Curriculum Vitae

1. Full Name: Ernst Wilhelm Mayr

2. Date of Birth: May 18, 1950 in Fürstenfeldbruck (Bavaria, Germany)

3. Citizenship: Federal Republic of Germany

4. Marital Status: Married, two children

5. Address:

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6. Education:

1956–1960	Volksschule (Public School) in Alling, Bavaria
1960–1969	Math.-nat. Gymnasium (High School), Fürstenfeldbruck
June 28, 1969	Abitur, summa cum laude
Nov. 1971–Oct. 1975	Student of Mathematics and Computer Science at the Technical University of Munich
Sep./Oct. 1974	Student at the Summer University at Lyon, France
Oct. 31, 1975	Diploma (corresponds to Master of Science) in Mathematics, summa cum laude
Sep. 1976–June 1977	Graduate Student at the Laboratory for Computer Science at M.I.T.
June 6, 1977	Master of Science in Computer Science and Electrical Engineering
Aug. 5, 1980	Doctorate (Ph.D.) at the Faculty of Mathematics of the Technical University of Munich, summa cum laude (Supervisor: Prof. Dr. M. Paul)

7. Title of Thesis for Most Advanced Degree:

Ein Algorithmus für das allgemeine Erreichbarkeitsproblem bei Petrinetzen und damit zusammenhängende Probleme (An algorithm for the general Petri net reachability problem and related problems; in German).

8. Principal Fields of Interest:

a) Description and analysis of the behaviour of parallel and distributed programs/systems
b) Decidability and complexity problems in the above area
c) Design of efficient algorithms and programming paradigms for parallel/distributed problems
d) Combinatorial problems and algorithms, incl. cryptographic designs
e) Polynomial ideals and their complexity
f) Computational problems in molecular biology

9. Employment:

July 1969–June 1971	Military Service, most recent active rank: Lieutenant
July 1971–Oct. 1971	Programmer, Deutsche Forschungs- und Versuchsanstalt für Luft- und Raumfahrt (DFVLR) (also March/April in 1972 and 1973)
Nov. 16, 1975–Oct. 31, 1980	Research Assistant at the Institut für Informatik of the Technical University of Munich, employed by the Sonderforschungsbereich (SFB) 49 "Foundations of Programming" (project headed by Prof. Dr. M. Paul)
Jan. 1978–Dec. 1980	Author of two editions of book "EDV-Abkürzungen" for SIEMENS AG, W. Germany (400 p.)
Oct. 1, 1980–Sep. 30, 1981	Visiting Scientist at the Laboratory for Computer Science at M.I.T., supported by a research grant of the Deutsche Forschungsgemeinschaft (DFG)
Oct. 1, 1981–Aug. 31, 1982	Research Associate and Lecturer at the Department of Computer Science of Stanford University, Stanford
March 10, 1982	Awarded an IBM Postdoctoral and Junior Faculty Research Fellowship in Mathematical Sciences for 1982–83
Sep. 1, 1982–June 30, 1989	Assistant Professor at the Department of Computer Science of Stanford University, Stanford
June 1983	Recipient of an IBM Faculty Development Award
July 1984–June 1989	Presidential Young Investigators Award (PYI)
Sep. 1, 1984–Aug. 31, 1987	Assistant Director of the Program in Mathematical and Computational Science
Sep. 1984	Recipient of an AT&T Faculty Development Award
July 1985–March 1988	Principal Investigator (PI) in Office of Naval Research research grant (together with Ullman and Papadimitriou)
Spring 1986	Participant at the Complexity Year at the MSRI (Berkeley)
Oct. 1, 1988–March 31, 1993	(Full) Professor for Theoretical Computer Science at Fachbereich Informatik, Johann Wolfgang Goethe-Universität Frankfurt
Jan. 1990–Dec. 1993	Visiting Professor (25%) at Department of Computer Science, Stanford University
Jul. 16–Sep. 30, 1990	Visiting Researcher at the International Computer Science Institute, Berkeley
Oct. 1, 1990–Sep. 30, 1991	Department Chairman, Fachbereich Informatik, Johann Wolfgang Goethe-Universität Frankfurt
April 1, 1993–	Lehrstuhl für Effiziente Algorithmen at Institut für Informatik, Technische Universität München
Oct. 1, 1996–Sep. 30, 1998	Managing Director, Institut für Informatik, Technische Universität München
January 1997	Recipient of the 1997 Leibniz Award (German Research Council, DFG)
Oct. 1, 1998–Sep 2000	Vice Managing Director (Personnel), Institut für Informatik, Technische Universität München
May 1999–Sep 2000	Vice Dean, Fakultät für Informatik, Technische Universität München
Oct 2000–Sep 2003	Dean, Fakultät für Informatik, Technische Universität München
Oct 2003–Mar 2005	Vice Dean, Fakultät für Informatik, Technische Universität München
Feb 13, 2009–	Ordinary Member of the Bavarian Academy of Sciences and Humanities
Mar 31, 2009	Honorary Professor, Tomsk Polytechnic University
Oct. 1, 2015–	retired
Jun 16, 2016–	TUM Emeritus of Excellence

10. Teaching Experience:

Nov. 1977–Sep. 1980	in charge of tutor section of courses on Mathematical Logic and Computability Theory at the Technical University of Munich, co-supervising (with Prof. Dr. M. Paul) seminars on Programming Languages, and Verification Methods for Programs, also supervising three theses for Diploma and numerous two-term projects

Jan. 1982–June 1982	developing new course CS253A,B ("Combinatorial Algorithms") at the Department of Computer Science, Stanford University
Sep. 1982–Dec. 1982	CS155 ("Concrete Mathematics")
Jan. 1983–June 1983	CS263A,B ("Combinatorial Algorithms")
Fall 1983	CS155 ("Concrete Mathematics") and developing new course CS261 ("Parallel Control and Scheduling")
Winter 1983/84	CS204 ("Programming and Problem Solving Seminar")
Spring 1984	Teaching a course on Parallel Algorithms at the University at Saarbrücken, Germany, participating in a special research project on VLSI
Fall 1984	CS263A, as well as developing new course, CS361 ("Complexity Theory")
Winter 1984/85	CS261 ("Theory of Parallel Computation")
Winter 1985/86	CS304 ("Programming and Problem Solving Seminar"), CS367A ("Parallel Computation")
Fall 1986	CS363A ("Combinatorial Algorithms")
Winter 1986/87	CS363B ("Combinatorial Algorithms")
Spring 1987	CS351 ("Complexity Theory")
Fall 1987	CS367A ("Theory of Parallel Computation")
Winter 1987/88	CS367B ("Theory of Parallel Computation")
Winter 1988/89	Informatik III
	Seminar "Expandierende Graphen und ihre Anwendungen"
Spring 1989	Informatik IV
	Seminar "Parallele graphentheoretische Algorithmen"
Winter 1989/90	Parallelrechnung I
	Seminar "Unbounded Fan-in Circuits"
Spring 1990	Parallelrechnung II
	Seminar "Grundlegende Problemlösungstechniken"
Winter 1990/91	Effiziente Algorithmen I
	Seminar "Komplexitätsklassen unterhalb von $\mathcal{P}$"
Spring 1991	Effiziente Algorithmen II
	Seminar "Scheduling: Probleme, Algorithmen und Komplexität"
Winter 1991/92	Komplexitätstheorie I
	Seminar "Effiziente Algorithmen"
Spring 1992	Komplexitätstheorie II
	Seminar "Sortieren"
Winter 1992/93	Sabbatical
Spring 1993	Einführung in die Komplexitätstheorie
Winter 1993/94	Informatik III
	Seminar "Parallel Sorting Algorithms"
Spring 1994	Informatik IV
	Seminar "Algorithmen für Petrinetze"
Winter 1994/95	Algorithmen und Datenstrukturen — Effiziente Algorithmen I
	Seminar "Randomisierte Algorithmen"
Spring 1995	Algorithmen und Datenstrukturen — Effiziente Algorithmen II
	Seminar "On-line Scheduling"
September 1995	Advanced Seminar "Approximation and Parallel Algorithms"
Winter 1995/96	Sabbatical
Spring 1996	Komplexitätstheorie
	Seminar "Dynamische Lastbalancierung"
Winter 1996/97	Parallele Algorithmen I
	Grundlagen der Kombinatorik
	Seminar "Neue Anwendungen kryptographischer Algorithmen"
	Proseminar "Datenkomprimierung"
April 1997	Dagstuhl-GI-Seminar "Beweisverifikation und Approximationsalgorithmen"
Spring 1997	Parallele Algorithmen II
	Seminar "Routing in schnellen Netzen"
	Proseminar "Zeichnen von Graphen"

