
Bernard Chazelle

Curriculum Vitae
November 2011

1. Personal

Eugene Higgins Professor of Computer Science
Princeton University

Date of Birth: November 5, 1955
Citizenship: USA & France

2. Education

Ph.D., Computer Science, Yale University, 1980
Diploma (Applied Math), Ecole des Mines de Paris, 1977

3. Honors

2009 Best Paper Award, ACM-SIAM Symposium on Discrete Algorithms
2004– Fellow, American Academy of Arts and Sciences
2004– Fellow, World Innovation Foundation
2002– Member, European Academy of Sciences
1995– Fellow, Association for Computing Machinery
1994 Fellow, John Simon Guggenheim Memorial Foundation
1988 Recognition of Service Award, Association for Computing Machinery

4. Professional Appointments

2002– Professor of Computer Science and Mathematics, Princeton University
1989–2002 Professor of Computer Science, Princeton University
1998–2003 Fellow, NEC Research Institute
1998–1999 Professor of Applied Mathematics, Ecole Polytechnique, France
1986–1989 Associate Professor of Computer Science, Princeton University

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- 1985–1986 Associate Professor of Computer Science, Ecole normale supérieure, Paris
 - 1985–1986 Associate Professor of Computer Science, Brown University
 - 1982–1985 Assistant Professor of Computer Science, Brown University
 - 1980–1982 Postdoctoral Fellow, Carnegie-Mellon University

Temporary or Part-Time Employments

- 1977 Research Assistant, INRIA, France
- 1984 Xerox PARC, Palo Alto
- 1984–1992 DEC Systems Research Center, Palo Alto
- 1985–1986 Visiting Professor of Computer Science, University of Paris, Orsay
- 1988 DEC Paris Research Laboratory, France
- 1997– Consultant, NEC Research Institute (NECI), Princeton
- 1998–1999 Visiting Professor of Computer Science, University of Paris, Orsay
- 1998–1999 Invited Professor, INRIA

5. Editorial Service

- 1984–2009 Editor, *Algorithmica*
- 1985–2010 Editor, *SIAM Journal on Computing*
- 1986 Guest Editor, *Algorithmica*, Special Issue on 2nd Annual ACM Symposium on Computational Geometry
- 1988 Guest Editor, *Discrete and Computational Geometry*, Special Issue on 4th Annual ACM Symposium on Computational Geometry
- 1989–2003 Editor, *Journal of Algorithms*
- 1990–2008 Editor, *Computational Geometry: Theory and Applications*
- 1990– Editor, *International Journal of Computational Geometry & Applications*
- 1991– Editor, *Discrete and Computational Geometry*
- 1995–2000 Editor, *ENTCS*
- 1996–2010 Editor, *Journal of the ACM*
- 1997– Editor, *AMS Contemporary Mathematics Series: Discrete and Computational Geometry: Ten Years Later*
- 2001 Advisory Editorial Board Member, *Handbook of Discrete and Computational Geometry*, Chapman & Hall/CRC

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- 2004–2008 Editor, *ACM Transactions on Algorithms*
- 2004– Editor, *Foundations and Trends in Theoretical Computer Science*
- 2006– Advisory Editorial Board Member, *Geometry and Computing*, Springer
- 2007– Advisory Editorial Board Member, *Applied Algorithms and Data Structures Series*, Chapman & Hall/CRC
- 2009– Editor, *Journal of Computational Geometry*
- 2010– Advisory Editorial Board Member, *ACM XRDS*

