Günter Rote
Institut für Informatik
Freie Universität Berlin

September 2006

CURRICULUM VITAE

Personal Data
Born in Klagenfurt, Austria, on May 23, 1960,
married to Barbara Rothe, née Müller,
two children,
Austrian citizen.

Academic Studies

1978–1985	"Technische Mathematik" at the Technische Universität Graz.
1985	graduation as Diplom-Ingenieur at the Technische Universität Graz.
1988	Ph. D. (Doktor der technischen Wissenschaften, Dr. techn.) from the Technische Universität Graz.
1992	Habilitation in mathematics at the Technische Universität Graz, technisch-naturwissenschaftliche Fakultät.

Professional Career
October 1982 – June 1983: Studienassistent (teaching assistant) at the Institut für Mathematik of the Technische Universität Graz.
April 1985 – March 1999: Universitätsassistent at the Institut für Mathematik of the Technische Universität Graz (Prof. Dr. R. E. Burkard); since October 1992 in the rank of an Universitätsdozent.
September 1988 – August 1989: On leave as Wissenschaftlicher Assistent at the Fachbereich Mathematik of the Freie Universität Berlin (Prof. Dr. E. Welzl).
March – August 1990: On leave as Visiting Assistant Professor at the Department of Combinatorics and Optimization, University of Waterloo, Canada (supported by an Erwin-Schrödiger stipend of the Austrian Fonds zur Förderung der Wissenschaftlichen Forschung).
since April 1999: Professor of Theoretical Computer Science at the Freie Universität Berlin.

Award
1985: Prize of the Österreichische Gesellschaft für Operations Research (Austrian Operations Research Society) (ÖGOR) for Master's theses in the area of Theoretical Operations Research.

Teaching

At the Technische Universität Graz:

WS 1987/88	"Diskrete Strukturen"
SS 1988	"Entwurf und Analyse von Algorithmen" (Design and Analysis of Algorithms)
WS 1991/92	"Ausgewählte Kapitel der Optimierung 1" (Selected topics in optimization 1)
WS 1992/93	"Ausgewählte Kapitel der Unternehmensforschung" (Selected topics in operations research)
SS 1993	"Lineare Algebra und analytische Geometrie 2"
SS 1994	"Graphentheorie"
SS 1995	"Mathematische Optimierung"
WS 1995/96	"Kombinatorische Optimierung"
SS 1996	"Mathematische Modelle in den Wirtschaftswissenschaften" (Mathematical models in economics)
WS 1996/97	"Kombinatorische Optimierung"
SS 1997	"Ausgewählte Kapitel der Geometrie" (Selected topics from geometry)
WS 1997/98	"Kombinatorische Optimierung"
SS 1998	"Mathematische Optimierung"

At the Freie Universität Berlin:

WS 1988/89	"Algorithmen und Programmieren III"
WS 1988/89	"Wegeprobleme in Graphen" (Path problems in graphs)
SS 1989	"Entwurf und Analyse von Algorithmen" (Design and analysis of algorithms)
WS 1999/2000	"Algorithmen und Programmieren III"
	"Lineare Optimierung"
SS 2000	Block course "Geometric algorithms for the analysis of shapes and patterns"

	“Computergrafik”
	Introductory seminar “Algorithmen zur Computer-Arithmetik”
	Software-Project
WS 2000/2001	“Entwurf und Analyse von Algorithmen” (Design and analysis of algorithms)
	Project “Computergrafik”
	Introductory seminar “Algorithmen zur Computer-Arithmetik”
SS 2001	“Graphentheorie”
	“Grundlagen der theoretischen Informatik” (Foundations of Theoretical Computer Science)
	Seminar “Rekonstruktion und Vereinfachung von Oberflächen” (Reconstruction and simplification of surfaces)
WS 2001/2002	“Entwurf und Analyse von Algorithmen” (Design and analysis of algorithms)
	“Graphentheoretische Algorithmen”
SS 2002	“Kombinatorische Optimierung”
	Seminar “Graphenalgorithmen”
SS 2003	“Datenkompression”
WS 2003/2004	“Algorithmen und Programmieren III”
	Project “Datenkompression”
	Project “Visualisierung von Graphenalgorithmen”

Editing and Reviewing of Journals

Editor of *Computing*, 2002–2004.
Editor of *Computational Geometry, Theory and Applications*, starting in 2007.

Referee reports for the following journals:

Acta Informatica
Aequationes Mathematicae
Algorithmica
Applied Mathematics Letters
Central European Journal for Operations Research and Economics
Computers and Artificial Intelligence (ЭВМ и искусственный интеллект, počítače a umelá inteligencia)
Computing
Computational Geometry: Theory and Applications
Discrete and Computational Geometry
Discrete Applied Mathematics
Discrete Mathematics
Discrete Optimization
Electronic Journal of Combinatorics
European Journal of Operational Research
Geometriae Dedicata
Geometry and Topology
IEEE Transactions on Acoustics, Speech, and Signal Processing
IEEE Transactions on Computers
IEEE Transactions on Pattern Analysis and Machine Intelligence
Information Processing Letters
INFORMS Journal on Computing
International Transactions in Operational Research
Journal of Combinatorial Optimization
Journal of Combinatorial Theory
Journal of Parallel and Distributed Computing
Journal of the Association for Computing Machinery
Mathematical Methods of Operations Research
Mathematical Programming
Mathematical Systems Theory
Networks
optimization
Operations Research
ORSA Journal on Computing
SIAM Journal on Discrete Mathematics
SIAM Journal on Optimization

Theoretical Computer Science
Zeitschrift für Operations Research (ZOR)

Member of Program Committees:

9th Annual Symposium on Computational Geometry, San Diego, May 18–21, 1993.
OR'94, International Conference on Operations Research, Berlin, August 30 – September 2, 1994.
12th Annual Symposium on Computational Geometry, Philadelphia, May 24–26, 1996.
13th International Symposium on Computational Geometry, Nice, France, June 4–6, 1997.
COCOON '99, 5th Annual International Computing and Combinatorics Conference, Tokyo, July 26–28, 1999.
ICALP'2000, 27th Annual International Colloquium on Automata, Languages and Programming, Geneva, July 9–15, 2000.
STACS'2001, 18th Annual Symposium on Theoretical Aspects of Computer Science, Dresden, February 15–17, 2001.
18th Annual Symposium on Computational Geometry (SoCG), Barcelona, June 5–7, 2002.
ESA 2002, 10th Annual European Symposium on Algorithms, Rome, September 17–21, 2002.
STOC 2003, 35th Annual ACM Symposium on Theory of Computing, San Diego, June 9–11, 2003.
ISAAC2003, 14th Annual International Symposium on Algorithms and Computation, Kyoto, December 15–17, 2003.
SODA 2004, 15th ACM-SIAM Symposium on Discrete Algorithms, New Orleans, January 11–13, 2004.
21st Annual Symposium on Computational Geometry (SoCG), Pisa, June 6–8, 2005 (program committee co-chair).
4th International Conference on Origami in Science, Mathematics, and Education (4OSME), Pasadena, September 8–10, 2006.

Computational Geometry Steering Committee (chair), since 2006.

Scientific Papers

Abstracts of most papers and many papers themselves are available on the world-wide-web at `http://www.inf.fu-berlin.de/~rote/about_me/publications.html`.

1. A systolic array for the algebraic path problem (which includes the inverse of a matrix and shortest distances in a graph).
Rechenzentrum Graz, Bericht 101, 1984, 69 pages.

1a. A systolic array algorithm for the algebraic path problem.
Diplomarbeit (Master's thesis), February 1985. (Supervisor: Prof. Dr. R. E. Burkard).
(This is a corrected version of 1.)

2. A systolic array algorithm for the algebraic path problem (shortest paths; matrix inversion).
(This is a shortened and extended version of 1.)
Computing **34** (1985), 191–219, (Zentralblatt für Mathematik 546.68047 (562.68056); Mathematical Reviews #86k:68046).

3. The solution sets of extremal equations.
Rechenzentrum Graz, Bericht 104, 1985, 58 pages.

4. Minimizing the density of terminal assignments in layout design.
(coauthor: Franz Rendl)
Operations Research Letters **5** (1986), 111–118, (Zbl 626.90069, MR #87k:90103).

5. On the connection between hexagonal and unidirectional rectangular systolic arrays.
In: "VLSI Algorithms and Architectures—Aegean Workshop on Computing. Loutraki, Greece, July 1986". Proceedings of AWOC'86. Editors: F. Makedon, K. Mehlhorn, T. Papatheodorou, P. Spirakis. Lecture Notes in Computer Science 227, Springer-Verlag, 1986, pp. 70–83.

6. A parallel scheduling algorithm for minimizing the number of unscheduled jobs.
In: "Parallel Algorithms & Architectures". Proceedings of the International Workshop on Parallel Algorithms and Architectures, Centre National de Rencontres Mathématiques, Luminy, France, April 14–18, 1986. Editors: M. Cosnard, Y. Robert, P. Quinton, and M. Tchuente. North-Holland, 1986, pp. 99–108, (Zbl 639.68031).

7. Testing the necklace condition for shortest tours and optimal factors in the plane.
(coauthors: Herbert Edelsbrunner and Emo Welzl)
Theoretical Computer Science **66** (1989), 157–180, (MR #90i:90042).