September 1997	Advanced Seminar "Effiziente Algorithmen der Computergraphik"
Winter 1997/98	Effiziente Algorithmen und Datenstrukturen
	Diskrete Strukturen I
	Seminar "Schnelle Algorithmen für baumartige Graphen"
Spring 1998	Effiziente Algorithmen und Datenstrukturen II
	Seminar "Dynamische Graphenalgorithmen"
	Proseminar "Textalgorithmen"
September 1998	Advanced Seminar (Studienstiftung des Deutschen Volkes) "Quo vadis, Komplexitätstheorie?"
Winter 1998/99	Effiziente Algorithmen und Datenstrukturen I
	Untere Schranken
	Proseminar "Schnelle 3D-Graphik"
	Seminar "Algorithmen für das Internet"
Spring 1999	Effiziente Algorithmen und Datenstrukturen II
	Diskrete Strukturen II
	Proseminar "Diskrete Strukturen in der Praxis"
September 1999	Advanced Seminar "Bäume — Algorithmik und Kombinatorik"
Winter 1999/00	Seminar "Algorithmen in der Bioinformatik"
	Proseminar "Automatisiertes Zeichnen von Graphen"
	Lab "Scientific Computing: Programmieren mit Maple"
Spring 2000	Proseminar "Proofs from the Book"
	Lab "Scientific Computing: Programmieren mit Maple"
	Seminar "Approximative Algorithmen"
Winter 2000/01	Diskrete Strukturen I
	Lab "Scientific Computing: Programmieren mit Maple"
Spring 2001	Diskrete Strukturen II
	Proseminar "Algorithmen der Bioinformatik"
	Seminar "Kryptographische Verfahren"
	Lab "Scientific Computing: Programmieren mit Maple"
Winter 2001/02	Komplexitätstheorie
	Lab "Scientific Computing: Programmieren mit Maple"
	Seminar "Die Welt der Handlungsreisenden: Algorithmen, Analysen und Anwendungen"
	Proseminar "Graph Drawing"
Spring 2002	Informatik IV
	Seminar "Theoretische Grundlagen des Internet"
	Proseminar "Algorithmen in der Bioinformatik"
	Lab "Scientific Computing: Programmieren mit Maple"
Winter 2002/03	Effiziente Algorithmen und Datenstrukturen I
	Grundlegende Algorithmen (with Kosub)
	Algorithmische Algebra I (with Ullrich)
	Lab "Scientific Computing: Programmieren mit Maple"
	Lab "Algorithmen-Entwurf"
	Lab "Kryptologie"
	Seminar "Quantencomputing"
	Proseminar "Algorithmen der Bioinformatik"
Spring 2003	Effiziente Algorithmen und Datenstrukturen II
	Algorithmische Algebra II (with Ullrich)
	Lab "Scientific Computing: Programmieren mit Maple"
	Seminar "Scheduling"
	Proseminar "Algorithmen für digitale Bibliotheken"
Winter 2003/04	Diskrete Strukturen I
	Effiziente Algorithmen und Datenstrukturen I (with Kosub)
	Grundlegende Algorithmen (with Ernst)
	Proseminar "Algorithmische Aspekte des Artificial Life"
	Seminar "Quantencomputing"
	Lab "Algorithmen-Entwurf"
Spring 2004	Diskrete Strukturen II
	Internet-Algorithmik (with Kosub)

	Proseminar "Graph Drawing"
	Seminar "Kryptographische Algorithmen"
	Seminar "Genexpressionsanalyse"
	Lab "Diskrete Optimierung"
Winter 2004/05	Effiziente Algorithmen und Datenstrukturen I (with Kosub)
	Elliptische Kurven-Kryptosysteme (with Ullrich)
	Grundlegende Algorithmen (with Ernst)
	Proseminar "Textalgorithmen und Pattern Matching"
	Seminar "Dynamische Graph-Algorithmen"
	Lab "Algorithmen-Entwurf"
Spring 2005	Informatik IV
	Effiziente Algorithmen und Datenstrukturen II (with Kosub)
	Algorithmische Algebra I (with Ullrich)
	Selected Topics in Computational Biology (with Ernst)
	Proseminar "Markov-Ketten in der Algorithmik"
	Seminar "Internet-Algorithmik"
	Lab "Diskrete Optimierung"
Winter 2005/06	Diskrete Strukturen
	Grundlegende Algorithmen (with Ernst)
	Fundamental Algorithms (with Eckhardt)
	Algorithmische Algebra II (with Ullrich)
	Proseminar "Algorithmische Geometrie"
	Seminar "Approximationsalgorithmen"
	Lab "Algorithmen-Entwurf"
Spring 2006	Diskrete Strukturen II
	Informatik IV
	Grundlagen: Algorithmen und Datenstrukturen (with Kosub)
	Proseminar "Textalgorithmen"
	Seminar "Internet-Algorithmik: Effiziente Informationsgewinnung im Internet"
	Lab "Diskrete Optimierung"
Winter 2006/07	Effiziente Algorithmen und Datenstrukturen
	Internet-Algorithmik (with Kosub)
	Fundamental Algorithms (with Ernst)
	Proseminar "Grundlagen lokal selbststabilisierender Strukturen"
	Seminar "Algorithm Engineering"
	Lab "Algorithmen-Entwurf"
Spring 2007	Effiziente Algorithmen und Datenstrukturen II
	Einführung in die Theoretische Informatik
	Ausgewählte Themen in algorithmischer Bioinformatik (with Ernst)
	Internet-Algorithmik II (with Kosub)
	Proseminar "Datenkompression"
	Seminar "Algorithmische Aspekte nichtlinearer Optimierung"
Winter 2007/08	Effiziente Algorithmen und Datenstrukturen
	Fundamental Algorithms (with Chibisov)
	Proseminar "Graph Drawing"
	Seminar "Algorithm Engineering"
	Lab "Algorithmen-Entwurf"
Spring 2008	Effiziente Algorithmen und Datenstrukturen II
	Proseminar "Algorithmen der Computergraphik"
	Seminar "Algorithmische Geometrie"
Winter 2008/09	Algorithmen und Datenstrukturen (EI)
	Proseminar "Algorithms for Daily Life"
	Seminar "IT-Security Threats"
	Lab "Algorithm Design"
March 2009	Block Course "Algorithmics for Sequential and Parallel Computation", Tomsk Polytechnic University (54 class hours)
Spring 2009	Sabbatical
Winter 2009/10	Effiziente Algorithmen und Datenstrukturen