6. Program Committees

- 1984 Member, Program Committee, 2nd AFCET-STACS, Saarbrücken
- 1985 Member, Program Committee, 17th Annual ACM Symposium on Theory of Computing (STOC)
- 1986 Member, Program Committee, 2nd Annual ACM Symposium on Computational Geometry (SoCG)
- 1987 Program Chair, Minisymposium on Computational Geometry, SIAM Annual Meeting
- 1988 Program Chair, 4th Annual ACM Symposium on Computational Geometry (SoCG)
- 1990 Member, Program Committee, 22nd Annual ACM Symposium on Theory of Computing (STOC)
- 1993 Member, Program Committee, 25th Annual ACM Symposium on Theory of Computing (STOC)
- 1993 Member, Program Committee, 9th Annual ACM Symposium on Computational Geometry (SoCG)
- 1996 Member, Program Committee, 8th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)
- 1997 Member, Program Committee, 2nd Workshop on Applied Computational Geometry
- 1997 Member, Program Committee, 13th Annual ACM Symposium on Computational Geometry (SoCG)
- 1998 Member, Program Committee, 2nd International Workshop on Randomization and Approximation Techniques in Computer Science (RANDOM)
- 2000 Member, Program Committee, 2nd Workshop on Algorithm Engineering and Experimentation (ALENEX)

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| 2001 | Member, Program Committee, 7th Annual International Computing and Combinatorics Conference (COCOON) |
| 2001 | Member, Program Committee, 12th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA) |
| 2001 | Member, Program Committee, 2nd International Conference on Fun with Algorithms, Elba |
| 2001 | Member, Program Committee, 42nd Annual IEEE Symposium on Foundations of Computer Science (FOCS) |
| 2002 | Member, Program Committee, LATIN'2002 |
| 2002 | Program Chair, 43rd Annual IEEE Symposium on Foundations of Computer Science (FOCS) |
| 2003 | Member, Program Committee, 9th Annual International Computing and Combinatorics Conference (COCOON) |
| 2003 | Member, Program Committee, 7th International Workshop on Randomization and Approximation Techniques in Computer Science (RANDOM) |
| 2004 | Member, Program Committee, 29th International Symposium on Mathematical Foundations of Computer Science (MFCS) |
| 2004 | Member, Program Committee, 20th Annual ACM Symposium on Computational Geometry (SoCG) |
| 2005 | Member, Program Committee, 16th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA) |
| 2006 | Member, Program Committee, 12th Annual International Computing and Combinatorics Conference (COCOON) |
| 2007 | Member, Program Committee, Frontiers of Algorithmics (Lanzhou, China) |
| 2008 | Member, Program Committee, 40th Annual ACM Symposium on Theory of Computing (STOC) |
| 2010 | Program Chair, 2nd Symposium on Innovations in Computer Science (ICS) |
| 2012 | Member, Program Committee, 39th International Colloquium on Automata, Languages and Programming (ICALP) |

7. Professional Activities

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| 1986 | Member, Scientific Committee, ICPAM (Unesco) |
| 1987–1988 | Organizer, Princeton Forum on Algorithms and Complexity |
| 1988 | Chair, ARIDAM III, Rutgers University, Probabilistic methods in geometry |

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- 1989–1990 Chair, Organizing committee, DIMACS Special Year in “Discrete and Computational Geometry”
- 1989–1993 Faculty, Geometry Center, Minn. (NSF)
- 1991–1998 Member, Executive Committee, DIMACS
- 1991–1995 Organizer, Dagstuhl Workshops on Efficient Algorithms
- 1996 Organizer, AMS-IMS-SIAM Summer Research Conference
- 1996 Research Director, DREI (NSF education program)
- 1996–1998 Co-Director, DIMACS (NSF Science and Technology Center)
- 1996 Chair, Computational Geometry Impact Task Force
- 1996 Co-chair, AMS–IMS–SIAM Joint Summer Research Conference
- 1997 Member, Steering Committee, ACM Computational Geometry
- 1997 Chair, Program Evaluation Committee, INRIA
- 1998 Founder, PACT (Consortium of Institute for Advanced Study, NECI, Princeton University)
- 1998 Co-Organizer, DIMACS Workshop, Design for Values
- 1998-2001 Chair, PACT Day
- 1998 Co-Organizer, DIMATIA-DIMACS Workshop on Combinatorial and Algorithmic Geometry, Prague
- 1999 Member, Scientific Council, ACIB, Ministère de l’Education Nationale et de la Recherche, France
- 1999– President, Scientific Council, DI, Ecole normale supérieure, Paris, France
- 2000 Chair, Board of Fellows, NEC Research Institute
- 2001– Member, Research Council, Ecole Polytechnique, France
- 2002-2005 Co-Organizer, DIMACS Special Focus: Computational Geometry and Applications
- 2004 Review Committee, Industrial Geometry Joint Research Program, Austrian Science Foundation
- 2004– Advisor, Contemporary Analysis of Discrete Algorithms Project, Japan Society for the Promotion of Science
- 2004– Member, Scientific Council, Ecole normale supérieure, Paris, France
- 2006– Member, Steering Committee, International Conference on Algorithmic Aspects in Information and Management