7a. Testing the necklace condition for shortest tours and optimal factors in the plane.
(coauthors: Herbert Edelsbrunner and Emo Welzl)
(This is a shortened and slightly modified version of 7.)
In: "Automata, Languages, and Programming". Proceedings of the 14th International Colloquium on Automata, Languages, and Programming (ICALP), Karlsruhe, Juli 1987. Editor: T. Ottmann. Lecture Notes in Computer Science 266, Springer-Verlag, 1987, pp. 364–375, (Zbl 636.68042, MR #88k:90065).

8. The N-line traveling salesman problem.
Networks **22** (1992), 91–108, (Zbl 783.90118, MR #92k:90045).

9. Two solvable cases of the traveling salesman problem.
Ph. D. thesis, May 1988, 55 pages. (Supervisor: Prof. Dr. R. E. Burkard).
(This contains 8 and an extension of 7.)

10. Approximation of convex curves with application to the bicriterial minimum cost flow problem.
(coauthors: Bernd Fruhwirth and Rainer E. Burkard)
European Journal of Operational Research **42** (1989), 326–338, (MR #91e:90107).

11. Algorithmische Untersuchungen zu bikriteriellen kostenminimalen Flüssen in Netzwerken.
(coauthors: Rainer E. Burkard, Günther Ruhe, and Norbert Sieber)
Wissenschaftliche Zeitschrift der Technischen Hochschule Leipzig **33** (1989), 333–341, (Zbl 706.90024).

12. Computing the geodesic center of a simple polygon.
(coauthors: Richard Pollack and Micha Sharir)
Discrete and Computational Geometry **4** (1989), 611–626, (Zbl 689.68067, MR #90g:68141).

13. Approximation of convex figures by pairs of rectangles.
(coauthors: Otfried Schwarzkopf, Ulrich Fuchs, and Emo Welzl)
In: Proceedings of the 7th Annual Symposium on Theoretical Aspects of Computer Science (STACS'90), Rouen, February 1990. Lecture Notes in Computer Science 415, Springer-Verlag, 1990, pp. 240–249, (Zbl 729.68087, MR #91e:68148).

13a. Approximating a convex figure by a pair of homothetic rectangles.
(coauthors: Otfried Schwarzkopf, Ulrich Fuchs, and Emo Welzl)
(improved and extended version of 13).
Computational Geometry, Theory and Applications **10** (1998), 77–87.

14. Path problems in graphs.
In: "Computational Graph Theory". Editors: G. Tinhofer, E. Mayr, H. Noltemeier, and M. Sysło, in cooperation with R. Albrecht. Springer-Verlag, 1990.
Computing Supplementum **7** (1990), pp. 155–189, (Zbl 699.68088, MR #91m:05122).

15. Shortest polygonal lines in space.
(coauthors: Rainer E. Burkard, En-Yu Yao, and Zhong-Liang Yu)
Computing **45** (1990), 51–68, (Zbl. 722.68098, MR #91g:68157).

16. Geometric clusterings.
(coauthors: Vasilis Capoyleas and Gerhard Woeginger)
Journal of Algorithms **12** (1991), 341–356, (Zbl 734.68092, MR #92d:52033).

16a. Geometric clusterings (extended abstract).
(coauthors: Vasilis Capoyleas and Gerhard Woeginger)
In: Proceedings of the Second Canadian Conference on Computational Geometry, Ottawa, August 6–10, 1990. Editor: J. Urrutia; pp. 28–31.

17. Sandwich approximation of univariate convex functions with an application to separable convex programming.
(coauthors: Rainer E. Burkard and Horst W. Hamacher)
Naval Research Logistics **38** (1991), 911-924, (Zbl 755.90066, MR #92h:90098).

18. Flattening a rooted tree.
(coauthors: Paul Hilfinger and Eugene L. Lawler)
In: "Applied Geometry and Discrete Mathematics." The Victor Klee Festschrift. Editors: Peter Gritzmann and Bernd Sturmfels. DIMACS series in discrete mathematics and theoretical computer science, American Mathematical Society and Association for Computing Machinery, 1991; pp. 335–340, (Zbl 733.68061, MR #92i:68122).

19. Computing the minimum Hausdorff distance between two point sets on a line under translation.
Information Processing Letters **38** (1991), 123–127, (Zbl 736.68078, MR #92d:68114).

20a. Counting k-subsets and convex k-gons in the plane.
(coauthors: Gerhard Woeginger, Binhai Zhu, and Zhengyan Wang)
Information Processing Letters **38** (1991), 149–151, (Zbl 737.68084, MR #92i:68183).

20b. Counting convex k-gons in planar point sets.
(coauthor: Gerhard Woeginger)
Information Processing Letters **41** (1992), 191–194, (Zbl 751.68077, MR #93c:68108).

20c. Counting convex polygons in planar point sets.
(coauthors: Joseph S. B. Mitchell, Gopalakrishnan Sundaram, and Gerhard Woeginger)
Information Processing Letters **56** (1995), 45–49, (Zbl 875.68899).

21. Shortest paths for line segments.
(coauthors: Christian Icking, Emo Welzl, and Chee Yap)
Algorithmica **10** (1993), 182–200. (Zbl 781.68118).

22. A heuristic for decomposing traffic matrices in TDMA satellite communication.
(coauthor: Andreas Vogel)
ZOR—Methods and Models of Operations Research **38** (1993), 281–307, (Zbl 785.90069).

22a. Eine Heuristik für ein Matrizenzerlegungsproblem, das in der Telekommunikation via Satelliten auftritt (Kurzfassung).
(short and preliminary version of 22.)
ZAMM · Zeitschrift für angewandte Mathematik und Mechanik **69** (1989), T29–T31.

23. On simultaneous inner and outer approximation of shapes.
(coauthors: Rudolf Fleischer, Kurt Mehlhorn, Emo Welzl, and Chee Yap)
In: Proceedings of the Sixth Annual Symposium on Computational Geometry, Berkeley, California, June 6–8, 1990. Association for Computing Machinery, 1990; pp. 216–224.

23a. Simultaneous inner and outer approximation of shapes.
(coauthors: Rudolf Fleischer, Kurt Mehlhorn, Emo Welzl, and Chee Yap)
Algorithmica **8** (1992), 365–389, (Zbl 760.68083).
(This is a more detailed version of 23.)

24. Minimum-link paths among obstacles in the plane.
(coauthors: Joseph S. B. Mitchell and Gerhard Woeginger)
Algorithmica **8** (1992), 431–459, (Zbl 788.68144).

24a. Minimum-link paths among obstacles in the plane (extended abstract).
(coauthors: Joseph S. B. Mitchell and Gerhard Woeginger)
In: Proceedings of the Sixth Annual Symposium on Computational Geometry, Berkeley, California, June 6–8, 1990. Association for Computing Machinery, 1990; pp. 63–72.
(This is a preliminary and shortened version of 24.)

25. The convergence rate of the Sandwich algorithm for approximating convex functions.
Computing **48** (1992), 337–361, (Zbl 787.65006).

25a. The convergence rate of the Sandwich algorithm for approximating convex figures in the plane (extended abstract).
In: Proceedings of the Second Canadian Conference on Computational Geometry, Ottawa, August 6–10, 1990. Editor: J. Urrutia; pp. 287–290.

26. Finding minimum area k-gons.
(coauthors: David Eppstein, Mark Overmars, and Gerhard Woeginger)
Discrete and Computational Geometry **7** (1992), 45–58, (Zbl 746.68038, MR #92k:52026).

27. Vehicle routing in an automated warehouse: analysis and optimization.
(coauthors: Rainer E. Burkard and Bernd Fruhwirth)
Annals of Operations Research **57** (1995), 29–44, (Zbl 831.90053).

28. Degenerate convex hulls in high dimensions without extra storage (extended abstract).
In: Proceedings of the Eighth Annual Symposium on Computational Geometry, Berlin, June 10–12, 1992. Association for Computing Machinery, 1992; pp. 26–32.

29. A new metric between polygons, and how to compute it (extended abstract).
In: "Automata, Languages and Programming". Proceedings of the 19th International Colloquium on Automata, Languages, and Programming (ICALP 92), Wien, Austria, July 1992. Editor: W. Kuich. Lecture Notes in Computer Science 623, Springer-Verlag, 1992, pp. 404–415.

30. Sequences with subword complexity $2n$.
Journal of Number Theory **46** (1993), 196–213, (Zbl 804.11023).

31. On the union of fat wedges and separating a collection of segments by a line.
(coauthors: Alon Efrat and Micha Sharir)
Computational Geometry: Theory and Applications **3** (1993), 277–288, (Zbl 801.68167).

31a. On the union of fat wedges and separating a collection of segments by a line.
(coauthors: Alon Efrat and Micha Sharir)
In: Proceedings of the Fifth Canadian Conference on Computational Geometry, Waterloo, August 5–9, 1993. Editor: A. Lubiw, J. Urrutia; pp. 115–120.

32. Maintaining the approximate width of a set of points in the plane (extended abstract).
(coauthors: Christian Schwarz and Jack Snoeyink)
In: Proceedings of the Fifth Canadian Conference on Computational Geometry, Waterloo, August 5–9, 1993. Editor: A. Lubiw, J. Urrutia; pp. 258–263.

33. The convex-hull-and-line traveling salesman problem: A solvable case.
(coauthors: Vladimir G. Deineko and René van Dal)
Information Processing Letters **51** (1994), 141–148, (Zbl 806.90121).

34. Curves with increasing chords.
Mathematical Proceedings of the Cambridge Philosophical Society **115** (1994), 1–12, (Zbl 802.51023).