	Perlen der Informatik I
Spring 2010	Diskrete Wahrscheinlichkeitstheorie
	Effiziente Algorithmen und Datenstrukturen II
	Python for Fine Programmers (with Sadanandan)
Winter 2010/11	Diskrete Strukturen
	Effiziente Algorithmen und Datenstrukturen
	Proseminar "Datenkompression"
	Seminar "Algorithmen für NP-schwere Probleme"
Spring 2011	Diskrete Wahrscheinlichkeitstheorie
	Effiziente Algorithmen und Datenstrukturen II
	Proseminar "Algorithms in Bioinformatics"
	Seminar "Inside Google — Algorithms for (Social) Networks"
	Lab "Discrete Optimization"
Summer 2011	Diskrete Strukturen
Winter 2011/12	Diskrete Strukturen
	Randomized Algorithms
	Proseminar "Proofs from THE BOOK"
	Lab "Algorithm Design"
Spring 2012	Komplexitätstheorie
	Proseminar "Graph Drawing"
	Lab "Discrete Optimization"
Winter 2012/13	Diskrete Strukturen
	Parallel Algorithms
	Lab "Algorithm Design"
Spring 2013	Komplexitätstheorie
	Proseminar "Graph Drawing"
	Lab "Discrete Optimization"
Winter 2013/14	Sabbatical
Spring 2014	Einführung in die theoretische Informatik
	Komplexitätstheorie
	Proseminar "Graph Drawing"
	Lab "Algorithmen für Programmierwettbewerbe"
Winter 2014/15	Automaten und Formale Sprachen
	Lab "Algorithmen für Programmierwettbewerbe"
Spring 2015	Einführung in die theoretische Informatik
	Komplexitätstheorie
	Proseminar "Graph Drawing"
	Lab "Algorithmen für Programmierwettbewerbe"

11. **Organizational Membership:**

Royal Bavarian Foundation Maximilianeum
Studienstiftung des deutschen Volkes
European Association for Theoretical Computer Science (EATCS)
Association for Computing Machinery (ACM)
ACM Special Interest Group in Automata and Computability Theory
IEEE Computer Society
SIAM
Gesellschaft für Informatik (GI)
SIG Petri Nets and Related System Models of Gesellschaft für Informatik (GI)
Sigma Xi
Editorial Board of INFORMATION AND COMPUTATION
Editorial Board of JOURNAL OF GRAPH ALGORITHMS AND APPLICATIONS
Editorial Board of LECTURE NOTES IN INFORMATICS (-2012)
Editorial Board of DAGSTUHL REPORTS (-2012)
Editorial Board of DAGSTUHL FOLLOW-UPS (-2012)
Governing Board of GI/ITG SIG PARS
Steering Committee of EuroPar
Steering Committee of IPDPS
Steering Committee of PASA

Steering Committee of WG

Steering Committee of CSR Computer Science in Russia

2000 – 2004 Elected Member of DFG Review Board for Theoretical Computer Science

2007 – 2008 Elected Member of DFG Review Board for Theoretical Computer Science

1996 – 2004 Speaker of Fachbereich Grundlagen der Informatik of GI

1998 – 2005 Chairman of Board of German-Israeli Leibniz Minerva Center for Computer Sciences

Member GI-Kuratorium der Konrad-Zuse-Medaille

Member IFIP TC1

2006 – 2010 Vice President Gesellschaft für Informatik (GI)

2009/02 –   Member of the Bavarian Academy of Sciences

2010 – 2012 Member Advisory Board TUM: Junge Akademie

12. Publications:

1. Einige Sätze über Umformungen und verklemmungsfreie Führbarkeit bei bewerteten Petrinetzen. Diplomarbeit (Aug. 1975), Institut für Informatik, Technical University of Munich (in German).

2. The complexity of the finite containment problem for Petri nets. TR 181, LCS, M.I.T. (May 1977).

3. [with A.R. Meyer] The complexity of the finite containment problem for Petri nets. J. ACM **28**, 3 (1981), pp. 561–576.

4. Kollateralität und Ablaufbeschreibungen I. TUM–INFO–7802, Technical University of Munich (Dec. 1978) (in German).

5. A non primitive recursive decision problem for Petri nets. Conference on Complexity Theory at Oberwolfach (Oct. 1979). Abstract in EATCS Bulletin No. 10 (Jan. 1980).

6. Ein Algorithmus für das allgemeine Erreichbarkeitsproblem bei Petrinetzen und damit zusammenhängende Probleme. TUM–I8010, Technical University of Munich (Sep. 1980) (in German).

7. An effective representation of the reachability set of persistent Petri nets. TM 188, LCS, M.I.T. (Dec. 1980).

8. Persistence of vector replacement systems is decidable. Acta Informatica **15** (1981), pp. 309–318. Also: TM 189, LCS, M.I.T. (Dec. 1980).

9. An algorithm for the general Petri net reachability problem. Proceedings of the 13th Ann. ACM Symposium on Theory of Computing, May 11–13, 1981 (Milwaukee, WI), pp. 238–246. Also: SIAM Journal on Computing **13**, 3 (1984), pp. 441–460.

10. [with A.R. Meyer] The complexity of the word problems for commutative semigroups and polynomial ideals. TM 199, LCS, M.I.T. (June 1981). Also: Advances in Mathematics, **46**, 3 (1982), pp. 305–329.

11. Well structured parallel programs are not easier to schedule. Tech. Report STAN-CS-81-880, Dept. of Computer Science, Stanford University, Sep. 1981.

12. Combinatorial Algorithms I. Tech. Report STAN-CS-82-907, Dept. of Computer Science, Stanford University, May 1982.

13. [with T. Spencer] Node Weighted Matching. Proceedings of ICALP '84, Springer Lecture Notes **172** (1984), pp. 454–464.

14. [with P. Hochschild and A. Siegel] Techniques for solving graph problems in parallel environments. Proc. 24th Ann. Symp. on Foundations of Computer Science (IEEE, 1983), pp. 351–359.

15. [with R. King] Synthesis of Efficient Structures for Concurrent Computation. Technical Report KES.U.83.6, Kestrel Institute, Palo Alto (Oct. 1983).

16. [with R. King] Transformations for Synthesizing Efficient Structures for Concurrent Computation. In: Bertolazzi, P, Luccio, F. (eds.): VLSI: Algorithms and Architectures. Proceedings of the International Workshop on Parallel Computing and VLSI, Amalfi, Italy (May 1984): North-Holland 1985, pp. 377–386.

17. [with R. Anderson] Parallelism and Greedy Algorithms. STAN-CS-84-1003, Department of Computer Science, Stanford University (April 1984). Also in: Preparata, F.P. (ed.): Advances in Computing Research **4**: Parallel and Distributed Computing. JAI Press (1987), pp. 17–38.

18. [with P. Hochschild and A. Siegel] Parallel Graph Algorithms. STAN-CS-84-1028, Department of Computer Science, Stanford University (December 1984).

19. [with J. Hershberger] Fast Sequential Algorithms to Find Shuffle-Minimizing and Shortest Paths in a Shuffle-Exchange Network. STAN-CS-85-1050, Department of Computer Science, Stanford University (May 1985).

20. [with R.J. Anderson and P.H. Hochschild] A programming and problem-solving seminar. STAN-CS-85-1072, Department of Computer Science, Stanford University (1985).

21. [with D. Helmbold] Fast Scheduling Algorithms on Parallel Computers. STAN-CS-84-1025, Department of Computer Science, Stanford University (November 1984). Also in: Preparata, F.P. (ed.): Advances in Computing Research **4**: Parallel and Distributed Computing. JAI Press (1987), pp. 39–68.

22. Fast Selection on Paracomputers. 11th International Workshop on Graphtheoretic Concepts in Computer Science. Proc. of the WG85 (June 1985), pp. 249–254.

23. [with R. Anderson] Parallelism and the Maximal Path Problem. Information Processing Letters **24** (1987), pp. 121–126.

24. [with R. Anderson] A $\mathcal{P}$-complete Problem and Approximations to it. STAN-CS-84-1014, Department of Computer Science, Stanford University (September 1984).