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- 2006– Member, Scientific Committee, Topological & Geometric Graph Theory '08, Paris
 - 2006– Member, Scientific Council, Institut Henri-Poincaré, Paris
 - 2006– Member, Board of Governors, Institute for Mathematics and Its Applications (IMA)
 - 2008– Chair Professor, Institute for Theoretical Computer Science, Tsinghua University
 - 2009 Organizer, Center for Computational Intractability “Natural Algorithms” Workshop, Princeton
 - 2009– President, Steering Committee, First Annual ICS Conference, Beijing
 - 2010– Director, Center for Computational Intractability

8. Recent Keynote Addresses

- 1990 Plenary Address, ARIDAM V, Rutgers University
- 1990 Plenary Address, Journées de Géométrie Algorithmique, INRIA, Sophia-Antipolis
- 1990 Plenary Address, SIGAL International Symposium on Algorithms, Tokyo
- 1990 Distinguished Lecture Series, Johns Hopkins University
- 1991 Plenary Address, ICALP'91, Madrid, Spain
- 1992 Plenary Address, Sixth SIAM Conference on Discrete Mathematics, Vancouver
- 1992 Keynote Address, Stonybrook Workshop on Computational Geometry
- 1992 Plenary Address, 4th Canadian Conference on Computational Geometry, St. John's, Newfoundland, Canada
- 1993 Plenary Address, 16th IFIP Conference on System Modelling and Optimization, Compiègne, France
- 1994 Plenary Address, STOC'94, Montréal, Canada
- 1995 Distinguished Lecture Series, Graduate Center, NY
- 1996 Distinguished Lecture Series, Univ. British Columbia
- 1996 Plenary Address, AMS–IMS–SIAM Joint Summer Research Conference, Mount Holyoke
- 1996 Plenary Address, CGC Workshop on Computational Geometry, The Johns Hopkins University

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- 1997 Plenary Address, WADS'97, Halifax
 - 1998 Plenary Address, ISAAC'98, Taejon, Korea
 - 1999 Distinguished Lecture Series, INRIA, Rocquencourt, France
 - 1999 Plenary Address, EuroCG'99, Antibes, France
 - 1999 Plenary Address, ETH Conference on Discrete and Computational Geometry, Ascona, Switzerland
 - 1999 Ron Graham's Celebration Day, "The Shape of Points: Where Euclid Meets Turing," AT&T Labs
 - 2000 Triangle Computer Science Distinguished Lecture Series, Duke University
 - 2000 Plenary Address, FSTTCS-2000, Foundations of Software Technology and Theoretical Computer Science, New Delhi, India
 - 2001 Plenary Address, COCOON'01, China
 - 2001 Bourbaki Seminar, "The PCP Theorem," Institut Henri Poincaré, Paris
 - 2002 Third Distinguished New York Computer Scientists Symposium, New York Academy of Sciences
 - 2002 Distinguished Lecture Series, University of Victoria, British Columbia
 - 2003 Distinguished Lecture Series, University of Wisconsin-Madison
 - 2003 Plenary Address, ESA'03, Budapest, Hungary
 - 2004 Plenary Address, SODA'04, New Orleans
 - 2004 Distinguished Lecture Series, University of Illinois at Urbana-Champaign
 - 2005 Distinguished Lecture Series, University of Toronto
 - 2005 Invited Tutorial, FOCS'05, Pittsburgh
 - 2006 Invited Lecture, AAAS Annual Meeting, St. Louis
 - 2006 Distinguished Lecture Series, University of Texas at Dallas
 - 2006 Plenary Address, EuroCG'06, Delphi, Greece
 - 2006 Plenary Address, DIKEMES, Athens, Greece
 - 2006 Distinguished Lecture Series, Simon Fraser University, Canada
 - 2006 Morgenstern Lecture Series, Sophia-Antipolis
 - 2006 Plenary Address, ETH Informatik's 25th Anniversary, Zurich
 - 2006 Interdisciplinary Distinguished Lecture Series, North Carolina State University
 - 2007 Distinguished Lecture Series, University of Michigan