35. Spherical dispersion with an application to polygonal approximation of curves.
(coauthor: Robert Franz Tichy)
Anzeiger der Österreichischen Akademie der Wissenschaften, Mathematisch-naturwissenschaftliche Klasse, Abteilung II **132** (1995), 3–10, (Zbl 865.11054).

36. Quasi-Monte-Carlo methods and the dispersion of point sequences.
(coauthor: Robert Franz Tichy)
Mathematical and Computer Modelling **23** (1996), 9–23, (Zbl 855.11041).

37. Three-clustering of points in the plane.
(coauthor: Johannes Hagauer)
In: "Algorithms—ESA '93", Proc. First Annual European Symposium on Algorithms, Bad Honnef, Germany, September 30 – October 2, 1993. Editor: Thomas Lengauer. Lecture Notes in Computer Science 726, Springer-Verlag, 1993, pp. 192–199.

37a. Three-clustering of points in the plane.
(coauthor: Johannes Hagauer)
Computational Geometry, Theory and Applications **8** (1997), 87–95; (slightly extended version of 37).

38. Webs, iteration groups, and equivalent changes in probabilities.
(coauthors: János Aczél and Jens Schwaiger)
Quarterly of Applied Mathematics **54** (1996), 475–499, (Zbl 859.39010).

38a. Webs, iteration groups, and equivalent changes in probabilities.
(coauthors: János Aczél and Jens Schwaiger)
In: "VIII. Mathematikertreffen Zagreb-Graz", Universität Graz, 9.–11. 12. 1993. Editors: Detlef Gronau and Ludwig Reich. Grazer Mathematische Berichte 323, 1994, pp. 1–20, (Zbl 816.39003).

38b. Equivalence of changes in proportions at crossroads of mathematical theories.
(coauthors: János Aczél and Jens Schwaiger)
In: "Actes 5^{e} Conférence Internationale/Proc. Fifth International Conference IPMU, Traitement d'information et gestion d'incertitutes dans les systèmes à base de connaissances/Information Processing and Management of Incertainty in Knowledge-Based Systems, Paris, 4–8 juillet/July, 1994, Cité Internationale Universitaire", Paris 1994, Vol. 1, pp. 569–570.

38c. Equivalence of changes in proportions at crossroads of mathematical theories.
(coauthors: János Aczél and Jens Schwaiger)
In: The Ordered Weighted Averaging Operators—Theory and Applications. Editors: Ronald R. Yager and Janusz Kacprzyk, Elsevier, Dordrecht 1997, 36–38.

39. Finding a shortest vector in a two-dimensional lattice modulo m.
Theoretical Computer Science **172** (1997), 303–308.

40. Matching shapes with a reference point.
(coauthors: Helmut Alt and Oswin Aichholzer)
In: Proceedings of the Tenth Annual Symposium on Computational Geometry, Stony Brook, New York, June 6–8, 1994. Association for Computing Machinery, 1994, pp. 85–92.

40a. Matching shapes with a reference point.
(coauthors: Oswin Aichholzer and Helmut Alt)
International Journal on Computational Geometry and Applications **7** (1997), 349–363, (Zbl 883.68118).

41. The quadratic assignment problem with a monotone Anti-Monge and a symmetric Toeplitz matrix: Easy and hard cases.
(coauthors: Rainer E. Burkard, Eranda Çela, and Gerhard J. Woeginger)
Mathematical Programming **82** (1998), 125–158.

41a. The quadratic assignment problem with a monotone Anti-Monge and a symmetric Toeplitz matrix: Easy and hard cases.
(coauthors: Rainer E. Burkard, Eranda Çela, and Gerhard J. Woeginger)
(This is an extended abstract of 41.)
In: "Integer Programming and Combinatorial Optimization". Proceedings of the 5th International IPCO Conference, Vancouver, Canada, June 1996. Editors: W. H. Cunningham, S. T. McCormick, and M. Queyranne. Lecture Notes in Computer Science 1084, Springer-Verlag, 1996, pp. 204–218.

42. A dynamic programming algorithm for constructing optimal prefix-free codes for unequal letter costs.
(coauthor: Mordecai J. Golin)
IEEE Transactions on Information Theory **44** (1998), 1770–1781.

42a. A dynamic programming algorithm for constructing optimal prefix-free codes for unequal letter costs.
(coauthor: Mordecai J. Golin)
(This is an extended abstract of 42.)
In: "Automata, Languages and Programming". Proceedings of the 22nd International Colloquium on Automata, Languages, and Programming (ICALP 95), Szeged, Hungary, July 1995. Editor: F. Gécseg. Lecture Notes in Computer Science 944, Springer-Verlag, 1995, pp. 256–267.

43. A simple linear time greedy triangulation algorithm for uniformly distributed points.
(coauthors: Robert L. Scot Drysdale and Oswin Aichholzer)
Bericht IIG-408, February 1995, 16 pages.

44. Triangulations intersect nicely.
(coauthors: Oswin Aichholzer, Franz Aurenhammer, Siu-Wing Cheng, Naoki Katoh, Michael Taschwer, and Yin-Feng Xu)
Discrete and Computational Geometry **16** (1996), 339–359, (Zbl 857.68110).

44a. Triangulations intersect nicely.
(coauthors: Oswin Aichholzer, Franz Aurenhammer, and Michael Taschwer)
In: Proceedings of the Eleventh Annual Symposium on Computational Geometry, Vancouver, June 5–7, 1995. Association for Computing Machinery, 1995; pp. 220–229.
This is an extended abstract of 44.

45. On-line q-adic covering by the method of the n-th segment and its application to on-line covering by cubes.
(coauthors: Marek Lassak, Janusz Januszewski, and Gerhard Woeginger)
Beiträge zur Algebra und Geometrie—Contributions to Algebra and Geometry **37** (no. 1) (1996), 51–65, (Zbl 863.52010).

45a. Solution to problem 74.
(coauthors: Marek Lassak, Janusz Januszewski, and Gerhard Woeginger)
Mathematische Semesterberichte **43** (1996), 94–100.
(This paper contains a different proof of a special case of the main result of 45, extended by a lower-bound construction.)

46. Matching convex shapes with respect to the symmetric difference.
(coauthors: Helmut Alt, Ulrich Fuchs, and Gerald Weber)
In: "Algorithms—ESA '96", Proc. Fourth Annual European Symposium on Algorithms, Barcelona, September 25–27, 1996. Editors: Josep Díaz and María Serna. Lecture Notes in Computer Science 1136, Springer-Verlag, 1996, pp. 320–333.

46a. Matching convex shapes with respect to the symmetric difference.
(coauthors: Helmut Alt, Ulrich Fuchs, and Gerald Weber)
Algorithmica **21** (1998), 89–103.

47. Optimal logistics for expeditions—the jeep problem with complete refilling.
(coauthor: Guochuan Zhang)
SFB-Bericht Nr. 71, June 1996, 34 pages.

48. Constant-level greedy triangulations approximate the MWT well.
(coauthors: Oswin Aichholzer, Franz Aurenhammer, and Yin-Feng Xu)
Journal of Combinatorial Optimization **2** (1999), 361–369.

48a. Constant-level greedy triangulations approximate the MWT well.
(coauthors: Oswin Aichholzer, Franz Aurenhammer, and Yin-Feng Xu)
In: Proceedings of the Second International Symposium on Operations Research and its Applications (ISORA'96), Guilin, China, December 11–13, 1996. Editors: Ding-Zhu Du, Xiang-Sun Zhang, and Kan Cheng. Lecture Notes in Operations Research 2, World Publishing Corporation, Beijing 1996, pp. 309–318.

49. A central limit theorem for convex chains in the square.
(coauthors: Imre Bárány, William Steiger, and Cun-Hui Zhang)
Discrete and Computational Geometry **23** (2000), 35–50.

50. A visibility representation for graphs in three dimensions.
(coauthors: Prosenjit Bose, Hazel Everett, Sándor Fekete, Michael E. Houle, Anna Lubiw, Henk Meijer, Kathleen Romanik, Tom Shermer, Sue Whitesides, and Christian Zelle)
Journal of Graph Algorithms and Applications **2**, no. 3 (1998), 1–16.

51. On the distribution of sums of vectors in general position.
(coauthor: Jerrold R. Griggs)
In: "Contemporary Trends in Discrete Mathematics." Editors: Ronald L. Graham, Jan Kratochvíl, Jaroslav Nešetřil, and Fred S. Roberts. DIMACS series in discrete mathematics and theoretical computer science, American Mathematical Society, 1999; pp. 139–142.

52. Generalized self-approaching curves.
(coauthors: Oswin Aichholzer, Franz Aurenhammer, Christian Icking, Rolf Klein, and Elmar Langetepe)
In: "Algorithms and Computation—Ninth Annual International Symposium on Algorithms and Computation. Taejon, Korea, December 1998". Proceedings of ISAAC'98. Editors: Kyung-Yong Chwa and Oscar H. Ibarra. Lecture Notes in Computer Science 1533, Springer-Verlag, 1998, pp. 317–327.

52a. Generalized self-approaching curves.
(coauthors: Oswin Aichholzer, Franz Aurenhammer, Christian Icking, Rolf Klein, and Elmar Langetepe)
Discrete Applied Mathematics **109** (2001), 3–24.

