
Bernard Chazelle

Curriculum Vitae
December, 2022

1. Personal

Eugene Higgins Professor of Computer Science
Princeton University

Citizenship: USA & France

2. Education

Ph.D., Computer Science, Yale University, 1980
Diploma (Applied Math), Mines ParisTech, 1977

3. Honors

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| 2018 | Test-of-Time Award, European Symposia on Algorithms |
| 2013 | Best SICON Paper Prize, SIAM Control and Systems Theory |
| 2012 | SIAM Outstanding Paper Prize |
| 2009 | Best Paper Award, ACM-SIAM Symposium on Discrete KAlgorithms |
| 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 | Service Award, Association for Computing Machinery |
| 1977 | Fulbright Fellowship |

4. Professional Appointments

- 1989– Professor, Department of Computer Science, Princeton University
- 1986–89 Associate Professor, Department of Computer Science, Princeton University
- 2013–2015 Member, Institute for Advanced Study, Princeton
- 2012–2013 Professor, Computer Science Chair, Collège de France
- 1998–2003 Fellow, NEC Research Institute (chairman of the board, 2000–03)
- 1980– Other positions: ENS Ulm, Ecole Polytechnique, University of Paris, Brown University, CMU, DEC SRC, Xerox PARC, 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
- 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

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- 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)
- 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)

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| 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) |
| 2013 | Member, Program Committee, 45th Annual ACM Symposium on Theory of Computing (STOC) |
| 2013 | Member, Program Committee, 12th European Conference on Artificial Life (ECAL) |
| 2015 | Member, Program Committee, 7th Innovations in Theoretical Computer Science Conference (ITCS) |
| 2017 | Member, Program Committee, 9th Innovations in Theoretical Computer Science Conference (ITCS) |
| 2018 | Member, Program Committee, 10th Innovations in Theoretical Computer Science Conference (ITCS) |

7. Professional Activities

- 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
- 1989–1990 Chair, Organizing committee, DIMACS Special Year in “Discrete and Computational Geometry”
- 1989–1994 Faculty, Geometry Center, Minn. (NSF)
- 1991–1998 Member, Executive Committee, DIMACS
- 1991–1995 Co-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
- 1999–2007 President, Scientific Council, DI, Ecole normale supérieure, Paris, France
- 2000 Chair, Board of Fellows, NEC Research Institute
- 2001–2002 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

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- 2004 Advisor, Contemporary Analysis of Discrete Algorithms Project, Japan Society for the Promotion of Science
 - 2004–2006 Member, Scientific Council, Ecole normale supérieure, Paris, France
 - 2006–2014 Member, Scientific Council, Institut Henri-Poincaré, Paris
 - 2006–2011 Member, Board of Governors, Institute for Mathematics and Its Applications (IMA)
 - 2008 Member, Scientific Committee, Topological & Geometric Graph Theory '08, Paris
 - 2008– Chair Professor, Institute for Theoretical Computer Science, Tsinghua University
 - 2009 Organizer, Center for Computational Intractability “Natural Algorithms” Workshop, Princeton
 - 2009–2012 President, Steering Committee, ITCS Conference
 - 2010–2012 Director, NSF Center for Computational Intractability
 - 2013 Co-organizer with Mark Braverman, Center for Computational Intractability “Natural Algorithms and the Natural Sciences” Workshop, Princeton
 - 2015–2016 Co-Organizer, Dagstuhl workshop on Evolution and Computing
 - 2015 Evaluation Committee, INRIA
 - 2013– Member, Scientific Advisory Board, Project SAGE (Speed of Adaptation in Population Genetics and Evolutionary Computation)

8. Keynote Addresses since 1990

- 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

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- 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
- 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

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- 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, INRIA
 - 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
 - 2011 Plenary Address, Neural Information Processing Systems (NIPS), Granada, Spain
 - 2012 Inaugural Address, Collège de France, Paris
 - 2012 Morgenstern Lecture Series, INRIA