2007	Plenary Address, EuroCG'07, Graz, Austria
2007	Plenary Address, 34th ICALP, Wroclaw, Poland
2007	Plenary Address, Norway Research Council Conference, Trondheim
2007	Distinguished Lecture Series, Stony Brook University
2008	Distinguished Lecture Series, University of Washington
2008	Distinguished Lecture, Birzeit University
2008	Distinguished Lecture Series, University of Buffalo, SUNY
2008	Plenary Address, 5th TAMC 2008, Xi'an, China
2008	Plenary Address, First China Symposium on Theoretical Computer Science, Tsinghua University, Beijing, China
2009	Distinguished Lecture Series, Bryn Mawr College
2009	Distinguished Lectures: Universities of Auckland, Canterbury, Otago; and Wellington (New Zealand)
2009	Distinguished Lecture, Gaschnig-Oakley Memorial Lecture Series, Carnegie-Mellon University
2009	Distinguished Lecture, Drexel University
2010	Distinguished Lecture, Dertouzos Lecture Series, MIT
2011	Distinguished Lecture, Bayer Lecture Series, University of Pittsburgh
2011	Keynote Address, 6th Computer Science Research Symposium, Dartmouth

9. Books

- [1] “The Discrepancy Method: Randomness and Complexity”, Cambridge University Press, 2000. Paperback version, 2001.
- [2] “Advances in Discrete and Computational Geometry”, (co-edited with J.E. Goodman and R. Pollack) Contemporary Mathematics, 223, AMS, Providence, 1998.

10. Journal Articles and Book Chapters

- [3] “The Polygon Containment Problem”, *Advances in Computing Research 1*, (F.P. Preparata, ed.), JAI Press, Greenwich, 1983, pp. 1–33.
- [4] “A Decision Procedure for Optimal Polyhedron Partitioning”, *Information Processing Letters*, **16**(2), 1983, pp. 75–78.

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- [5] “An Improved Algorithm for the Fixed-Radius Neighbor Problem”, *Information Processing Letters*, **16**(4), 1983, pp. 193–198.
- [6] “Unbounded Hardware Is Equivalent to Deterministic Turing Machines” (with L. Monier), *Theoretical Computer Science*, **24**(2), 1983, pp. 123–130.
- [7] “The Bottom-Left Bin-Packing Heuristic: An Efficient Implementation”, *IEEE Transactions on Computers*, **C-32**(8), 1983, pp. 697–707.
- [8] “Computing the Connected Components of D-Ranges” (with J. Incerpi), *Bulletin of EATCS*, **22**, 1984, pp. 9–11.
- [9] “Triangulation and Shape-Complexity” (with J. Incerpi), *ACM Transactions on Graphics*, Special Issue on “Computational Geometry”, **3**(2), 1984, pp. 135–152.
- [10] “Convex Partitions of Polyhedra: A Lower Bound and Worst-Case Optimal Algorithm”, *SIAM Journal on Computing*, **13**(3), 1984, pp. 488–507.
- [11] “Computational Geometry on a Systolic Chip”, *IEEE Transactions on Computers*, **C-33**(9), 1984, pp. 774–785.
- [12] “How to Search in History”, *Information & Control*, **64**(1–3), 1985, pp. 77–99.
- [13] “Optimal Convex Decompositions” (with D.P. Dobkin), in *Computational Geometry*, (G.T. Toussaint, ed.), North-Holland, 1985, pp. 63–133.
- [14] “The Power of Geometric Duality” (with L. Guibas, D.T. Lee), *BIT*, **25**(1), 1985, pp. 76–90.
- [15] “On the Convex Layers of a Planar Set”, *IEEE Transactions on Information Theory*, **IT-31**(4), 1985, pp. 509–517.
- [16] “Optimal Solutions for a Class of Point Retrieval Problems”, (with H. Edelsbrunner), *Journal of Symbolic Computation*, Vol.1, 1985, pp. 47–56.
- [17] “A Model of Computation for VLSI with Related Complexity Results” (with L. Monier), *Journal of the ACM*, **32**(3), 1985, pp. 573–588.
- [18] “New Upper Bounds for Neighbor Searching” (with R. Cole, F.P. Preparata, C. Yap), *Information & Control*, **68**(1–3), 1986, pp. 105–124.
- [19] “Computing the Largest Empty Rectangle” (with R.L. Drysdale, D.T. Lee), *SIAM Journal on Computing*, **15**(1), 1986, pp. 300–315.
- [20] “On a Circle Placement Problem” (with D.T. Lee), *Computing*, **36**, 1986, pp. 1–16.
- [21] “Reporting and Counting Segment Intersections”, *Journal of Computer and System Sciences*, **32**(2), 1986, pp. 156–182.
- [22] “Halfspace Range Search: An Algorithmic Application of k -Sets”, (with F.P. Preparata), *Discrete and Computational Geometry*, Vol.1, 1986, pp. 83–93.
- [23] “Filtering Search: A New Approach to Query-Answering”, *SIAM Journal on Computing*, **15**(3), 1986, pp. 703–724.