53. Time complexity and linear-time approximation of the ancient two machine flow shop.
(coauthor: Gerhard J. Woeginger)
Journal of Scheduling **1** (1998), 149–155.

54. Reachability of fuzzy matrix period.
(coauthor: Martin Gavalec)
Tatra Mountains Mathematical Publications **16** (1999), 61–79.

55. The obnoxious center problem on a tree.
(coauthors: Rainer E. Burkard, Helidon Dollani, and Yixun Lin)
SIAM Journal on Discrete Mathematics **14** (2001), 498–509.

56. Upper bounds on the maximal number of facets of 0/1-polytopes.
(coauthors: Tamás Fleiner and Volker Kaibel)
European Journal of Combinatorics **21** (2000), 121–130.

57. Minimizing the number of tardy jobs on a single machine with batch setup times.
(coauthor: Gerhard J. Woeginger)
Acta Cybernetica **13** (1998), 423–429.

58. Division-free algorithms for the determinant and the Pfaffian: algebraic and combinatorial approaches.
In: "Computational Discrete Mathematics." Editor: Helmut Alt. Lecture Notes in Computer Science 2122, Springer-Verlag, 2001, pp. 119–135.

59. Straightening polygonal arcs and convexifying polygonal cycles.
(coauthors: Robert Connelly and Erik D. Demaine)
In: Proceedings of the 41st Annual Symposium on Foundations of Computer Science, Redondo Beach, California, (FOCS), November 12–14, 2000. IEEE Computer Society Press, 2000, pp. 432–442.

59a. Straightening polygonal arcs and convexifying polygonal cycles.
(coauthors: Robert Connelly and Erik D. Demaine)
Discrete and Computational Geometry **30** (2003) 205–239.
(This is a more detailed version of 59.)

59b. Straightening polygonal arcs and convexifying polygonal cycles.
(coauthors: Robert Connelly and Erik D. Demaine)
Bericht B 02-02, February 2002, 49 pages.
(This is a version of 59a expanded by an appendix with supplementary proofs.)

60. Fast reduction of ternary quadratic forms.
(coauthor: Friedrich Eisenbrand)
In: Cryptography and Lattices —International Conference, CaLC 2001, Providence, Rhode Island, March 29–30, 2001, Revised Papers. Editor: Joseph H. Silverman. Lecture Notes in Computer Science 2146, Springer-Verlag, 2001, pp. 32–44.

61. Fast 2-variable integer programming.
(coauthor: Friedrich Eisenbrand)
In: IPCO 2001—Proceedings of the 8th Conference on Integer Programming and Combinatorial Optimization, Utrecht, June 13–15, 2001. Editors: K. Aardal, B. Gerards. Lecture Notes in Computer Science 2081, Springer-Verlag, 2001, pp. 78–89.
62. Triangles of extremal area or perimeter in a finite planar point set.
(coauthors: Peter Braß and Konrad J. Swanepoel)
Discrete and Computational Geometry **26** (2001), 51–58.
63. Counting triangulations and pseudo-triangulations of wheels.
(coauthors: Dana Randall, Francisco Santos, and Jack Snoeyink)
In: Proceedings of the 13th Canadian Conference on Computational Geometry, Waterloo, August 6–10, 2001. Editor: T. Biedl; pp. 149–152.
64. Expansive motions and the polytope of pointed pseudo-triangulations.
(coauthors: Francisco Santos and Ileana Streinu)
In: Discrete and Computational Geometry—The Goodman-Pollack Festschrift. Editors: Boris Aronov, Saugata Basu, János Pach, and Micha Sharir, Algorithms and Combinatorics, **25**, Springer Verlag, Berlin, 2003, pp. 699–736, arXiv:math.CO/0206027.
65. Infinitesimally locked self-touching linkages with applications to locked trees.
(coauthors: Robert Connelly and Erik D. Demaine)
in: "Physical Knots: Knotting, Linking, and Folding Geometric Objects in $\mathbb{R}^3$." Editors: Jorge Alberto Calvo, Kenneth C. Millett, and Eric J. Rawdon. Contemporary Mathematics 304, American Mathematical Society 2002, pp. 287–311.
66. Toward optimal diffusion matrices.
(coauthors: Robert Elsässer, Burkhard Monien, and Stefan Schamberger)
In: "International Parallel and Distributed Processing Symposium." IPDPS 2002, Proceedings. 15–19 April 2002, Fort Lauderdale, California. IEEE Computer Society Press 2002;
66a. Toward optimal diffusion matrices.
(coauthors: Robert Elsässer, Burkhard Monien, and Stefan Schamberger)
Technical report ALCOMFT-TR-02-98, May 2002, 8 pages.
67. Covering shapes by ellipses.
(coauthors: Alon Efrat, Franz Hoffmann, Christian Knauer, Klaus Kriegel, and Carola Wenk)
In: Proceedings of the 13th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), San Francisco, January 2002, pp. 453–454.
67a. Covering with ellipses.
(coauthors: Alon Efrat, Franz Hoffmann, Christian Knauer, Klaus Kriegel, and Carola Wenk)
Algorithmica **38** (2003), 145–160.
68. On constrained minimum pseudotriangulations.
(coauthors: Cao An Wang, Lusheng Wang, and Yinfeng Xu)
In: "Computing and Combinatorics". Proceedings of the 9th International Computing and Combinatorics Conference (COCOON 2003), Big Sky, Montana, USA, July 2003. Editors: Tandy Warnow and Binhai Zhu. Lecture Notes in Computer Science 2697, Springer-Verlag, 2003, pp. 445–454.
69. Matching planar maps.
(coauthors: Helmut Alt, Alon Efrat, and Carola Wenk)
In: Proceedings of the 14th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), Baltimore, January 12–14, 2003. pp. 589–598.
69a. Matching planar maps.
(coauthors: Helmut Alt, Alon Efrat, and Carola Wenk)
Journal of Algorithms **49** (2003), 262–283.
69b. Finding a curve in a map (Video).
(coauthors: Carola Wenk, Helmut Alt, Alon Efrat, and Lingeshwaran Palaniappan)
in: Video and Multimedia Review of Computational Geometry, Proceedings of the Nineteenth Annual Symposium on Computational Geometry, San Diego, June 8–10, 2003. Association for Computing Machinery, 2003, pp. 384–385.
70. Pursuit-evasion with imprecise target location.
In: Proceedings of the 14th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), Baltimore, January 12–14, 2003. pp. 747–753.
71. Crossing the bridge at night.
EATCS Bulletin (Bulletin of the European Association for Theoretical Computer Science), No. **78**, October 2002, 241–246.

72. Incremental constructions con BRIO.
(coauthors: Nina Amenta and Sunghee Choi)
in: Proceedings of the Nineteenth Annual Symposium on Computational Geometry, San Diego, June 8–10, 2003. Association for Computing Machinery, 2003, pp. 211–219.

73. The complexity of (un)folding.
(coauthors: Helmut Alt, Christian Knauer, and Sue Whitesides)
in: Proceedings of the Nineteenth Annual Symposium on Computational Geometry, San Diego, June 8–10, 2003. Association for Computing Machinery, 2003, pp. 164–170.

73a. The complexity of unfolding.
(coauthors: Helmut Alt, Christian Knauer, and Sue Whitesides)
In: "Towards a Theory of Geometric Graphs". Editor: János Pach, American Mathematical Society, 2004, pp. 1–13.

74. Planar minimally rigid graphs and pseudo-triangulations.
(coauthors: Ruth Haas, David Orden, Francisco Santos, Brigitte Servatius, Herman Servatius, Diane Souvaine, Ileana Streinu, and Walter Whiteley)
in: Proceedings of the Nineteenth Annual Symposium on Computational Geometry, San Diego, June 8–10, 2003. Association for Computing Machinery, 2003, pp. 154–163.

74a. Planar minimally rigid graphs and pseudo-triangulations.
(coauthors: Ruth Haas, David Orden, Francisco Santos, Brigitte Servatius, Herman Servatius, Diane Souvaine, Ileana Streinu, and Walter Whiteley)
Computational Geometry, Theory and Applications **31** (2005), 31–61; arXiv:math.CO/0307347. (This is an extended version of parts of the results of 74.)

75. Non-crossing frameworks with non-crossing reciprocals.
(coauthors: David Orden, Francisco Santos, Brigitte Servatius, Herman Servatius, and Walter Whiteley)
Discrete and Computational Geometry **32** (2004), 567–600. (Special issue in honor of Lou Billera), arXiv:math.MG/0309156

76. The zigzag path of a pseudo-triangulation.
(coauthors: Oswin Aichholzer, Bettina Speckmann, and Ileana Streinu)
In: "Algorithms and Data Structures". Proceedings of the 8th International Workshop on Algorithms and Data Structures (WADS 2003), Ottawa, July 2003. Editors: Frank Dehne, Joerg-Rüdiger Sack, and Michiel Smid. Lecture Notes in Computer Science 2748, Springer-Verlag, 2003, pp. 377–388.

77. Simple and optimal output-sensitive construction of contour trees using monotone paths.
(coauthors: Yi-Jen Chiang, Tobias Lenz, and Xiang Lu)
Computational Geometry, Theory and Applications **30** (2005), 165–195.

78. Computing the Fréchet distance between piecewise smooth curves.
ECG-TR-241108-01, May 2003, 13 pages.

78a. Computing the Fréchet distance between piecewise smooth curves.
In: Abstracts of the 20th European Workshop on Computational Geometry, Seville, March 2004, pp. 147–150.