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| 2013 | Israel Pollak Lectures, Technion |
| 2013 | Avner Magen Memorial Lecture, Fields Institute, University of Toronto |
| 2013 | Institute Colloquium, IST Austria |
| 2013 | HaPoc 2013 Plenary Address, Ecole Normale Supérieure Ulm |
| 2014 | Collège de France Lecture Series, Cité des Sciences, Tunis, |
| 2014 | Distinguished Lecture Series, Bibliothèque Nationale de France |
| 2014 | Distinguished Lecture Series, Iowa State University |
| 2015 | Plenary Address, 9th International Conference on Algorithms and Complexity (CIAC 2015), Paris |
| 2015 | Plenary Address, Forums régionaux du Savoir, Regional Council, Rouen, France |
| 2015 | Presidential Lecture, Association of Bone and Joint Surgeon, Eugene, Oregon |
| 2015 | Plenary Lecture, 14th International Symposium on Algorithms and Data Structures (WADS 2015), Victoria, Canada |
| 2015 | Plenary Lecture, NecSys 2015, Philadelphia |
| 2016 | Distinguished Lecture, University of Rome, La Sapienza |
| 2016 | Keynote Address, Computability in Europe, Paris |
| 2016 | Keynote Address, Genetic and Evolutionary Computation Conference (GECCO 2016), Denver, Colorado |
| 2016 | Plenary Lecture, Inaugural, Michigan Center for Applied and Interdisciplinary Mathematics, University of Michigan, Ann Arbor |
| 2018 | Distinguished Lecture, Capital Area Theory Day, Georgetown University, Washington, DC |
| 2019 | Keynote Address, 22nd International Symposium, FCT 2019, Copenhagen, Denmark |
| 2019 | ESA Test-of-Time Award Lecture, Munich, Germany |
| 2020 | Distinguished Lecture, Yale University |
| 2022 | Paul Erdős Memorial Lecture, 34th CCCG 2022, Toronto, Canada |

9. Books

- [1] “L’Algorithmique et les Sciences”, Leçon Inaugurale, Collège de France, Fayard, 2013.

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- [2] “The Discrepancy Method: Randomness and Complexity”, Cambridge University Press, 2000. Paperback version, 2001.
- [3] “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

- [4] “The Polygon Containment Problem”, *Advances in Computing Research 1*, (F.P. Preparata, ed.), JAI Press, Greenwich, 1983, pp. 1–33.
- [5] “A Decision Procedure for Optimal Polyhedron Partitioning”, *Information Processing Letters*, **16**(2), 1983, pp. 75–78.
- [6] “An Improved Algorithm for the Fixed-Radius Neighbor Problem”, *Information Processing Letters*, **16**(4), 1983, pp. 193–198.
- [7] “Unbounded Hardware Is Equivalent to Deterministic Turing Machines” (with L. Monier), *Theoretical Computer Science*, **24**(2), 1983, pp. 123–130.
- [8] “The Bottom-Left Bin-Packing Heuristic: An Efficient Implementation”, *IEEE Transactions on Computers*, **C-32**(8), 1983, pp. 697–707.
- [9] “Computing the Connected Components of D-Ranges” (with J. Incerpi), *Bulletin of EATCS*, **22**, 1984, pp. 9–11.
- [10] “Triangulation and Shape-Complexity” (with J. Incerpi), *ACM Transactions on Graphics*, Special Issue on “Computational Geometry”, **3**(2), 1984, pp. 135–152.
- [11] “Convex Partitions of Polyhedra: A Lower Bound and Worst-Case Optimal Algorithm”, *SIAM Journal on Computing*, **13**(3), 1984, pp. 488–507.
- [12] “Computational Geometry on a Systolic Chip”, *IEEE Transactions on Computers*, **C-33**(9), 1984, pp. 774–785.
- [13] “How to Search in History”, *Information & Control*, **64**(1–3), 1985, pp. 77–99.
- [14] “Optimal Convex Decompositions” (with D.P. Dobkin), in *Computational Geometry*, (G.T. Toussaint, ed.), North-Holland, 1985, pp. 63–133.
- [15] “The Power of Geometric Duality” (with L. Guibas, D.T. Lee), *BIT*, **25**(1), 1985, pp. 76–90.
- [16] “On the Convex Layers of a Planar Set”, *IEEE Transactions on Information Theory*, **IT-31**(4), 1985, pp. 509–517.
- [17] “Optimal Solutions for a Class of Point Retrieval Problems”, (with H. Edelsbrunner), *Journal of Symbolic Computation*, Vol.1, 1985, pp. 47–56.
- [18] “A Model of Computation for VLSI with Related Complexity Results” (with L. Monier), *Journal of the ACM*, **32**(3), 1985, pp. 573–588.