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- [24] “Fractional Cascading: I. A Data Structuring Technique”, (with L.J. Guibas), *Algorithmica*, **1**(2), 1986, pp. 133–162.
- [25] “Fractional Cascading: II. Applications”, (with L.J. Guibas), *Algorithmica*, **1**(2), 1986, pp. 163–191.
- [26] “Computing on a Free Tree via Complexity-Preserving Mappings”, *Algorithmica*, **2**(3), 1987, pp. 337–361.
- [27] “Some Techniques for Geometric Searching with Implicit Set Representations”, *Acta Informatica*, **24**, 1987, pp. 565–582.
- [28] “Intersection of Convex Objects in Two and Three Dimensions”, (with D.P. Dobkin), *Journal of the ACM*, **34**(1), 1987, pp. 1–27.
- [29] “An Improved Algorithm for Constructing k -th Order Voronoi Diagrams”, (with H. Edelsbrunner), *IEEE Transactions on Computers*, **C-36**(11), 1987, pp. 1349–1354.
- [30] “Linear Space Data Structures for Two Types of Range Search”, (with H. Edelsbrunner), *Discrete and Computational Geometry*, **2**, 1987, pp. 113–126.
- [31] “Approximation and Decomposition of Shapes”, in *Advances in Robotics, Vol.1: Algorithmic and Geometric Aspects of Robotics*, (J.T. Schwartz and C.K. Yap, eds.), Lawrence Erlbaum Associates, 1987, pp. 145–185.
- [32] “A Functional Approach to Data Structures and Its Use in Multidimensional Searching”, *SIAM Journal on Computing*, **17**(3), 1988, pp. 427–462.
- [33] “An Algorithm for Segment-Dragging and its Implementation”, *Algorithmica*, **3**(2), 1988, pp. 205–221.
- [34] “Parallel Computational Geometry”, (with A. Aggarwal, L.J. Guibas, C. O’Dunlaing, C.K. Yap), *Algorithmica*, **3**(3), 1988, pp. 293–327.
- [35] “The Complexity of Cutting Complexes”, (with H. Edelsbrunner, L.J. Guibas), *Discrete and Computational Geometry*, **4**, 1989, pp. 139–181.
- [36] “Visibility and Intersection Problems in Plane Geometry”, (with L.J. Guibas), *Discrete and Computational Geometry*, **4**, 1989, pp. 551–581.
- [37] “Lower Bounds on the Complexity of Polytope Range Searching”, *Journal of the American Mathematical Society*, **2**(4), 1989, pp. 637–666.
- [38] “Quasi-Optimal Range Searching in Spaces of Finite VC -Dimension”, (with E. Welzl), *Discrete and Computational Geometry*, **4**, 1989, pp. 467–489.
- [39] “An Algorithm for Generalized Point Location and Its Applications”, (with M. Sharir), *Journal of Symbolic Computation*, **10**, 1990, pp. 281–309.
- [40] “A Deterministic View of Random Sampling and Its Use in Geometry”, (with J. Friedman), *Combinatorica*, **10**(3), 1990, pp. 229–249.