25. [with R. Anderson and M. Warmuth] Parallel Approximation Algorithms for Bin Packing. STAN-CS-88-1200, Department of Computer Science, Stanford University (March 1988). Also in: *Information and Computation* **82** (1989), pp. 262–277. Also in: Fuchssteiner,B., T. Lengauer and H.J. Skala (eds.): Methods of Operations Research **60**, Proceedings of the XIII. Symposium on Operations Research (Paderborn, September 7–9, 1988). Frankfurt am Main: Anton Hain (1990), pp. 165–182.

26. [with D. Helmbold] Two Processor Scheduling is in $\mathcal{NC}$. STAN-CS-85-1079, Department of Computer Science, Stanford University. In: Makedon, F., Mehlhorn, K., Papatheodorou, T., Spirakis, P. (eds.): Proceedings of the 2nd Aegean Workshop on Computing: VLSI Algorithms and Architectures. Berlin-Heidelberg-New York: Springer (1986), LNCS 227, pp. 12–25. Also in: SIAM J. on Comput. **16** (1987), pp. 747–759.

27. [with T. Lettmann and H. Kleine Büning] Projections of Vector Addition System Reachability Sets Are Semilinear. STAN-CS-88-1199, Department of Computer Science, Stanford University (March 1988). Also in: TCS **64**, 2 (1989), pp. 343–350.

28. [with D. Helmbold] Perfect Graphs and Parallel Algorithms. In: Hwang,K., Jacobs, S.M., Swartzlander, E.E. (eds.): Proceedings of the 1986 International Conference on Parallel Processing, IEEE Computer Society (August 1986), pp. 853–860.

29. [with D. Helmbold] Applications of Parallel Scheduling to Perfect Graphs. STAN-CS-86-1118, Department of Computer Science, Stanford University (June 1986). In: Gottfried Tinhofer and Gunther Schmidt (eds.): Proceedings of the 12th International Workshop on Graphtheoretic Concepts in Computer Science, WG '86, Bernried, FRG, June 17–19, 1986. LNCS **246** (1987), pp. 188–203. Also in: G. Tinhofer, E. Mayr, H. Noltemeier, M. Syslo (eds.): *Computational Graph Theory. Computing Supplementum* **7** (1990), pp. 93–107.

30. [with D. Rosenblum] Simulation of an Ultracomputer with Several 'Hotspots'. STAN-CS-86-1119, Department of Computer Science, Stanford University (June 1986).

31. Small Proof Trees and Efficient Parallel Algorithms. In: Logic, Philosophy of Science and Epistemology. Proceedings of the 11th International Wittgenstein Symposium (August 4-13, 1986, Kirchberg/Wechsel, Austria), (1987) pp. 68–79.

32. The Dynamic Tree Expression Problem. STAN-CS-87-1156, Department of Computer Science, Stanford University (May 1987). Also in: S.K. Tewksbury, B.W. Dickinson, S.C. Schwartz (eds.): Concurrent Computations: Algorithms, Architecture and Technology. Proceedings of the 1987 Princeton Workshop (September 30 – October 1, 1987). New York: Plenum Press, 1988, pp.157–179.

33. The Design of Parallel Algorithms: Principles and Problems. In: Paul, G. and G.S. Almasi (eds.): Parallel Systems and Computation. Proceedings of the IBM Europe Institute, Oberlech, Austria, 11–15 August 1986; Amsterdam, New York: North-Holland (1988), pp. 117–133.

34. [with G. Plaxton] Network Implementations of the DTEP Algorithm. STAN-CS-87-1157, Department of Computer Science, Stanford University (May 1987).

35. [with G. Plaxton] On the Spanning Trees of Weighted Graphs. Proceedings of the 14th International Workshop on Graph-Theoretic Concepts in Computer Science (WG '88) (Amsterdam, The Netherlands, June 1988). Springer-Verlag, LNCS 344 (1989), pp. 394–405. Also: Combinatorica **12**,4 (1992), pp. 433–447.

36. Membership in Polynomial Ideals over $\mathcal{Q}$ Is Exponential Space Complete. TR 6/88, Fachbereich Informatik, Universität Frankfurt, November 1988. Also in: Proceedings of STACS '89 (Paderborn, February 16–18, 1989), LNCS 349 (1989, pp. 400–406.

37. Some Aspects of the Theory of Massively Parallel Computation. Proceedings of the 2nd Workshop on VLSI Frontiers (March 13–20, 1988, Banff, Alberta, Canada).

38. Parallel Approximation Algorithms. STAN-CS-88-1225, Department of Computer Science, Stanford University. Also: TR 5/88, Fachbereich Informatik, Universität Frankfurt (November 1988). Also in: Proceedings of the International Conference of Fifth Generation Computer Systems 1988 (Tokyo, November/December 1988), Tokyo: Institute for New Generation Technology (1988), pp. 542–551.

39. [with Ashok Subramanian] The Complexity of Circuit Value and Network Stability. Proceedings of 4th Structures in Complexity Theory Conference (June 19–22, 1989, Eugene, Oregon). Washington: IEEE Computer Society Press (1989), pp. 114–123. Also: STAN-CS-89-1278, Department of Computer Science, Stanford University (August 1989). Also in: J. Comput. Syst. Sci. **44** (1992), pp. 302–323.

40. [with G. Plaxton] Pipelined Parallel Prefix Computations, and Sorting on a Pipelined Hypercube. STAN-CS-89-1261, Department of Computer Science, Stanford University (1989). Also: TR 4/89, Fachbereich Informatik, Universität Frankfurt (Mai 1989). Also: J. Parallel Distrib. Comput. **17** (1993), pp. 374–380.

41. Basic parallel algorithms in graph theory. TR 7/89, Fachbereich Informatik, Universität Frankfurt (October 1989). Also in: G. Tinhofer, E. Mayr, H. Noltemeier, M. Syslo (eds.): *Computational Graph Theory. Computing Supplementum* **7** (1990), pp. 69–91.

42. [ed., with G. Tinhofer and H. Noltemeier and M. Syslo] *Computational Graph Theory. Computing Suppl.* **7**. Wien New York: Springer Verlag 1990.

43. [with Alexander Wang and Robert Cypher] Embedding Complete Binary Trees in Faulty Hypercubes. Technical Report RJ7821, IBM Almaden Research Center (November 1990). Also: Proceedings of the 3rd IEEE Symposium on Parallel and Distributed Processing (December 1991, Austin, Texas), pp. 112–119. Also: TR 7/91, Fachbereich Informatik, Universität Frankfurt (January 1992).

44. Polynomial Ideals and Applications. Mitteilungen der Mathematischen Gesellschaft in Hamburg **XII**, 4 (Festschrift zum 300jährigen Bestehen der Gesellschaft) (1992), pp. 1207–1215.

45. [with Ralph Werchner] Optimal Routing of Parentheses on the Hypercube. Proceedings of the 4th Annual ACM Symposium on Parallel Algorithms and Architectures SPAA '92 (San Diego, California, June 29 – July 1, 1992), pp. 109–117. Also: Technical Report 3/93, Fachbereich Informatik, Universität Frankfurt (February 1993). Also: J. Parallel Distrib. Comput. **26** (1995), pp. 181–192.