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- [19] “New Upper Bounds for Neighbor Searching” (with R. Cole, F.P. Preparata, C. Yap), *Information & Control*, **68**(1–3), 1986, pp. 105–124.
- [20] “Computing the Largest Empty Rectangle” (with R.L. Drysdale, D.T. Lee), *SIAM Journal on Computing*, **15**(1), 1986, pp. 300–315.
- [21] “On a Circle Placement Problem” (with D.T. Lee), *Computing*, **36**, 1986, pp. 1–16.
- [22] “Reporting and Counting Segment Intersections”, *Journal of Computer and System Sciences*, **32**(2), 1986, pp. 156–182.
- [23] “Halfspace Range Search: An Algorithmic Application of k -Sets”, (with F.P. Preparata), *Discrete and Computational Geometry*, Vol.1, 1986, pp. 83–93.
- [24] “Filtering Search: A New Approach to Query-Answering”, *SIAM Journal on Computing*, **15**(3), 1986, pp. 703–724.
- [25] “Fractional Cascading: I. A Data Structuring Technique”, (with L.J. Guibas), *Algorithmica*, **1**(2), 1986, pp. 133–162.
- [26] “Fractional Cascading: II. Applications”, (with L.J. Guibas), *Algorithmica*, **1**(2), 1986, pp. 163–191.
- [27] “Computing on a Free Tree via Complexity-Preserving Mappings”, *Algorithmica*, **2**(3), 1987, pp. 337–361.
- [28] “Some Techniques for Geometric Searching with Implicit Set Representations”, *Acta Informatica*, **24**, 1987, pp. 565–582.
- [29] “Intersection of Convex Objects in Two and Three Dimensions”, (with D.P. Dobkin), *Journal of the ACM*, **34**(1), 1987, pp. 1–27.
- [30] “An Improved Algorithm for Constructing k -th Order Voronoi Diagrams”, (with H. Edelsbrunner), *IEEE Transactions on Computers*, **C-36**(11), 1987, pp. 1349–1354.
- [31] “Linear Space Data Structures for Two Types of Range Search”, (with H. Edelsbrunner), *Discrete and Computational Geometry*, **2**, 1987, pp. 113–126.
- [32] “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.
- [33] “A Functional Approach to Data Structures and Its Use in Multidimensional Searching”, *SIAM Journal on Computing*, **17**(3), 1988, pp. 427–462.
- [34] “An Algorithm for Segment-Dragging and its Implementation”, *Algorithmica*, **3**(2), 1988, pp. 205–221.
- [35] “Parallel Computational Geometry”, (with A. Aggarwal, L.J. Guibas, C. O’Dunlaing, C.K. Yap), *Algorithmica*, **3**(3), 1988, pp. 293–327.
- [36] “The Complexity of Cutting Complexes”, (with H. Edelsbrunner, L.J. Guibas), *Discrete and Computational Geometry*, **4**, 1989, pp. 139–181.

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- [37] “Visibility and Intersection Problems in Plane Geometry”, (with L.J. Guibas), *Discrete and Computational Geometry*, **4**, 1989, pp. 551–581.
- [38] “Lower Bounds on the Complexity of Polytope Range Searching”, *Journal of the American Mathematical Society*, **2**(4), 1989, pp. 637–666.
- [39] “Quasi-Optimal Range Searching in Spaces of Finite VC-Dimension”, (with E. Welzl), *Discrete and Computational Geometry*, **4**, 1989, pp. 467–489.
- [40] “An Algorithm for Generalized Point Location and Its Applications”, (with M. Sharir), *Journal of Symbolic Computation*, **10**, 1990, pp. 281–309.
- [41] “A Deterministic View of Random Sampling and Its Use in Geometry”, (with J. Friedman), *Combinatorica*, **10**(3), 1990, pp. 229–249.
- [42] “Lower Bounds for Orthogonal Range Searching: I. The Reporting Case”, *Journal of the ACM*, **37**(2), 1990, pp. 200–212.
- [43] “Lower Bounds for Orthogonal Range Searching: II. The Arithmetic Model”, *Journal of the ACM*, **37**(3), 1990, pp. 439–463.
- [44] “Triangulating a Nonconvex Polytope”, (with L. Palios), *Discrete and Computational Geometry*, **5**, 1990, pp. 505–526.
- [45] “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.
- [46] “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.
- [47] “The Complexity of Computing Partial Sums Off-Line”, (with B. Rosenberg), *International Journal of Computational Geometry and Applications*, **1**(1), 1991, pp. 33–45.
- [48] “Triangulating a Simple Polygon in Linear Time”, *Discrete and Computational Geometry*, **6**, 1991, pp. 485–524.
- [49] “An Optimal Algorithm for Intersecting Line Segments in the Plane”, (with H. Edelsbrunner), *Journal of the ACM*, **39**(1), 1992, pp. 1–54.
- [50] “Quasi-Optimal Upper Bounds for Simplex Range Searching and New Zone Theorems”, (with M. Sharir, E. Welzl), *Algorithmica*, **8**, 1992, pp. 407–429.
- [51] “An Optimal Algorithm for Intersecting Three-Dimensional Convex Polyhedra”, *SIAM Journal on Computing*, **21**(4), 1992, pp. 671–696.
- [52] “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.

