

Bibliography

- [1] P. K. Agarwal, R. Klein, C. Knauer, and M. Sharir. Computing the detour of polygonal curves. Technical Report B 02-03, Freie Universität Berlin, Fachbereich Mathematik und Informatik, 2002.
- [2] P. K. Agarwal and M. Sharir. Efficient randomized algorithms for some geometric optimization problems. *Discrete Comput. Geom.*, 16:317–337, 1996.
- [3] P. K. Agarwal and M. Sharir. Motion planning of a ball amid polyhedral obstacles in three dimensions. In *Proc. 10th ACM-SIAM Sympos. Discrete Algorithms*, pages 21–30, 1999.
- [4] P. K. Agarwal and M. Sharir. Pipes, cigars, and kreplach: The union of Minkowski sums in three dimensions. In *Proc. 15th Annu. ACM Sympos. Comput. Geom.*, pages 143–153, 1999.
- [5] A. V. Aho, J. E. Hopcroft, and J. D. Ullman. *Data Structures and Algorithms*. Addison-Wesley, Reading, MA, 1983.
- [6] O. Aichholzer, F. Aurenhammer, C. Icking, R. Klein, E. Langetepe, and G. Rote. Generalized self-approaching curves. *Discrete Applied Mathematics*, November 2000. to appear.
- [7] T. Akutsu. On determining the congruence of point sets in d dimensions. *Comput. Geom. Theory Appl.*, 9(4):247–256, 1998.
- [8] H. Alt, O. Aichholzer, and G. Rote. Matching shapes with a reference point. *Internat. J. Comput. Geom. Appl.*, 7:349–363, 1997.
- [9] H. Alt, B. Behrends, and J. Blömer. Approximate matching of polygonal shapes. *Ann. Math. Artif. Intell.*, 13:251–266, 1995.
- [10] H. Alt, J. Blömer, M. Godau, and H. Wagener. Approximation of convex polygons. In *Proc. 17th Internat. Colloq. Automata Lang. Program.*, volume 443 of *Lecture Notes Comput. Sci.*, pages 703–716. Springer-Verlag, 1990.

- [11] H. Alt, P. Brass, M. Godau, C. Knauer, and C. Wenk. Computing the Hausdorff distance of geometric patterns and shapes. Technical Report B 01-15, Freie Universität Berlin, Fachbereich Mathematik und Informatik, 2001.
- [12] H. Alt, U. Fuchs, G. Rote, and G. Weber. Matching convex shapes with respect to the symmetric difference. *Algorithmica*, 21:89–103, 1998.
- [13] H. Alt and M. Godau. Computing the Fréchet distance between two polygonal curves. *Internat. J. Comput. Geom. Appl.*, 5:75–91, 1995.
- [14] H. Alt and L. Guibas. Resemblance of geometric objects. In J.-R. Sack and J. