 1994
- L. vd Voort, Univ Amsterdam, September 1, 1995
- P. Rambags, TU Eindhoven, September 20, 1995
- F. Machuca, Univ Versailles (France), November 29, 1995
- M. Andries, RU Leiden, February 14, 1996
- Liu Lu, KUB Tilburg, February 22, 1996
- Seljee, KUB Tilburg, June 20, 1997
- J. van den Akker, Univ of Amsterdam, March 30, 1998.
- O. Groevlen, Univ of Trondheim (Norway), September 10, 1998.
- Bodlaender, TU Eindhoven, May 11, 1999.
- Torsten Grost, Univ of Konstanz (Germany), September 9, 1999.
- Saadi Mesgari, ITC, October 10, 2000
- Florian Waas, Univ. of Amsterdam, November 3, 2000.
- Paul Jones, Univ of Nijmegen, November 7, 2000.
- Peter Boncz, May 31, 2002.
- Albrecht Schmidt November 7, 2002.

## 11 Refereeing

### Editorial Board of Journals

- coordinating Editor-in-Chief of VLDB Journal, Springer (until 2001)
- editor of Distributed and Parallel Databases, Kluwer
- editor of Data and Knowledge Engineering, North Holland

## **Program committees and Journals**

- European program chair VLDB Amsterdam, 1989
- program chair of EDBT'96, France
- European program chair VLDB Rome, 2001
- program committee member of VLDB, PDIS, Parbase, IC Data Engineering, RIDE, EDBT, SIGMOD, CIKM, IFIP Wg2.6 DS, ICEIS.
- reviewer for ACM Transactions on Database Systems, IEEE Computer, IEEE Transactions on Software Engineering, IEEE Expert, IEEE Knowledge and Data Engineering, Data and Knowledge Engineering (North Holland), VLDB Journal (Springer), Distributed and Parallel Databases (Kluwer).

## **Project reviewing**

- reviewer of ESPRIT project IDEA
- reviewer of ESPRIT project RASDAMAN
- reviewer of international project proposals (ESPRIT LTR, NSF, EIT, NATO Grants)
- reviewer of national project proposals (NWO, SION, STW, and SPIN)

# **12 Organizational activities**

## **Organisation of major scientific events**

- Second International Seminar on Distributed Data Sharing Systems, Amsterdam, June 1981.
- NGI/SION-symposium, March 1983.
- 15th Very Large Data Base Conference in Amsterdam, 1989 (member executive committee, European PC chair)
- EDBT'96, Avignon, France (PC chair)
- ICDE'97, Birmingham, UK (vice-chair PC)
- ICDCS'98, Amsterdam, (vice-chair PC)
- VLDB 2001, Rome (European PC chair)

## **Administrative activities (major activities are highlighted)**

### **International**

- member of executive board of IDOMENEUS (Network of Excellence)
- member of Steering Committee of the EDBT Conference

- **member of the Endowment of the VLDB conference, publication chair**
- chairman and member of many (inter)national selection committees for full professorships
- advisor of international promotion committees for full professors

## National

### *ICT related: NWO*

- **chairman of the Dutch computer science foundation SION** (Stichting Informatica Onderzoek Nederland) of NWO (comparable to the computer science section of NSF), 1995–2000
- vice-chairman SION (Sept 1988 – Dec 1991),
- **chairman of the scientific board of SION** (May 1993 - May 1994)
- chairman of strategy committee of SION (resulting in NOAG-i)
- co-founder and member of Platform Informaticaonderzoek
- **member of the board of NWO Exact Sciences**, 2004-2005. Nederland (December 2000)
- member of the board of CWI, Center for Mathematics and Computer Science in Amsterdam (1995–2002)

### *ICT related: Boards*

- member Program Board Telematics Institute, as of 2002.
- **member of the ICT Taskforce, ICT Forum, and Advisory Board ICTRegie**, 1999 - now.
- member of the Board of Advisors of Electronic Platform Netherlands (EPN)
- member of the External Board of the Embedded Systems Institute, as of 2002.
- vice-chairman of the Steering committee ICT and Research of SURF, 2000-2003.
- member of VNO-NCW committee on ICT themes for ICES/KIS (3)
- member or chairman of steering committees of a number of Bsik projects.
- member of Steering committee of AIDA (knowledge centre of TNO).
- chairman Steering Board NVSO, as of 2006.
- member scientific board IvI, Amsterdam, as of 2006.
- member External Board Sensor Universe, as of 2006.
- member Academic Council Point-One, as of 2007.

### *ICT related: Remaining*

- convenor of the national database meetings (until 2000)
- organizer of national PhD programs for Research School SIKS

- member of Informaticakamer, VSNU (1991–1993, 1997-2000)

*General: Research Schools, Institutes*

- member of board of Dutch Polymer Institute (2000-2002)
- member of board of National Institute for Metal Research (2000-2002)
- member of External Board Beta, as of 2004.
- member of External Board TRAIL, as of 2006.
- **member ECOS subcommittee Technical Sciences**, as of 2003.

*General: Research and Innovation*

- **chairman of the board of Technology Foundation STW**, as of March 2005.
- member of Bestuursraad STW, 2000-2004.
- **member of the board of PPM Oost**, as of 2002.
- **member of the Steering committee Research of VSNU**, 2000 - 2002.
- member of LIFT committee of TNO, as of 2006.
- member of the national platform of university patent policy, 2000 - 2003.

*General: Remaining*

- member of Koninklijke Hollandsche Maatschappij der Wetenschappen, as of 1995.
- **member of Netherlands Academy of Technology and Innovation** as of 2005.
- member of evaluation committee of Vernieuwingsimpuls (2003)

**University of Twente**

*Management*

- **dean of the computer science department** (Sept 91 - Sept 93, Sept 97 - Febr 2000)
- **member of the Executive Board of the Universty of Twente, responsible for research and valorization**, Febr 2000 - Sept 2002
- **scientific director of Centre for Telematics and Information Technology**, UT, as of Sept 2002.
- scientific director of Netherlands Institute for Research on ICT (NIRICT), 3TU, as of 2006.

*Committees*

- member of the executive board of CTIT, Center for Telematics and Information Technology, Univ. of Twente (until August 1997)
- chairman of wireless campus steering committee

- member of committee on a new management structure for the UT (1995)
- member of TUTOR committee (1996)
- member of several HRM committees
- chairman of implementation committee of COWI (later Dinkel institute)

## **13 Miscellaneous**

### **Grants**

Among others:

- ZWO grant for a 10 months visit to the University of California in Santa Cruz, 1976 (salary and travel expenses).
- ZWO travel grant to visit Stanford University, Jan-June, 1984 (travel expenses).

### **Memberships of CS organizations**

Among others:

- research schools SIKS.
- IFIP Working group 2.6 (Databases) until 2000.
- Association for Computing Machinery.
- IEEE Computer Society.

### **Decoration**

Royal Decoration: Officier in de Orde van Oranje-Nassau (2003).