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13. **Conferences:**

   1. Co-organizer Workshop on Graph Theory, May 1989, Bernried, Germany

   2. Organizer 11th Workshop on Efficient Algorithms and Complexity Theory, June 1989, Frankfurt, Germany

   3. Organizer of first Workshop on Parallel Systems and Algorithms (PASA), April 1990, Frankfurt

   4. Member program committee STACS 90

   5. Co-organizer of first Dagstuhl Workshop on Parallel and Distributed Algorithms, March 1991, Dagstuhl, Germany

   6. Co-organizer of second PASA, October 1991, Paderborn, Germany

   7. Organizer 18th Workshop on Efficient Algorithms and Complexity Theory, February 1992, Frankfurt, Germany

   8. Co-organizer of second Dagstuhl Workshop on Parallel and Distributed Algorithms, March 1992, Dagstuhl, Germany

   9. Organizer of 18th International Workshop on Graph-theoretic Concepts in Computer Science, June 1992, Wiesbaden-Naurod, Germany

   10. Member program committee SPAA'93

   11. Co-organizer of third PASA, April 1993, Bonn, Germany

   12. Member program committee WG'93

   13. Co-organizer of third Dagstuhl Workshop on Parallel and Distributed Algorithms, September 1993, Dagstuhl, Germany

   14. Member program committee STACS'94

   15. Co-organizer and program committee WG'94

   16. Organizer and chairman program committee STACS'95

   17. Member program committee WADS'95

   18. Member program committee WG'95

   19. Co-organizer of fourth Dagstuhl Workshop on Parallel and Distributed Algorithms, September 1995, Dagstuhl, Germany

   20. Member program committee ESA'96

   21. Member program committee GI'96 Annual Conference

   22. Member program committee WG'96

   23. Co-organizer and member program committee 4th PASA, PASA'96 (Jülich)

   24. Member program committee IRREGULAR'96

   25. Member program committee WG'97

   26. Local chair and member program committee of workshop "Routing and Communication in Interconnection Networks" at Euro-Par'97, Passau

   27. Member program committee SIROCCO'97

   28. Co-organizer of GI-Seminar on "Beweisverifikation und Approximationsalgorithmen", April 1997, Dagstuhl, Germany

   29. Co-organizer of first Dagstuhl Workshop on Parallel Scheduling, July 1997, Dagstuhl, Germany

   30. Co-organizer of fifth Dagstuhl Workshop on Parallel and Distributed Algorithms, September 1997, Dagstuhl, Germany

31. Co-chair of Workshop on Computer Algebra in Scientific Computing (CASC'98), April 1998, St. Petersburg

32. Member program committee WG'98, Bratislava

33. Member program committee Approx'98, July 1998, Aalborg, Denmark

34. Global chair and member program committee of workshop "Distributed Systems and Algorithms" at Euro-Par'98, Southampton

35. Member program committee IPPS/SPDP'99, San Juan

36. Member program committee ESA'99, Prague

37. Member program committee SPAA'99, France

38. Co-chair of Workshop on Computer Algebra in Scientific Computing (CASC'99), June 1999, Munich

39. Member program committee WG'99, Switzerland

40. Co-organizer of sixth Dagstuhl Workshop on Parallel and Distributed Algorithms, Jul 1999, Dagstuhl, Germany

41. Global chair and member program committee of workshop "Routing and Communication in Interconnection Networks" at Euro-Par'99, Toulouse

42. Member steering committee and program committee 5th PASA, PASA'99, Jena

43. Member program committee MFCS'99, Poland

44. Member organizing and program committee International Workshop on Communication and Data Management in Large Networks, Paderborn 1999

45. Member program committee WG'2000, Constance

46. Member program committee IFIP TCS2000

47. Local chair and member advisory board of Euro-Par'2000, Munich

48. Member Steering Committee IPDPS'2000, Cancun

49. Member program committee SIROCCO'2000, L'Aquila

50. Co-chair of International Workshop on Computer Algebra in Scientific Computing (CASC'2000), October 2000, Samarkand

51. Member program committee WG'2001, Rostock

52. Member program committee WADS'2001, Providence

53. Member program committee ISAAC'01, Christchurch, NZ

54. Co-chair of International Workshop on Computer Algebra in Scientific Computing (CASC'2001), September 2001, Constance

55. Member program committee WG'2001, Rostock

56. Member program committee WADS'2001, Providence

57. Member program committee ISAAC'01, Christchurch, NZ

58. Member steering committee, program committee, and co-organizer of 6th PASA, April 2002, Karlsruhe, Germany

59. Member program committee WG'2002, Chechia

60. Member program committee MFCS'02, Poland

61. Global chair and member advisory board of Euro-Par'2002, Paderborn

62. Co-chair of International Workshop on Computer Algebra in Scientific Computing (CASC'2002), September 2002, Crimea

63. Founder, Organizer and Director of Joint Advanced Student School (JASS), February 16–26, 2003, St. Petersburg

64. Member program committee WG'2003, The Netherlands

65. Co-chair of International Workshop on Computer Algebra in Scientific Computing (CASC'2003), September 2003, Passau

66. Organizer and Director of Joint Advanced Student School (JASS'2004), March 28–April 7, 2004, St. Petersburg

67. Member program committee WG'2004, Bad Honnef

68. Co-chair of International Workshop on Computer Algebra in Scientific Computing (CASC'2004), July 2004, St. Petersburg

69. Chair program committee IFIP-TCS, August 2004, Toulouse

70. Co-Director of First Joint Bavarian-Swiss International School (JoBSIS'2004), September 6–18, 2004, Binn (Wallis)

71. Organizer and Director of Joint Advanced Student School (JASS'2005), March 30–April 9, 2005, St. Petersburg

72. Member program committee WG'2005, Metz

73. Co-chair Session Computational Topology and Geometry, ACA 2005, July 32–August 3, 2005, Nara (Japan)

74. Co-chair of International Workshop on Computer Algebra in Scientific Computing (CASC'2005), September 2005, Kalamata

75. Member steering committee 1st Russian-Bavarian Conference on Bio-Medical Engineering, October 13–14, 2005, Munich

76. Chair Section Bioinformatics 1st RBC-BME, October 14, 2005, Munich

77. Organizer and Director of Moscow-Bavarian Joint Advanced Student School (MB-JASS'2006), March 19–29, 2006, Moscow

78. Organizer and Director of Joint Advanced Student School (JASS'2006), April 2–12, 2006, St. Petersburg

79. Organizer and Co-Director of 2nd Russian-Bavarian Conference on Bio-Medical Engineering (2nd RBC-BME), June 14–15, 2006, Moscow

80. Co-chair Session Computational Topology and Geometry, ACA 2006, June 26–29, 2006, Varna (Bulgaria)

81. Member program committee IFIP International Conference on Theoretical Computer Science (IFIP TCS 2006, 19th IFIP World Computer Congress, WCC 2006), August 2006, Santiago (Chile)

82. Co-chair of International Workshop on Computer Algebra in Scientific Computing (CASC'2006), September 2006, Chisinau (Moldowa)

83. Organizer and Director of Moscow-Bavarian Joint Advanced Student School (MB-JASS'2007), March 11–21, 2007, Moscow

84. Organizer and Director of Joint Advanced Student School (JASS'2007), March 25 – April 4, 2007, St. Petersburg

85. Member program committee WG'2007, Dornburg/Jena

86. Co-Director of 3rd Russian-Bavarian Conference on Bio-Medical Engineering (3rd RBC-BME), July 2–3, 2007, Erlangen

87. Co-chair Session Algebraic and Numerical Computation for Engineering and Optimization Problems, ACA 2007, July 19–22, 2007, Rochester (MI, U.S.A.)