78b. Computing the Fréchet distance between piecewise smooth curves.
13 pages, to appear in *Computational Geometry, Theory and Applications* (2006).

79. Planar embeddings of graphs with specified edge lengths.
(coauthors: Sergio Cabello and Erik D. Demaine)
In: "Graph Drawing". GD 2003, Proceedings of the 11th International Symposium on Graph Drawing, Perugia, September 2003, Revised Papers. Editor: Giuseppe Liotta. Lecture Notes in Computer Science, 2912, Springer-Verlag, 2004, pp. 283–294.

80. On the Fréchet distance of a set of curves.
(coauthor: Adrian Dumitrescu)
In: Proceedings of the 16th Canadian Conference on Computational Geometry (CCCG'04), Montreal, August 9–11, 2004, pp. 162–165.

81. Improved lower bound on the geometric dilation of point sets.
(coauthors: Adrian Dumitrescu and Ansgar Grüne)
In: Abstracts of the 21st European Workshop on Computational Geometry, Eindhoven, March 2005, pp. 37–40.

81a. On geometric dilation and halving chords.
(coauthors: Adrian Dumitrescu, Annette Ebbers-Baumann, Ansgar Grüne, and Rolf Klein)
In: Proceedings of the Workshop on Algorithms and Data Structures (WADS 2005), Waterloo, Canada,

August 2005, Editors: Alexandro López-Ortiz, Frank Dehne, and Joerg-Rüdiger Sack. Lecture Notes in Computer Science, 3608, Springer-Verlag, 2005, pp. 244–255.

81b. On the geometric dilation of closed curves, graphs, and point sets.
(coauthors: Adrian Dumitrescu, Annette Ebbers-Baumann, Ansgar Grüne, and Rolf Klein)
August 2005, 31 pages, arXiv:math.MG/0407135, to appear in *Computational Geometry, Theory and Applications*.
(This is a detailed and combined version of 81 and 81a.)

82. Strictly convex drawings of planar graphs.
In: Proceedings of the 16th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), Vancouver, January 2005, pp. 728–734.

83. Strictly convex drawings of planar graphs.
(coauthor: Imre Bárány)
July 2005, 18 pages, arXiv:cs.CG/0507030, to appear in *Documenta Mathematica* **19** (2006).

84. Threshold arrangements and the knapsack problem.
(coauthor: André Schulz)
Applied Mathematics Letters **19** (2006), 108–112.

85. Counting polyominoes on twisted cylinders.
(coauthors: Gill Barequet, Micha Moffie, and Ares Ribó)
manuscript, December 2004, 29 pages, to appear in *INTEGERS: The Electronic Journal of Combinatorial Number Theory*.

85a. Counting polyominoes on twisted cylinders.
(coauthors: Gill Barequet, Micha Moffie, and Ares Ribó)
Discrete Mathematics and Theoretical Computer Science **AE** (2005), 369–374.

86. Locked and unlocked chains of planar shapes.
(coauthors: Robert Connelly, Erik D. Demaine, Martin L. Demaine, Sándor P. Fekete, Stefan Langerman, Joseph S. B. Mitchell, and Ares Ribó)
In: Proceedings of the 22nd Annual Symposium on Computational Geometry, Sedona, June 5–7, 2006. Association for Computing Machinery, 2006, pp. 61–70.

87. A pointed Delaunay pseudo-triangulation of a simple polygon.
(coauthor: André Schulz)
In: Abstracts of the 21st European Workshop on Computational Geometry, Eindhoven, March 2005, pp. 77–80.

88. Matching point sets with respect to the earth mover's distance.
(coauthors: Sergio Cabello, Panos Giannopoulos, and Christian Knauer)
In: Abstracts of the 21st European Workshop on Computational Geometry, Eindhoven, March 2005, pp. 57–60.

88a. Matching point sets with respect to the earth mover's distance.
(coauthors: Sergio Cabello, Panos Giannopoulos, and Christian Knauer)
In: "Algorithms—ESA 2005", Proc. Thirteenth Annual European Symposium on Algorithms, Palma de Mallorca, 2005. Editors: Gerth Stølting Brodal and Stefano Leonardi. Lecture Notes in Computer Science 3669, Springer-Verlag, 2005, pp. 520–531.

89. Shortest inspection-path queries in simple polygons.
(coauthor: Christian Knauer)
Technical report B-05-05, April 2005, 6 pages.

90. The number of spanning trees in a planar graph.
In: Oberwolfach Reports, **2**, European Mathematical Society - Publishing House, 2005, pp. 969–973.

91. Minimum weight triangulation is NP-hard.
(coauthor: Wolfgang Mulzer)
In: Proceedings of the 22nd Annual Symposium on Computational Geometry, Sedona, June 5–7, 2006. Association for Computing Machinery, 2006, pp. 1–10.

92. Acyclic orientation of drawings.
(coauthors: Eyal Ackerman, Kevin Buchin, and Christian Knauer)
In: Proceedings of the 10th Scandinavian Workshop on Algorithm Theory (SWAT). Riga, July 2006, Editors: Lars Arge and Rusins Freivalds. Lecture Notes in Computer Science, 4059, Springer-Verlag, 2006, pp. 266–277.

92a. Acyclic orientation of drawings.
(coauthors: Eyal Ackerman, Kevin Buchin, and Christian Knauer)
In: Abstracts of the 22nd European Workshop on Computational Geometry, Delphi, March 2006, pp. 207–210.

93. On the bounding boxes obtained by principal component analysis.
(coauthors: Darko Dimitrov, Christian Knauer, and Klaus Kriegel)
In: Abstracts of the 22nd European Workshop on Computational Geometry, Delphi, March 2006, pp. 193–196.
94. Obnoxious centers in graphs.
(coauthor: Sergio Cabello)
to appear in: Proceedings of the 18th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), New Orleans, January 2007, 12 pages.
95. Approximation of an open polygonal curve with a minimum number of circular arcs and biarcs.
(coauthors: R. L. Scot Drysdale and Astrid Sturm)
manuscript, June 2006, 15 pages, submitted for publication.
95a. Approximation of an open polygonal curve with a minimum number of circular arcs.
(coauthors: R. L. Scot Drysdale and Astrid Sturm)
In: Abstracts of the 22nd European Workshop on Computational Geometry, Delphi, March 2006, pp. 25–28.
96. Matrix scaling by network flow.
(coauthor: Martin Zachariasen)
to appear in: Proceedings of the 18th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), New Orleans, January 2007, 11 pages.
97. Meshing of surfaces.
(coauthors: Jean-Daniel Boissonnat, David Cohen-Steiner, Bernard Mourrain, and Gert Vegter)
In: "Effective Computational Geometry for Curves and Surfaces". Editors: Jean-Daniel Boissonnat and Monique Teillaud, Chapter 5. Mathematics and Visualization, Springer-Verlag, 2006, pp. 181–229.
98. Computational topology: an introduction.
(coauthor: Gert Vegter)
In: "Effective Computational Geometry for Curves and Surfaces". Editors: Jean-Daniel Boissonnat and Monique Teillaud, Chapter 7. Mathematics and Visualization, Springer-Verlag, 2006, pp. 227–312.

Lectures at Scientific Symposia, Conferences, Workshops, etc.; Visiting Lectures:

1. 9. Symposion über Operations Research. Osnabrück, Germany, August 27–29, 1984.
"Optimal single-machine scheduling with earliness and tardiness penalties."
2. 15. Steiermärkisches Mathematisches Symposion. Stift Rein bei Graz, Austria, September 24–27, 1984.
"Dualität bei der Lösung extremaler linearer Programme."
3. Jahrestagung 1985 der Österreichischen Gesellschaft für Operations Research (ÖGOR). Technische Universität Wien, November 28–29, 1985.
"Minimierung der Dichte von Eingangs-Ausgangs-Zuordnungen beim Entwurf von integrierten Schaltkreisen."
"Systolic-array-Algorithmen für kürzeste Wege und Matrixinversion."
4. International Workshop: Parallel Algorithms and Architectures. Luminy, Frankreich, April 14–18, 1986.
"A parallel scheduling algorithm for minimizing the number of unscheduled jobs." (Invited lecture)
5. V. Kolloquium "Netzwerkoptimierung—Theorie und Anwendungen". Leipzig, Germany, May 14–16, 1986.
"Modellierung eines Problems beim Entwurf integrierter Schaltkreise als Flussproblem."
6. WG'86: 12th International Workshop on Graphtheoretic Concepts in Computer Science. Bernried am Starnbergersee, Germany, June 17–19, 1986.
"Testing the necklace condition for shortest tours on finite sets in the plane."
7. AWOC'86: Aegean workshop on computing (VLSI: Algorithms and Architectures. 2nd International Workshop on Parallel Computing and VLSI). Loutraki, Griechenland, July 8–11, 1986.
"On the connection between hexagonal and unidirectional rectangular systolic arrays."
8. Mathematical optimization and its relation to other mathematical areas. Oberwolfach, Germany, December 8–12, 1986.
"A graph-theoretic proof of the Cayley-Hamilton theorem."
9. Universität des Saarlandes, Saarbrücken, Germany, Fachbereich Informatik, April 24, 1987.
"Zuordnung von Eingangs-Pins zu Ausgangs-Pins unter Minimierung der Dichte—ein effizient lösbares Teilproblem beim Entwurf integrierter Schaltkreise." (visiting lecture)