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- [53] “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.
- [54] “Cutting Hyperplanes for Divide-and-Conquer”, *Discrete and Computational Geometry*, **9**, 1993, pp. 145–158.
- [55] “An Optimal Convex Hull Algorithm in Any Fixed Dimension”, *Discrete and Computational Geometry*, **10**, 1993, pp. 377–409.
- [56] “How Hard Is Half-Space Range Searching?”, (with H. Brönnimann, J. Pach), *Discrete and Computational Geometry*, **10**, 1993, pp. 143–155.
- [57] “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.
- [58] “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.
- [59] “Point Location among Hyperplanes and Unidirectional Ray-Shooting”, (with J. Friedman), *Computational Geometry: Theory and Applications*, **4**(2), 1994, pp. 53–62.
- [60] “Triangulating Disjoint Jordan Chains”, (with R. Bar-Yehuda), *International Journal of Computational Geometry and Applications*, **4**(4), 1994, pp. 475–481.
- [61] “Algorithms for Bichromatic Line-Segment Problems and Polyhedral Terrains”, (with H. Edelsbrunner, L.J. Guibas, M. Sharir), *Algorithmica*, **11**(2), 1994, pp. 116–132.
- [62] “Decomposition Algorithms in Geometry”, (with L. Palios), *Algebraic Geometry and its Applications*, (C. Bajaj, ed.), Chap.27, Springer-Verlag, 1994, pp. 419–447.
- [63] “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.
- [64] “Derandomizing an Output-Sensitive Convex Hull Algorithm in Three Dimensions”, (with J. Matoušek), *Computational Geometry: Theory and Applications*, **5**, 1995, pp. 27–32.
- [65] “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.
- [66] “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.
- [67] “Bounds on the Size of Tetrahedralizations”, (with N. Shouraboura), *Discrete and Computational Geometry*, **14**, 1995, pp. 429–444.
- [68] “An Elementary Approach to Lower Bounds in Geometric Discrepancy”, (with J. Matoušek, M. Sharir), *Discrete and Computational Geometry*, **13**, 1995, pp. 363–381.
- [69] “Lines in Space: Combinatorics and Algorithms”, (with H. Edelsbrunner, L.J. Guibas, M. Sharir, J. Stolfi), *Algorithmica*, **15**(5), 1996, pp. 428–447.

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- [70] “Simplex Range Reporting on a Pointer Machine”, (with B. Rosenberg), *Computational Geometry: Theory and Applications*, **5**, 1996, pp. 237–247.
- [71] “On Linear-Time Deterministic Algorithms for Optimization Problems in Fixed Dimension”, (with J. Matoušek), *Journal of Algorithms*, **21**, 1996, pp. 579–597.
- [72] “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.
- [73] “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.
- [74] “Decomposing the Boundary of a Nonconvex Polytope”, (with L. Palios), *Algorithmica*, **17**(3), 1997, pp. 245–265.
- [75] “Lower Bounds for Off-Line Range Searching”, *Discrete and Computational Geometry*, **17**, 1997, pp. 53–65.
- [76] “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.
- [77] “A Spectral Approach to Lower Bounds with Applications to Geometric Searching”, *SIAM Journal on Computing*, **27**(2), 1998, pp. 545–556.
- [78] “Optimal Slope Selection via Cuttings”, (with H. Brönnimann), *Computational Geometry: Theory and Applications*, **10**(1), 1998, pp. 23–29.
- [79] “Product Range Spaces, Sensitive Sampling, and Derandomization”, (with H. Brönnimann and J. Matoušek), *SIAM Journal on Computing*, **28**(5), 1999, pp. 1552–1575.
- [80] “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.
- [81] “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.
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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), Chu Wang (PhD, 2016), Kritkorn Karntikoon, PhD, Devavrat Vivek Dabke, PhD.