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- [41] “Lower Bounds for Orthogonal Range Searching: I. The Reporting Case”, *Journal of the ACM*, **37**(2), 1990, pp. 200–212.
- [42] “Lower Bounds for Orthogonal Range Searching: II. The Arithmetic Model”, *Journal of the ACM*, **37**(3), 1990, pp. 439–463.
- [43] “Triangulating a Nonconvex Polytope”, (with L. Palios), *Discrete and Computational Geometry*, **5**, 1990, pp. 505–526.
- [44] “A Singly Exponential Stratification Scheme for Real Semi-Algebraic Varieties and Its Applications”, (with H. Edelsbrunner, L.J. Guibas, M. Sharir), *Theoretical Computer Science*, **84**, 1991, pp. 77–105.
- [45] “Points and Triangles in the Plane and Halving Planes in Space”, (with B. Aronov, H. Edelsbrunner, L.J. Guibas, M. Sharir, R. Wenger), *Discrete and Computational Geometry*, **6**, 1991, pp. 435–442.
- [46] “The Complexity of Computing Partial Sums Off-Line”, (with B. Rosenberg), *International Journal of Computational Geometry and Applications*, **1**(1), 1991, pp. 33–45.
- [47] “Triangulating a Simple Polygon in Linear Time”, *Discrete and Computational Geometry*, **6**, 1991, pp. 485–524.
- [48] “An Optimal Algorithm for Intersecting Line Segments in the Plane”, (with H. Edelsbrunner), *Journal of the ACM*, **39**(1), 1992, pp. 1–54.
- [49] “Quasi-Optimal Upper Bounds for Simplex Range Searching and New Zone Theorems”, (with M. Sharir, E. Welzl), *Algorithmica*, **8**, 1992, pp. 407–429.
- [50] “An Optimal Algorithm for Intersecting Three-Dimensional Convex Polyhedra”, *SIAM Journal on Computing*, **21**(4), 1992, pp. 671–696.
- [51] “Counting and Cutting Cycles of Lines and Rods in Space”, (with H. Edelsbrunner, L.J. Guibas, R. Pollack, R. Seidel, M. Sharir, J. Snoeyink), *Computational Geometry: Theory and Applications*, **1**, 1992, pp. 305–323.
- [52] “Computing a Face in an Arrangement of Line Segments and Related Problems”, (with H. Edelsbrunner, L.J. Guibas, M. Sharir, J. Snoeyink), *SIAM Journal on Computing*, **22**(6), 1993, pp. 1286–1302.
- [53] “Cutting Hyperplanes for Divide-and-Conquer”, *Discrete and Computational Geometry*, **9**, 1993, pp. 145–158.
- [54] “An Optimal Convex Hull Algorithm in Any Fixed Dimension”, *Discrete and Computational Geometry*, **10**, 1993, pp. 377–409.
- [55] “How Hard Is Half-Space Range Searching?”, (with H. Brönnimann, J. Pach), *Discrete and Computational Geometry*, **10**, 1993, pp. 143–155.
- [56] “Diameter, Width, Closest Line Pair, and Parametric Searching”, (with H. Edelsbrunner, L.J. Guibas, M. Sharir), *Discrete and Computational Geometry*, **10**, 1993, pp. 183–196.