88. Co-chair of International Workshop on Computer Algebra in Scientific Computing (CASC'2007), September 2007, Bonn (Germany)

89. Organizer and Director of Moscow-Bavarian Joint Advanced Student School (MB-JASS'2008), February 25 – March 5, 2008, Moscow

90. Organizer and Director of Joint Advanced Student School (JASS'2008), March 10–19, 2008, St. Petersburg

91. Co-Chair of 4th Russian-Bavarian Conference on Bio-Medical Engineering (4th RBC-BME), July 7–9, 2008, Zelenograd

92. Co-organizer and Director of Moscow-Bavarian Joint Advanced Student School (MB-JASS'2009), March 2–11, 2009, Moscow

93. Organizer and Director of Joint Advanced Student School (JASS'2009), March 29 – April 7, 2009, St. Petersburg

94. Member program committee WG'2009, Montpellier/France

95. Section Chair of 5th Russian-Bavarian Conference on Bio-Medical Engineering (5th RBC-BME), July 1–4, 2009, Munich

96. Member program committee PARS'2009, June 4–5, Parsberg, Germany

97. Co-chair of International Workshop on Computer Algebra in Scientific Computing (CASC'2009), September 2009, Kobe (Japan)

98. Member program committee PARS'2010, February 23, Hannover, Germany

99. Chair program committee CSR'2010, June 16–20, 2010, Kazan, Russia

100. Local Organizer of ISSAC'2010, July 25–28, 2010, Munich, Germany

101. Co-chair of International Workshop on Computer Algebra in Scientific Computing (CASC'2010), September 5–12, 2010, Tsakhkadzor, Armenia

102. Co-organizer and Director of Moscow-Bavarian Joint Advanced Student School (MB-JASS'2011), March 20–27, 2011, Moscow

103. Member program committee PARS'2011, May 26–27, Rüschlikon, Switzerland

104. Member program committee WG'2011, June 21–23, 2011, Tepla, Czech Republic

105. Co-chair of International Workshop on Computer Algebra in Scientific Computing (CASC'2011), September 5–9, 2011, Kassel, Germany

106. Section Chair of 7th Russian-Bavarian Conference on Bio-Medical Engineering (7th RBC-BME), October 11–13, 2011, Erlangen

107. Member steering committee and program committee of 10th PASA, February 28–29, 2012, Munich, Germany

108. Organizer and Director of Joint Advanced Student School (JASS'2012), March 18–24, 2012, St. Petersburg, Russia

109. Organizer and Director of Moscow-Bavarian Joint Advanced Student School (MB-JASS'2012), March 27 – April 2, 2012, Herrsching, Germany

110. Member program committee CSR'2012, July 3–7, 2012, Nizhnij Novgorod, Russia

111. Co-chair of International Workshop on Computer Algebra in Scientific Computing (CASC'2012), September 3–6, 2012, Maribor, Slovenia

112. Member steering committee CSR "Computer Science in Russia"

113. Member program committee WG'2013, June 19–21, 2013 Lübeck, Germany

114. Member program committee PARS'2013, April 11–12, 2013, Erlangen, Germany

115. Co-chair of International Workshop on Computer Algebra in Scientific Computing (CASC'2013), September 9–13, 2013, Berlin, Germany

116. Co-organizer and Director of Moscow-Bavarian Joint Advanced Student School (MB-JASS'2013), September 29 – October 6, 2013, Tsakhkadzor, Armenia

117. Co-chair of Symposium on Theoretical Aspects of Computer Science (STACS'2014), March 5–8, 2014, Lyon, France

118. Co-chair and Organizer of Symposium on Theoretical Aspects of Computer Science (STACS'2015), March 4–7, 2015, Garching, Germany

119. Member program committee PARS'2015, May 7–8, 2014, Potsdam, Germany

120. Chair and Organizer of International Workshop on Graph-Theoretic Concepts in Computer Science (WG'2015), June 17–19, 2015, Garching, Germany

121. Member program committee International Symposium on Symbolic and Algebraic Computation (ISSAC'2016), July 19–22, 2016, Waterloo, Canada

122. Member program committee PASA'2016, April 4–5, 2016, Nuremberg, Germany

14. Lectures:

"The reachability problem in vector replacement systems" at:
>   Theory Day at Xerox PARC, Palo Alto, April 12, 1982

"An algorithm for the general Petri net reachability problem" at:
>   University of Dortmund, Germany, DMV Conference, September 16, 1980
>   Massachusetts Institute of Technology, Laboratory for Computer Science, December 3, 1980
>   University of Rochester, Dept. of Computer Science, January 26, 1981
>   University of Toronto, Dept. of Computer Science, March 25, 1981
>   University of Waterloo, Dept. of Computer Science, March 26, 1981
>   13th Ann. STOC, Milwaukee, WI, May 12, 1981
>   Complexity Theory Meeting at Oberwolfach, November 3, 1981
>   Bell Laboratories, Murray Hill, N.J., November 17, 1981

"A constructive proof for the semilinearity of persistent Petri net reachability sets" at:
>   Massachusetts Institute of Technology, Laboratory for Computer Science, October 30, 1980

"The word problem for commutative semigroups" at:
>   Massachusetts Institute of Technology, Dept. of Mathematics, April 24, 1981
>   Harvard University, Dept. of Computer Science, May 4, 1981
>   Stanford University, Dept. of Computer Science, October 1, 1981

"Well structured parallel programs are not easier to schedule" at:
>   Massachusetts Institute of Technology, Laboratory for Computer Science, May 19, 1981
>   Stanford University, Dept. of Computer Science, October 29, 1981
>   Complexity Theory Meeting at Oberwolfach, November 5, 1981
>   TU München, Institut für Informatik, November 12, 1981
>   IBM, Yorktown Heights, November, 1981
>   IBM, San Jose, November 24, 1981

"Recent Results for UET-Scheduling" at:
>   University of California at Santa Cruz, Dept. of Computer Science, December 9, 1982
>   Stanford University, AFLB Seminar, January 20, 1983
>   Stanford University, Computer Forum, February 3, 1983
>   University of California at Berkeley, Theory Seminar, February 28, 1983

"Area-time Efficient VLSI-layouts for Graph-theoretic Problems" at:
>   Stanford University, AFLB Seminar, February 17, 1983
>   Workshop "Mathematical Methods for VLSI" at Oberwolfach, 11/27–12/3/1983
>   University at Munich, June 12, 1984

"Fast Selection on Paracomputers" at:
>   UC at Berkeley, Bay Area Theory Seminar, February 3, 1983
>   University of the Saarland, Saarbrücken, May 17, 1984

"Parallel Computation: Does Complexity Theory Help?" at:

  Stanford University, Supercomputer Seminar, February 23, 1984
  University of the Saarland, Saarbrücken, May 11, 1984
  Stanford University, CIS Sponsors Meeting, November 1984
  IBM Research Center, Yorktown Heights, January 4, 1985

"How to Cope with Byzantine Generals" at:

  Stanford University, Distributed Systems Seminar, March 13, 1984

"Transformations for Synthesizing Efficient Structures for Concurrent Computation" at:

  Workshop on Parallel Computation and VLSI, Amalfi (Italy), May 24, 1984

"Two Processor Scheduling is in NC" at:

  Stanford University, Bay Area Theory Seminar, June 14, 1985
  2nd Int. Workshop on Parallel Computing & VLSI, Loutraki, Greece, July 8, 1986

"Nonparallelizable Algorithms" at:

  NBS Workshop on Performance Evaluation, June 6, 1985

"Efficient Parallel Scheduling Algorithms" at:

  19th Ann. Asilomar Conf. on Circuits, Systems and Computers, November 7, 1985

"The Dynamic Tree Expression Problem" at:

  Workshop on Complexity of Parallel and Distributed Computation, MSRI, Berkeley, May 19,
  1986
  Johann Wolfgang Goethe-Universität, Frankfurt, FRG, June 16, 1986
  Universität of Würzburg, FRG, November 14, 1986
  University of California at Santa Cruz, November 20, 1986
  University of Texas at Austin, Distinguished Lecturer Series, April 13, 1987
  University of Erlangen-Nürnberg, FRG, July 2, 1987
  1987 Princeton Workshop on Algorithm, Architecture And Technology Issues for Models of
  Concurrent Computation, Princeton, October 1, 1987
  Rice University, October 30, 1987
  Toshiba Corporation Research and Development Center, Kawasaki, Japan, November 28, 1988
  TIGKI Seminar, TU Munich, February 8, 1989
  Informatik-Kolloquium, Mannheim University, May 16, 1991