10. Jahrestagung 1987 der Forschungsrichtung "Netzwerkoptimierung". Stadt Wehlen, Germany, May 5–8, 1987.
"Efficient approximation algorithms for parametric network problems."
11. ÖGOR-SVOR-Tagung 1987 (joint conference of the Österreichische Gesellschaft für Operations Research and the Schweizerische Vereinigung für Operations Research). Graz, July 6–8, 1987.
"Global approximation of convex functions with applications to parametric network problems."
12. GAMM-Tagung 1988 (annual conference of the Gesellschaft für angewandte Mathematik und Mechanik). Vienna, April 5–9, 1988.
"Eine Heuristik für ein Matrizenzerlegungsproblem, das in der Telekommunikation via Satelliten auftritt." (as part of the minisymposium "Kombinatorische Optimierung")
13. Freie Universität Berlin, Fachbereich Mathematik, April 25, 1988.
"Halbieren als Algorithmen-Entwurfsmethode am Beispiel eines Problems aus dem VLSI-Entwurf." (visiting lecture)
14. ARIDAM III (3rd Advanced Research Institute on Discrete Applied Mathematics). Rutgers University, New Brunswick, New Jersey, May 23 – June 3, 1988.
"An algorithm for simulating 32-color graphics on a 16-color graphics computer."
15. 13. Symposium über Operations Research. Paderborn, Germany, September 7–9, 1988.
"Computing the Lipschitz-norm of a function, with applications in quality control and pattern recognition."
16. Computational aspects of combinatorial optimization. Oberwolfach, Germany, January 9–13, 1989.
"Speeding up parametric network flow algorithms."
17. SIEMENS AG, Munich, May 2, 1989.
"Dichteminimierung beim Layout Design."
18. Advanced Seminar on Computational Aspects of Graph Theory (ASCGT'89). Bernried am Starnbergersee, Germany, May 3–5, 1989.
"Path problems." (Invited survey lecture)
19. ARIDAM V (Fifth Advanced Research Institute on Discrete Applied Mathematics). Rutgers University, New Brunswick, New Jersey, May 31 – June 5, 1990.
"Computing the bounded Lipschitz-norm of a function, with applications in quality control."
20. Sixth Annual Symposium on Computational Geometry. Berkeley, California, June 6–8, 1990.
"Some new bounds for epsilon-nets."
"Minimum-link paths among obstacles in the plane."
21. Cornell University, Ithaca, New York, School of Operations Research and Industrial Engineering, July 26, 1990.
"Geometric realizations of planar graphs." (Visiting lecture)
22. Second Canadian Symposium on Computational Geometry. Ottawa, Canada, August 6–10, 1990.
"Geometric clusterings."
"The convergence rate of the Sandwich algorithm for approximating convex figures in the plane."
23. New developments in combinatorial optimization: the traveling salesman problem example. Groningen, the Netherlands, September 14, 1990.
"The necklace condition for the traveling salesman problem." (Invited lecture)
24. Algorithmische Geometrie. Internationales Begegnungs- und Forschungszentrum für Informatik, Schloss Dagstuhl, Germany, October 8–12, 1990.
"Geometric clustering problems and colorings of graphs of long distances."
25. Combinatorial Optimization. Oberwolfach, Germany, January 14–18, 1991.
"Geometric clustering problems and colorings of graphs of large distances."
26. First Workshop on Applications of Combinatorial Optimization in Science and Technology. Rutgers University, New Brunswick, New Jersey, April 2–6, 1991.
"New heuristics for decomposing traffic matrices in TDMA satellite communication."
27. IBM Thomas J. Watson Research Center, Yorktown Heights, USA, April 9, 1991.
"A framework for certain linear expected-time algorithms."
28. Freie Universität Berlin, Institut für Informatik, May 6, 1991.
"Kreispackungen mit forgeschribenen Berürungen." (visiting lecture)
29. Università di Pisa, Dipartimento di Informatica, May 23, 1991.
"The penny-packing problem: packing disks with prescribed touching relations." (visiting lecture)
30. Workshop on Algebraic and Topological Methods in Graph Theory. Bled, Bled, Slovenia (Yugoslavia), June 24–28, 1991.
"Realization of planar graphs as circle packings."

31. 14th International Symposium on Mathematical Programming. Amsterdam, August 5–9, 1991.
"An improved time bound for computing maximum mean cuts."
32. International Computer Science Institute (ICSI), Berkeley, California, September 5, 1991.
"The penny-packing problem: packing disks with prescribed touching relations." (visiting lecture)
33. 5. Österreichisches Mathematikertreffen. Klagenfurt, Austria, September 23–27, 1991.
"Kreispackungen mit forgeschribenen Berürungen, mit Anwendungen."
34. Jahrestagung 1991 der Österreichischen Gesellschaft für Operations Research (ÖGOR). Krems, Austria, November 21, 1991.
"Qualitätskontrolle bei Windeln, Mustererkennung, und di Kantorowitsch-Rubinstein-Norm."
35. Minikolloquium über Kombinatorik. Technische Universität Graz, December 6–7, 1991.
"Ein konvexer-Hüllen-Algorithmus mit geringem Speicherbedarf."
36. ECCO V, Fifth Conference of the European Chapter on Combinatorial Optimization. Technische Universität Graz, April 13–15, 1992.
"Facet and vertex enumeration algorithms with little storage."
37. Eighth Annual Symposium on Computational Geometry. Berlin, June 10–12, 1992.
"Degenerate convex hulls in high dimensions without extra storage."
38. Austrian-Hungarian-Slovak Number Theory Colloqium 1992. Graz, June 15–17, 1992.
"Sequences with subword complexity $2n$."
39. Course on Computational Geometry and its Applications. The Leonardo Fibonacci Institute for the Foundations of Computer Science, Trento, Italy, June 15–19, 1992.
"The Sandwich algorithm for approximating convex figures."
"Approximation of curves and point sets: easy special cases." (invited lectures)
40. ICALP 92, 19th International Colloquium on Automata, Languages, and Programming. Vienna, July 13–17, 1992.
"A new metric between polygons, and how to compute it."
41. 4th International Workshop on Generalized Convexity. Pécs, Hungary, August 31 – September 2, 1992.
"The convergence rate of the Newton method in fractional programming."
42. Austrian-Slovenian Mathematics Congress. Graz, October 1–2, 1992.
"The bounded Lipschitz distance: applications and computation."
43. Technische Universität Graz, October 9, 1992.
"Approximation konvexer Mengen durch Polygone: Anwendungen und Algorithmen."
44. Christian-Albrechts-Universität Kiel, Mathematisches Seminar, December 16, 1992.
"Ein Matrizenzerlegungsproblem aus der Satelliten-Telekommunikation."
45. Symposium on Applied Mathematical Programming and Modeling (APMOD93). Budapest, January 6–8, 1993.
"Traffic matrix decomposition in TDMA satellite communication."
46. Combinatorial Optimization. Oberwolfach, Germany, January 18–22, 1993.
"The mice-collecting traveling salescat problem."
47. Universität Wien, Institut für Angewandte Informatik, March 22, 1993.
"Approximation konvexer Mengen durch Polygone: Anwendungen und Algorithmen."
48. Algorithmische Geometrie. Internationales Begegnungs- und Forschungszentrum für Informatik, Schloss Dagstuhl, Germany, March 23–26, 1993.
"Maintaining an approximation to the width of a set."
49. Montanuniversität Leoben, April 2, 1993.
"Kurven mit wachsenden Sehnen."
50. Austrian Conference on Discrete Geometry and Related Topics. Neuhofen, Austria, May 3–7, 1993.
"Variations of Euler's formula."
"Inscribable Polytopes."
51. Universität Passau, Germany, May 24, 1993.
"Konvexe Approximation."
52. Friedrich-Schiller-Universität Jena, Germany, July 1, 1993.
"Das Rundreiseproblem auf N parallelen Geraden."
53. Polytopes: Abstract, Convex, and Computational; NATO Advanced Summer Institute. Toronto, August 23 – September 4, 1993.
"Light bulb problems."
54. 8. Mathematikertreffen Zagreb-Graz. Universität Graz, December 9–11, 1993.
"Webs, iteration groups, and equivalent changes in probabilities, percentages, and other proportions."
55. CO'94 (Combinatorial Optimization). Amsterdam, April 5–8, 1994.
"On-line convering of a square by squares."