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- [57] “Ray Shooting in Polygons Using Geodesic Triangulations”, (with H. Edelsbrunner, M. Grigni, L.J. Guibas, J.E. Hershberger, M. Sharir, J. Snoeyink), *Algorithmica*, **12**, 1994, pp. 54–68.
- [58] “Point Location among Hyperplanes and Unidirectional Ray-Shooting”, (with J. Friedman), *Computational Geometry: Theory and Applications*, **4**(2), 1994, pp. 53–62.
- [59] “Triangulating Disjoint Jordan Chains”, (with R. Bar-Yehuda), *International Journal of Computational Geometry and Applications*, **4**(4), 1994, pp. 475–481.
- [60] “Algorithms for Bichromatic Line-Segment Problems and Polyhedral Terrains”, (with H. Edelsbrunner, L.J. Guibas, M. Sharir), *Algorithmica*, **11**(2), 1994, pp. 116–132.
- [61] “Decomposition Algorithms in Geometry”, (with L. Palios), *Algebraic Geometry and its Applications*, (C. Bajaj, ed.), Chap.27, Springer-Verlag, 1994, pp. 419–447.
- [62] “Selecting Heavily Covered Points”, (with H. Edelsbrunner, L.J. Guibas, J.E. Hershberger, R. Seidel, M. Sharir), *SIAM Journal on Computing*, **23**(6), 1994, pp. 1138–1151.
- [63] “Derandomizing an Output-Sensitive Convex Hull Algorithm in Three Dimensions”, (with J. Matoušek), *Computational Geometry: Theory and Applications*, **5**, 1995, pp. 27–32.
- [64] “Improved Bounds on Weak ε -Nets for Convex Sets”, (with H. Edelsbrunner, M. Grigni, L.J. Guibas, M. Sharir, E. Welzl), *Discrete and Computational Geometry*, **13**, 1995, pp. 1–15.
- [65] “Computational Geometry: A Retrospective”, In “Computing in Euclidean Geometry”, (D.-Z. Du and F. Hwang, eds.), 2nd edition, World Scientific Press, 1995, pp. 22–46.
- [66] “Bounds on the Size of Tetrahedralizations”, (with N. Shouraboura), *Discrete and Computational Geometry*, **14**, 1995, pp. 429–444.
- [67] “An Elementary Approach to Lower Bounds in Geometric Discrepancy”, (with J. Matoušek, M. Sharir), *Discrete and Computational Geometry*, **13**, 1995, pp. 363–381.
- [68] “Lines in Space: Combinatorics and Algorithms”, (with H. Edelsbrunner, L.J. Guibas, M. Sharir, J. Stolfi), *Algorithmica*, **15**(5), 1996, pp. 428–447.
- [69] “Simplex Range Reporting on a Pointer Machine”, (with B. Rosenberg), *Computational Geometry: Theory and Applications*, **5**, 1996, pp. 237–247.
- [70] “On Linear-Time Deterministic Algorithms for Optimization Problems in Fixed Dimension”, (with J. Matoušek), *Journal of Algorithms*, **21**, 1996, pp. 579–597.
- [71] “The Computational Geometry Impact Task Force Report: An Executive Summary”, in *Applied Computational Geometry: Towards Geometric Engineering*, Springer-Verlag, LNCS 1148, 1996, pp. 59–65.
- [72] “BOXTREE: A Hierarchical Representation for Surfaces in 3D”, (with G. Barequet, L.J. Guibas, J. Mitchell, A. Tal), *Graphics Forum*, **15**(3), August 1996, pp. C–387–396.
- [73] “Decomposing the Boundary of a Nonconvex Polytope”, (with L. Palios), *Algorithmica*, **17**(3), 1997, pp. 245–265