"Applications of Parallel Scheduling to Perfect Graphs" at:

  WG86, Graphtheoretic Concepts in Computer Science, Bernried, FRG, June 19, 1986

"Design of Parallel Algorithms: Principles and Problems" at:

  Seminar on Parallel Computing, IBM Europe Institute, Oberlech, Austria, August 12, 1986

"Proof Trees and Efficient Parallel Computation" at:

  11th Int. Wittgenstein Symposium, Kirchberg/Wechsel, Austria, August 9, 1986

"Parallel Bin Packing Algorithms" at:

  Complexity Theory Workshop, Oberwolfach, FRG, November 13, 1986
  PACO Seminar, Stanford University, May 15, 1987
  Operations Research Colloquium, Stanford, January 20, 1988
  Computer Science Colloquium, UC Irvine, June 1, 1988
  Distinguished Lecture Series, Computer Science, UC San Diego, June 3, 1988
  Computer Science Colloquium, Technische Universität München, July 8, 1988
  13th Symposium on Operations Research, Paderborn, September 7, 1988

"Efficient Parallel Embeddings of Trees" at:

  VLSI Theory Workshop, Oberwolfach, FRG, November 5,1987

"The Parallel Complexity of Gaussian Elimination" at:

  Oberwolfach Workshop on Numerical Linear Algebra and Parallel Computation, March 3, 1988
  Computer Science Department, Rice University, Houston, April 29, 1988

"Some Aspects of the Theory of Massively Parallel Computation" at:

  2nd Banff Workshop on Frontiers, March 13–20, 1988 (5 talks)

"The Complexity of Membership in Polynomial Ideals" at:

> Oberwolfach Workshop on Complexity Theory, November 16, 1988
> RMF-FORMAT Workshop, JWG-University, Frankfurt, December 16, 1988

"Polynomial Ideals and Applications" at:

> Department Colloquium, University of the Saarland, Saarbrücken, February 10, 1989
> STACS'89, Paderborn, February 17, 1989
> Departmental Colloquium, University Bonn, December 4, 1989
> Departmental Colloquium, University Paderborn, December 5, 1989
> Colloquium "300 Jahre Mathematische Gesellschaft", Hamburg, March 22, 1990
> Mathematical Colloquium, University Freiburg, June 1, 1990
> CSL Colloquium, SRI, Menlo Park, September 27, 1990
> Colloquium, ICSI, Berkeley, September 28, 1990
> Colloquium, IBM Almaden, September 13, 1991
> Colloquium, TH Darmstadt, November 25, 1991
> Colloquium, UniBw München, December 3, 1991

"On the Algorithmic Complexity of Hilbert's Nullstellensatz" at:

> Departmental Colloquium, Mathematics Department, Frankfurt, July 8, 1992
> Dagstuhl Workshop on "Algebraic Complexity and Parallelism", July 22, 1992
> Workshop on Algebra and Combinatorics: Interactions and Applications, Königstein, March 8, 1994

"Über die algorithmische Komplexität von Hilberts Nullstellensatz" at:

> Kolloquium der Österreichischen Mathematischen Gesellschaft und der Österreichischen Computer Gesellschaft, Wien, October 27, 1994

"On polynomial ideals, their complexity, and applications" at:

> Departmental Colloquium, Computer Science Department, Tübingen, July 5, 1995
> FCT'95 (invited talk), Dresden, August 23, 1995
> Dagstuhl Colloquium on Efficient Algorithms for Discrete Problems and Their Application, November 14, 1996
> ALCOM-IT Annual Workshop, Universität Köln, January 22, 1997
> Workshop "Efficient Algorithms", Oberwolfach, August 4, 1997
> Department Colloquium, Universität Konstanz, November 14, 1997

"Parallel Approximation Algorithms" at:

> Fachbereichsseminar, University Frankfurt, November 15, 1988
> FGCS'88 Conference, Tokyo, Japan, December 2, 1988
> Oberwolfach Workshop on Efficient Algorithms, September 18, 1989

"Basic Parallel Algorithms in Graph Theory" at:

> Advanced Seminar on Computational Graph Theory, Bernried, May 3, 1989

"Spanning Trees in Weighted Graphs" at:

> Oberwolfach Workshop on Complexity Theory, November 20, 1990
> Oberwolfach Workshop on Efficient Algorithms, August 6, 1991

"Embedding Complete Binary Trees into Faulty Hypercubes" at:

> Dagstuhl Workshop on Parallel and Distributed Algorithms, March 6, 1992

"Managing Divide-and-Conquer Efficiently on the Hypercube" at:

> Colloquium, IBM Almaden, May 1, 1992
> Colloquium, Department of Computer Science, Stanford University, May 1, 1992

"Optimal Implementation of Generic Divide-and-Conquer on the Hypercube and Related Networks" at:

> Heinz-Nixdorf-Symposium, University Paderborn, November 13, 1992

"Divide-and-Conquer Algorithms on the Hypercube" at:

Colloquium, Department of Computer Sciences, University of Texas at Austin, January 28, 1993
Colloquium, Department of Computer Science, University of North Texas at Denton, January 29, 1993
Colloquium, Max-Planck-Institute, Saarbrücken, February 18, 1993
Colloquium, Department of Computer Science, Carnegie-Mellon-University, Pittsburgh, March 8, 1993
Colloquium, Department of Computer Science, Johns-Hopkins-University, Baltimore, March 9, 1993
Supercomputing Technologies Seminar, LCS, MIT, Cambridge, March 10, 1993
Colloquium, Department of Computer Science, Brown University, Providence, March 12, 1993

"Die versteckte Komplexität bei Petri-Netzen" at:

Festkolloquium, Institut für Informatik, TU München, May 21, 1992

"Efficient Algorithms on the Hypercube — Bottlenecks and Paradigms" at:

6. Parallelitätstag (invited talk), Universität Düsseldorf, June 3, 1993

"Scheduling Interval Orders in Parallel" at:

PACO Seminar, Stanford University, April 24, 1987
WG'87, Graphtheoretic Concepts in Computer Science, Kloster Banz, FRG, July 1, 1987
Dagstuhl Workshop on Parallel and Distributed Algorithms, September 14, 1993
25. Workshop on Complexity Theory, Data Structures and Efficient Algorithms, Universität Dortmund, March 21, 1995

"Optimal Tree Contraction on the Hypercube and Related Networks" at:

DIMACS Workshop on Parallel Algorithms: From Solving Combinatorial Problems to Solving Grand Challenge Problems, November 19, 1993
Colloquium Department of Computer Science, University of Montréal, Montréal, May 27, 1994

"Algebraic Analysis of Parallel Process Models" at:

Dagstuhl Workshop on Parallel and Distributed Algorithms, September 11, 1995
Colloquium Department of Computer Science, Universität Stuttgart, December 19, 1995
Colloquium Department of Computer Science, Universität Paderborn, February 7, 1996

"Gröbner Bases and Space Optimal Normal Form Computation" at:

Oberwolfach Workshop on Complexity Theory, November 13, 1996
Colloquium RISC-Linz, Linz, April 13, 2000

"Applying Hilbert's Tenth Problem in Complexity" at:

Colloquium on Computability, Complexity, and Logic, Universität Stuttgart, December 6, 1996

"Some Complexity Results for Polynomial Ideals" at:

International Conference on Foundations of Computational Mathematics, IMPA, Rio de Janeiro, January 11, 1997

"Polynomideale — Neue Algorithmen, ihre Komplexität und Anwendungen" at:

Colloquium, ETH Zürich, January 27, 1997
GK-Colloquium "Algorithmische Diskrete Mathematik", Berlin, June 2, 1997
Mathematics Department Colloquium, Hannover, June 3, 1997