56. Szeged, Hungary, May 26, 1994.
“On-line convering of a square by squares.” (visiting lecture)
57. Convex and Discrete Geometry. Bydgoszcz, Poland, June 27 – July 2, 1994.
“On-line convering of a square by squares.”
58. Zhejiang University, Hangzhou, China, October 11 and 18, 1994.
“Combinatorial algorithms for linear programming in small dimensions and related problems.”
59. Zhejiang University, Center for Mathematical Sciences, Hangzhou, China, October 13, 1994.
“The traveling salesman problem for moving points.”
60. Institute of Applied Mathematics, Academia Sinica, Beijing (Peking), October 24 and 28, 1994.
“The traveling salesman problem for moving points.”
“Minimum-weight triangulations and greedy triangulations for point sets in the plane.”
61. Qinghua-University, Department of Applied Mathematics, Beijing (Peking), October 25, 1994.
“On-line covering of the unit square by squares.”
62. Universität Würzburg, December 5, 1994.
“Stückweise lineare konvexe Approximation.” (“Piecewise linear convex approximation.”)
63. Algorithmische Geometrie. Internationales Begegnungs- und Forschungszentrum für Informatik, Schloss Dagstuhl, Germany, March 13–17, 1995.
“A matching lemma for planar triangulations.” (jointly with Franz Aurenhammer)
64. 2nd Budapest-Leoben and 14th Leoben-Ljubljana Seminar on Graph Theory. Montanuniversität Leoben, April 24–26, 1995.
“A matching lemma for triangulations.”
65. 11th Annual Symposium on Computational Geometry. Vancouver, June 5–7, 1995.
“Triangulations intersect nicely.”
66. Berlin, August 20, 1995. “Optimale Codierung mit Code-Buchstaben unterschiedlicher Länge.”
67. SOR’95, Symposium on Operations Research. Passau, September 13–15, 1995.
“Optimal codes with different letter costs.”
68. DMV-Tagung 1995, Jahrestagung der deutschen Mathematiker-Vereinigung. Ulm, September 17–22, 1995.
“Kürzeste Triangulierungen und geometrische Cluster-Analyse: zwei geometrische Optimierungsprobleme.” (invited survey lecture)
69. 6. Österreichisches Mathematikertreffen. Leoben, Austria, September 25–28, 1995.
“Online-Überdeckung eines Würfels durch kleinere Würfel.”
70. Jahrestagung 1995 der Österreichischen Gesellschaft für Operations Research (ÖGOR). Leoben, Austria, November 17, 1995.
“Optimaler serienparalleler Zusammenschluss von Bauteilen zur Erhöhung der Sicherheit.”
71. RWTH Aachen, Germany, December 11, 1995.
“Kreispackungen mit vorgeschriebenen Berührungen.”
72. Florida Atlantic University, Boca Raton, January 9, 1996.
“A matching lemma for triangulations of planar point sets.”
73. Universität Klagenfurt, Institut für Mathematik, May 22, 1996.
“Eimerketten.” (“Bucket brigades.”)
74. “Discrete and Computational Geometry: Ten Years Later.” ASM-ISM-SIAM Summer Research Conference, Mount Holyoke College, South Hadley, Massachusetts, July 14–18, 1996.
75. ÖGOR-SVOR-Tagung 1996 (joint conference of the Österreichische Gesellschaft für Operations Research and the Schweizerische Vereinigung für Operations Research). Hochschule St. Gallen, Switzerland, September 9–10, 1996.
Presentation of research projects of the optimization group at the department for mathematics at the TU Graz.
76. ESA’96, Fourth Annual European Symposium on Algorithms, Barcelona, September 25–27, 1996.
“Matching convex shapes with respect to the symmetric difference.”
77. Combinatorial Optimization. Oberwolfach, Germany, October 13–19, 1996.
“Two-dimensional voltages, geometric tensions in graphs, and matching of point sets with reference points.”
78. Universität zu Köln. November 20, 1996.
“Vergleich und Anpassung geometrischer Formen.”
79. École Polytechnique Fédérale de Lausanne, November 22, 1996.
“Comparison and matching of geometric shapes.”
80. École Polytechnique Fédérale de Lausanne, November 28, 1996.
“Optimal codes with different letter costs.”

81. Martin-Luther-Universität Halle-Wittenberg. January 17, 1997.
"Vergleich und Anpassung geometrischer Formen."
82. Johann-Wolfgang-Göthe-Universität Frankfurt am Main. February 12, 1997.
"Vergleich und Anpassung geometrischer Formen."
83. Eidgenössische Technische Hochschule (ETH) Zürich, Departement für Informatik. March 25, 1997.
"Matching convex shapes with respect to the symmetric difference."
84. The Future of Discrete mathematics. Štiřín Castle, Czech Republic, May 19–24, 1997.
"Convex 3-polytopes can be realized with linearly many bits per coordinate."
85. Summer school on computational geometry. Chorin (Germany), June 16–18, 1997.
"Realization of three-dimensional polytopes."
86. 16th International Symposium on Mathematical Programming. Lausanne, August 24–29, 1997.
"Clustering problems on the line and on trees."
87. ESA'97, Fifth Annual European Symposium on Algorithms, Graz, September 15–17, 1997.
"Linear-time reconstruction of Delaunay triangulations with applications."
88. 14. Österreichischer Mathematikerkongress. Salzburg, September 22–26, 1997.
"Wifile Facetten kann ein 0-1-Polytop haben?"
"Cluster-Analyse auf der Geraden, auf dem Kreis, und in Bäumen."
89. Combinatorics — Algebraic, Geometric and Probabilistic Aspects. Sant Feliu de Guíxols, Spain, September 27 – October 2, 1997.
"An upper bound on the number of facets of a 0-1-polytope" (poster presentation).
90. Universität Trier, November 28, 1997.
"Cluster-Analyse in der Ebene und in Graphen."
91. Technische Universität Bergakademie Freiberg, Germany, January 31, 1998.
"Cluster-Analyse in der Ebene und in Graphen."
92. 2nd Aussois Workshop on Combinatorial Optimization. Aussois, France, February 2–6, 1998.
"Clustering on the line and in trees."
93. Workshop on Operations Research. Seggauberg, Austria, April 1–3, 1998.
"The max-plus-rank of matrices and its applications in combinatorial optimization."
94. Tokyo University, April 8 and 15, 1998.
"Clustering problems on the line and on trees."
"The max-plus-rank of matrices and its applications in combinatorial optimization."
95. IBM Tokyo Research Laboratory, April 9, 1998.
"Optimal logistics for expeditions — the jeep problem with complete refilling."
96. Kyoto University, April 13, 1998.
"Clustering problems on the line and on trees."
97. ETH Zürich, Institut für Operations Research, June 15, 1998.
"The max-plus rank of matrices and its applications in combinatorial optimization."
98. ETH Zürich, Institut für Informatik, June 16, 1998.
"Optimal logistics for expeditions — the jeep problem with complete refilling."
99. Freie Universität Berlin, Fachbereich Mathematik, May 27, 1998.
"Gute Triangulierungen für ebene Punktmengen."
100. ECMI Modeling Week (European Consortium for Mathematics in Industry). Milan, July 5–12, 1998, as a project instructor.
101. Convex and Discrete Geometry. Bydgoszcz, Poland, August 28 – September 2, 1998.
"How many facets can a 0/1-polytope have?"
102. Combinatorial Optimization. Oberwolfach, Germany, , January 11–16, 1999.
"Optimal triangulations."
103. Workshop on discrete geometry and the Kepler problem. Institute for Advanced Study, Princeton, January 17–22, 1999.
"Matchings between triangulations of a planar set of points."
104. Applied and Computational Convexity. Oberwolfach, Germany, February 1–5, 1999.
"Realizations of polytopes with integer coordinates."
105. 23. Berliner Algorithmentag. Humboldt-Universität zu Berlin, July 16, 1999
"Beleuchtungsprobleme."
106. X. Österreichisches Mathematikertreffen. Graz, September 20–24, 1999.
"Berechnung der Determinante und Pfaff'schen one Division."
107. Humboldt-Universität zu Berlin. November 18, 1999.
"Optimal logistics for expeditions — the jeep problem with complete refilling."

108. 4th Geometry Festival. Budapest, November 29 – December 2, 1999.
“Polytopes with small integral coordinates.”
109. Freie Universität Berlin. January 27, 2000.
“Qualitätskontrolle bei Windeln — wie theoretisch ist die theoretische Informatik.”
110. 4th Aussois Workshop on Combinatorial Optimization. Aussois, France, March 13–17, 2000.
“Can every polycon be untangled?”
111. A^3DiM^3O-Workshop. Munich, March 30–31, 2000.
“Optimale Logistik für Expeditionen — das Jeep-Problem.”
112. Kombinatorische Geometrie. Oberwolfach, Germany, May 29 – June 2, 2000.
“Sibson’s area-stealing formula and infinitesimal edge unfoldings of polytopes.”
113. Workshop on Probabilistic Methods in Combinatorial Optimization. Aarhus, Denmark, August 28 – September 1, 2000.
“Good triangulations for random point sets in linear expected time.”
114. Adam-Mickiewicz-University, Poznań, Poland, October 20, 2000.
“How to untangle a polygonal chain.”
115. Christian-Albrechts-Universität Kiel, Mathematisches Seminar, November 27, 2000.
“Wie man einen Zollstock auseinanderfaltet.” (“How to untangle a carpenter’s rule.”)
116. Max-Planck-Institut für Informatik, Saarbrücken, January 3, 2001.
“Division-free algorithms for determinants and Pfaffians.”
117. ETH Zürich, Institut für Informatik, March 2, 2001.
“Integer Programming in low dimensions.”
118. “Heureka, You Shrink!” 5th Aussois Workshop on Combinatorial Optimization. Aussois, France, March 5–9, 2001.
“Towards more efficient algorithms for integer programming in two and three dimensions.”
119. A^3DiM^3O-Workshop. Trier, March 15–16, 2001.
“Integer programming in two variables.”
120. Algorithmische Geometrie. Internationales Begegnungs- und Forschungszentrum für Informatik, Schloss Dagstuhl, Germany, March 19–23, 2001.
“The polytope of minimum pseudotriangulations and the quest for the Delaunay pseudotriangulation.”
121. Workshop on Combinatorics, Geometry, and Computation. Centro Stefano Franscini, Monte Verità, Ascona, Switzerland, May 13–15, 2001.
“Unfolding of polygons — recent developments.”
122. Elbe-Sandstones Geometry Workshop. Rynartice, Czech Republic, July 24–28, 2001.
“Unfolding of polygons — recent developments.”
123. Towards the Peak. Workshop on Unique Sink Orientations and Combinatorial Methods for Optimization. La Claustra, San Gottardo Pass, Switzerland, August 24–30, 2001.
“Randomized strategies for unique sink orientations of the 3-cube.”
124. 15. ÖMG-Kongress, Jahrestagung der Deutschen Mathematikervereinigung. Vienna, September 16–21, 2001.
“Der Drei-Distanzen-Satz in höheren Dimensionen.”
“Das Assoziaeder.”
125. University of Bonn, Institut für Informatik, October 22, 2001.
“Wie man die Determinante und die Pfaffiane ohne Division ausrechnet.”
126. ECG—Effective Computational Geometry of Curves and Surfaces, general workshop. Zürich, May 22–24, 2002.
“Determinants without divisions.”
127. 18th Annual Symposium on Computational Geometry. Barcelona, June 5–7, 2002.
“Pseudotriangulations, polytopes, and how to expand linkages.” (invited talk)
128. Operations Research 2002, Klagenfurt, September 2–5, 2002.
“Integer programming in low dimensions.” (semiplenary lecture)
129. 2nd Workshop on Combinatorics, Geometry, and Computation. Hiddensee, October 9–12, 2002.
“Pursuit-evasion games with imprecise target location and buffer minimization in on-line scheduling.”
130. Combinatorial Optimization. Oberwolfach, November 25–29, 2002.
“Pursuit-evasion and buffer minimization in online scheduling.”
131. 14th ACM-SIAM Symposium on Discrete Algorithms (SODA 2003). Baltimore, January 12–14, 2003.
“Pursuit-evasion with imprecise target location.”
132. Stanford University, Department of Computer Science, January 23, 2003.
“Incremental constructions *con BRIO*.”