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- [74] “Lower Bounds for Off-Line Range Searching”, *Discrete and Computational Geometry*, **17**, 1997, pp. 53–65.
- [75] “Strategies for Polyhedral Surface Decomposition: An Experimental Study”, (with D.P. Dobkin, N. Shouraboura, A. Tal), *Computational Geometry: Theory and Applications*, **7**, 1997, pp. 327–342.
- [76] “A Spectral Approach to Lower Bounds with Applications to Geometric Searching”, *SIAM Journal on Computing*, **27**(2), 1998, pp. 545–556.
- [77] “Optimal Slope Selection via Cuttings”, (with H. Brönnimann), *Computational Geometry: Theory and Applications*, **10**(1), 1998, pp. 23–29.
- [78] “Product Range Spaces, Sensitive Sampling, and Derandomization”, (with H. Brönnimann and J. Matoušek), *SIAM Journal on Computing*, **28**(5), 1999, pp. 1552–1575.
- [79] “Discrepancy Bounds for Geometric Set Systems with Square Incidence Matrices”, *Advances in Discrete and Computational Geometry*, Contemporary Mathematics, 223, AMS, Providence, 1999, pp. 103–107.
- [80] “The Computational Geometry Impact Task Force Report”, (with 36 co-authors), *Advances in Discrete and Computational Geometry*, Contemporary Mathematics, 223, AMS, Providence, 1999, pp. 407–463.
- [81] “A Lower Bound on the Complexity of Approximate Nearest-Neighbor Searching on the Hamming Cube”, (with A. Chakrabarti, B. Gum, A. Lvov), *Discrete and Computational Geometry – The Goodman-Pollack Festschrift*, Springer-Verlag, 2003.
- [82] “The Soft Heap: An Approximate Priority Queue with Optimal Error Rate”, *Journal of the ACM*, **47**(6), 2000, pp. 1012–1027.
- [83] “A Minimum Spanning Tree Algorithm with Inverse-Ackermann Type Complexity”, *Journal of the ACM*, **47**(6), 2000, pp. 1028–1047.
- [84] “Self-Customized BSP Trees for Collision Detection”, (with S. Ar, A. Tal), *Computational Geometry: Theory and Applications*, **10**(1–3), 2000, 23–29. Special Issue on Computational Geometry in Virtual Reality,
- [85] “The Discrepancy of Boxes in Higher Dimension”, (with A. Lvov), *Discrete and Computational Geometry*, **25**, 2001, pp. 519–524.
- [86] “A Trace Bound for the Hereditary Discrepancy”, (with A. Lvov), *Discrete and Computational Geometry*, **26**, 2001, pp. 221–231.
- [87] “Splitting a Delaunay Triangulation in Linear Time”, (with O. Devillers, F. Hurtado, M. Mora, V. Sacristán, M. Teillaud), *Algorithmica*, **34**(1), 2002, pp. 39–46.
- [88] “The PCP Theorem”, *Séminaire Bourbaki*, Astérisque, **895**, 2001–2002, pp. 19–36.
- [89] “Shape Distributions”, (with R. Osada, T. Funkhouser, D.P. Dobkin), *ACM Transactions on Graphics*, **21**(4), 2002, pp. 807–832.

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- [90] “Lower Bounds for Intersection Searching and Fractional Cascading in Higher Dimension”, (with D. Liu), *Journal of Computer and System Sciences*, **68**(2), 2004, pp. 269–284.
- [91] “The Discrepancy Method in Computational Geometry”, *Handbook of Discrete and Computational Geometry*, (J.E. Goodman and J. O’Rourke, eds.), Chapter 44, CRC Press, 2004, pp. 983–996.
- [92] “A Reflective Symmetry Descriptor for 3D Models”, (with M. Kazhdan, D.P. Dobkin, A. Finkelstein, T. Funkhouser, S. Rusinkiewicz), *Algorithmica*, **38**(1), 2004, pp. 201–225.
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13. Graduate Advising

- Burton Rosenberg (PhD, 1991), Magda Nour (MSc, 1990), Leonidas Palios (PhD, 1992), Hervé Brönnimann (PhD, 1995), Nadia Shouraboura (PhD, 1995), Alexey Lvov (PhD, 2000), Amit Chakrabarti (PhD, 2002), Ding Liu (PhD, 2005), Nir Ailon (PhD, 2006), Seshadhri Comandur (PhD, 2008), Wolfgang Mulzer (PhD, 2010), Nadia Heninger (PhD, 2011).
- PhD Reader or Co-advisor: Mark Post, Janet Incerpi, Delfin Montuno, Robert McCartney, Kazuo Iwano, Mark Weiss, Michael Laszlo, E.S. Panduranga, T.L. Snyder, Deborah Silver, William Lin, Francis Avnaim, Pankaj Agarwal, Jeffery R. Westbrook, Mordecai Golin, Heather Booth, Jean-Michel Moreau, Michel Pocchiola, Sarantos Kapidakis, Monique Teillaud, C. Bradford Barber, Jenny Zhao, Claire Mathieu, Mariette Yvinec, Dan Boneh, Franck Nielsen, Alejo Hausner, Subhash Khot, Tony Wirth, Elena Zaslavsky,

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