"Informatik in der heutigen Zeit" at:

Gymnasien Fürstenfeldbruck, March 5, 1997

"Parallele Algorithmen für Scheduling und Lastbalancierung" at:

Colloquium AIFB Karlsruhe, May 30, 1997
GK-Colloquium University of Kiel, May 20, 1998

"Parallel Algorithms for Scheduling and Load Balancing" at:

Department Colloquium Universität Würzburg, June 3, 1996
Dagstuhl Workshop on Parallel Scheduling, July 17, 1997

"On-line Scheduling of Parallel Jobs" at:

 Colloquium, Department of Computer Science, Saarbrücken, July 9, 1999
 Dagstuhl Workshop on Scheduling in Computer and Manufacturing Systems, October 28, 1999
 ADiMo Workshop, Technische Universität München, March 30, 2000

"Efficient Embeddings of Treelike Graphs into Hypercubes" at:

 Dagstuhl Workshop on Parallel and Distributed Algorithms, September 11, 1997

"Algorithmen für polynomielle Gleichungssysteme" at:

 Trier Seminar on "Was ist ein guter Algorithmus?", October 9, 1997

"The Equivalence Problem for Commutative Semigroups" at:

 Dagstuhl Workshop on Real Computation and Complexity, June 17, 1998

"Neue Komplexitätsresultate für Polynomideale" at:

 DFG-SPP Colloquium "Effiziente Algorithmen für diskrete Probleme und ihre Anwendungen", Köln, November 26, 1998

"Ersetzungssysteme und ihre Modellierung durch Polynomideale" at:

 RISC-Linz SFB-Kolloquium, J. Kepler University Linz, April 12, 2000

"Polynomial Ideal Power — A Survey" at:

 20th STACS (Invited Talk), Berlin, March 1, 2003

"Parallel Computation — Algorithms and Models" at:

 Microsoft Conference on Technologies in Theory and Practice, Tomsk Polytechnic University (Invited Talk), Tomsk, March 17, 2009

"Petri Nets and Polynomial Ideals — Two Powerful Models and Their Relationship" at:

 Tomsk Polytechnic University (Invited Talk), Tomsk, March 27, 2009

"Von Petrinetzen zu Polynomen: Modellierung, Algorithmen und Komplexität" at:

 Bayerische Akademie der Wissenschaften, Munich, February 5, 2010

"From Petri Nets to Polynomials: Modeling, Algorithms, and Complexity" at:

 12th CASC (Invited Talk), Tsakhkadzor, September 9, 2010
 Summer School Deutsche Studienstftung, August 20, 2010

"New Degree Bounds and Algorithms for (some classes of) Polynomial Ideals
Bi-National DFG Workshop on Discrete Structures and Algorithms, Bonn, June 5, 2010 at:

"From Petri Nets to Polynomials and Back: Models, Their Complexity, and New Algorithms" at:

 Colloquium, ETH Zürich, November 15, 2010
 Colloquium, MIET (Zelenograd/Moscow), March 23, 2011
 Colloquium, RISC (U. Linz, Hagenberg, Austria), April 13, 2011
 Workshop GBReLA (RISC, Hagenberg, Austria), September 4, 2013

"Pattern Matching — Index Structures for Huge Texts"
Colloquium, MIET (Zelenograd/Moscow), March 24, 2011 at:

"Experience Talk: From a Theoretician's Point of View"
7th Workshop on Information Systems and Services Sciences, TUM (Herrsching), April 19, 2011
at:

15. Supervised Ph.D.'s:

1. T.H. Spencer: *Weighted matching algorithms* (1984); Principal Engineer at Synopsys Inc.

2. R.M. King: *Knowledge-based transformational synthesis of efficient structures for concurrent computation* (1985); Oracle

3. R. Anderson: *The complexity of parallel algorithms* (1985); Faculty at University of Washington, Seattle

4. P.P. Hochschild: *Resource-efficient parallel algorithms* (1985); Research scientist at IBM Yorktown Heights (1985)

5. D.P. Helmbold: *Parallel scheduling algorithms* (1986); Faculty at University of California at Santa Cruz (1986)

6. C. Greg Plaxton: *Efficient computation on sparse interconnection networks* (1989); Faculty at University of Texas at Austin (1997)

7. Ashok Subramanian: *The computational complexity of the circuit value and network stability problems* (1990). India, private

8. Arif Merchant: *Analytical models for performance evaluation of Banyan networks*. Storage System Program, HP Labs (1991).

9. Alexander Wang: *Fault-Tolerant Computation on Hypercubes*. Arbitrade (1992).

10. Katja Lenz: *Die Komplexität Boolescher Funktionen in Schaltkreisen über der Basis $\{\wedge, \oplus\}$*. Fachhochschule Darmstadt (1993).

11. Ralph Werchner: *Divide-and-Conquer Algorithmen auf dem Hyperwürfel*. Software designer, Frankfurt/Main (1994).

12. Volker Heun: *Efficient Embeddings of Treelike Graphs into Hypercubes*. Technische Universität München (1996).

13. Ulla Koppenhagen: *Optimal Algorithms for Binomial Ideals and Commutative Semigroups*. BMW (1997).

14. Klaus Kühnle: *Space Optimal Computation of Normal Forms of Polynomials*. SAP (1998).

15. Hans Stadtherr: *Work Efficient Parallel Scheduling Algorithms*. Software industry (1998).

16. Thomas Erlebach: *Scheduling Connections in Fast Networks*. Technische Universität München (1999)

17. Stefan Bischof: *Efficient Algorithms for On-line Scheduling and Load Distribution in Parallel Systems* (1999)

18. Tom Friedetzky: *Randomized Load Balancing* (2002); Simon Fraser University (2000), Durham University (2004)

19. Jens Ernst: *Similarity-based clustering algorithms for gene expression problems* (2003); TU München (2003)

20. Klaus Holzapfel: *Density-based clustering in large-scale networks* (27.02.2006); sd&m (2004)

21. Thomas Bayer: *Intersections of Polynomial Rings and Modules with Applications* (2006). SAP (2004)

22. Moritz Maaß: *Analysis of Algorithms and Data Structures for Text Indexing* (2006)

23. Hanjo Täubig: *Fast structure searching for computational proteomics* (2007); TU München (2006)

24. Stefan Pfingstl: *Dublettenerkennung — Ähnlichkeitsmaße und Verfahren* (2007); Siltronic/Burghausen (2007)

25. Johannes Nowak: *Algorithmic Methods for Lowest Common Ancestor Problems in Directed Acyclic Graphs* (6.11.2009)

26. Matthias Baumgart: *Ranking and Ordering Problems of Spanning Trees* (26.11.2009)

27. Dmytro Chibisov: *Design of Algorithms for Motion Planning and Motion Prediction* (18.12.2009)

28. Stefan Eckhardt: *Analyse von Tries und Spannbäumen* (15.01.2010)

29. Sandeep Sadanandan: *Counting in the Jacobian of Hyperelliptic curves (in the light of genus 2 curves for cryptography)* (29.10.2010)

30. Stephan Ritscher: *Degree Bounds and Complexity of Gröbner Bases of Important Classes of Polynomial Ideals* (18.10.2012)

31. Jeremias Weihmann: *Generalized Petri Nets: Algorithms and Complexity* (23.03.2015)

32. Johannes Krugel: *Approximate Pattern Matching with Index Structures* (16.02.2016)

16. Mentored Habilitations:

33. Michal Mnuk: *Degrees of Complexity in Polynomial Ideals* (30.11.2006); private industry

34. Sven Kosub: *Computational analysis of complex systems: Discrete foundations, algorithms, and the Internet* (10.06.2009); Uni Konstanz

35. Hanjo Täubig: *Inequalities for Matrix Powers and the Number of Walks in Graphs* (24.03.2015)