133. Discrete Optimization — Methods and Applications, Festkolloquium celebrating the 60th birthday of Professor Dr. Rainer E. Burkard. Cologne, January 31 – February 1, 2003.
"Das Überqueren der Brücke bei Nacht." ("Crossing the bridge at night.")
134. ECG—Effective Computational Geometry of Curves and Surfaces, general workshop and workshop on software, Berlin, June 25–26, 2003.
"Computing Fréchet distances of piecewise smooth curves."
135. Brandenburgische Technische Universität Cottbus, July 1, 2003.
"Wie man einen Weg auf der Landkarte findet." ("How to find a path on a map.")
136. 18th International Symposium on Mathematical Programming. Copenhagen, August 18–22, 2003.
"Pursuit-evasion with imprecise target location."
137. Journées de Géométrie Algorithmique 2003. Presqu'île de Giens, Var, France, September 15–19, 2003.
"Pseudotriangulations." (survey course)
138. 3rd Workshop on Combinatorics, Geometry, and Computation. Neustrelitz, Germany, September 29 – October 1, 2003.
"Planar frameworks with plane reciprocals, and pseudotriangulations."
139. Fall school on computational geometry. Neustrelitz, Germany, October 2–4, 2003.
"Pseudotriangulations in computational geometry."
140. Workshop on Combinatorial and Discrete Geometry. MSRI (Mathematical Sciences Research Institute), Berkeley, November 17–21, 2003.
"The polytope of pointed pseudotriangulations, and Delone and anti-Delone pseudotriangulations."
141. EWCG 2004, 20th European Workshop on Computational Geometry. Seville, March 24–26, 2004.
"Computing the Fréchet distance between piecewise smooth curves."
142. Technische Universität Graz. October 13, 2004.
"How to unfold a carpenter's rule."
143. 16th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA). Vancouver, January 23–25, 2005.
"Strictly convex drawings of planar graphs."
144. Computational Geometry, Internationales Begegnungs- und Forschungszentrum für Informatik, Schloss Dagstuhl, Germany, March 14–18, 2005.
"On the exact solution of the L_1 circle fitting problem."
145. Discrete Geometry. Oberwolfach, April 10–16, 2005.
"The number of spanning trees in a planar graph."
146. 2nd Joint Meeting of AMS, DMV, and ÖMG. Mainz, Germany, June 16–19, 2005.
"Strictly convex drawings of planar graphs."
147. 6th Max-Planck Advanced Course on the Foundations of Computer Science (ADFOCS). Saarbrücken, August 29 – September 2, 2005.
"Pseudotriangulations."
148. EuroComb'05. European Conference on Combinatorics, Graph Theory and Applications. Berlin, September 5–9, 2005.
"Counting polyominoes on twisted cylinders."
149. ACS—Algorithms for Complex Shapes, kickoff meeting. Zürich, September 20–24, 2005.
"Robust geometric intersection by the Unsubdivision Method."
150. Department of Computer Science, École Normale Supérieure, Paris, September 27, 2005.
"Counting polyominoes on twisted cylinders."
151. Department of Computer Science, École Normale Supérieure, Paris, October 4, 2005.
"Strictly convex drawings of planar graphs."
152. Séminaire Combinatoire Algébrique et Géométrique, Université Pierre et Marie Curie, Paris, October 13, 2005.
"Pseudotriangulations and the expansion polytope."
153. Department of Mathematics, Ljubljana Unversity,
"Strictly convex drawings of planar graphs."
154. Department of Mathematics, Ljubljana Unversity,
"Strictly convex drawings of planar graphs."
155. Discrete Differential Geometry. Oberwolfach, March 6–10, 2006.
"Piecewise-linear Morse theory."

Visiting Positions:

April 21 – May 4, 1987: Visiting scientist at the Sonderforschungsbereich "VLSI-Entwurfsmethoden und Parallelität" at the Universität des Saarlandes, Saarbrücken, with Prof. Dr. Kurt Mehlhorn.
August 26 – September 6, 1991: Visiting scientist at the International Computer Science Institute (ICSI) in Berkeley, California.
November 21 – December 6, 1996: Visiting scientist at the Department of Mathematics of the École Polytechnique Fédérale de Lausanne, Switzerland.
September 16 – October 4, 2002: Visiting scientist in the DIMACS Special Focus on Computational Geometry and Applications, Rutgers University.
September 12 – October 14, 2005: Visiting professor at the École Normale Supérieure, Paris.

Research Projects:

1. Participation in the project "Discrete Optimization" of the research center: "Forschungsschwerpunkt: Methodenbank Angewandte Mathematik" headed by Prof. Dr. R. E. Burkard, in the years 1984–1989.
2. Erwin Schrödinger scholarship of the Austrian Fonds zur Förderung der wissenschaftlichen Forschung (FWF) in the summer semester 1990. Project title: Verfahren für Cluster-Analyse in der Ebene (Methods for cluster analysis in the plane).
3. Participation in the project "Methods for approximating convex sets", headed by Prof. Dr. R. E. Burkard, in the years 1989–1991.
4. Participation in the project "Inverse parametric optimization problems", headed by Prof. Dr. R. E. Burkard, in the years 1992–1994.
5. Participation in the project "Spezialforschungsbereich Optimierung und Kontrolle" in the project parts "Effizient lösbare Spezialfälle NP-schwerer Optimierungsprobleme" ("efficiently solvable special cases of NP-hard optimization problems") and "Kombinatorische Optimierung komplexer System" ("combinatorial optimization of complex systems"), directed by Prof. Dr. R. E. Burkard, and in the project part "Geometrisches Clustering", directed by Prof. Dr. F. Aurenhammer and Prof. Dr. W. Maass; in the years 1994–1999.
6. Professor in the European Graduate Program "Geometry, Combinatorics, and Computation", 1999–2005.
7. Participation in the research projekt "Effective Computational Geometry of Curves and Surfaces" (ECG), funded by the European Union, 2001–2004; site leader of the Berlin part of the project, since 2002.
8. Research project "Pseudotriangulierungen und Bewegungen von Gelenkssystemen", ("Pseudotriangulations and motions of frameworks"), funded by the Deutsche Forschungsgemeinschaft (German Research Association, DFG), 2003–2005, project leader.
9. Participation in the research projekt "Algorithms for Complex Shapes" (ACS), funded by the European Union, 2005–2008; site leader of the Berlin part of the project.
10. Professor in the Research Training Group "Methods for Discrete Structures", 2006–2011.

Organization of Conferences:

1. Coorganizer of the conference Tagung ECCO V, European Chapter on Combinatorial Optimization, in Graz (Austria), April 13–15, 1992.
2. Coorganizer of the "5th Annual European Symposium on Algorithms (ESA'97)" in Graz, Austria, September 15–17, 1997.
3. Organisation of a fall school on bioinformatics in Neuseddin (Germany), November 7–10, 2000.
4. Organisation of a seminar on algorithmic geometry, Internationales Begegnungs- und Forschungszentrum für Informatik, Schloss Dagstuhl, Germany, March 19–23, 2001 (together with Prof. Dr. Rolf Klein).
5. Organisation of a seminar on algorithmic geometry, Internationales Begegnungs- und Forschungszentrum für Informatik, Schloss Dagstuhl, Germany, March 16–21, 2003 (together with Prof. Dr. Danny Halperin).
6. Coorganizer of the general project workshop of the European research project "ECG—Effective Computational Geometry of Curves and Surfaces" in Berlin, June 24–26, 2003.
7. Organisation of a fall school on computational geometry in Neuseddin (Germany), November 7–10, 2003 (together with Prof. Dr. Helmut Alt).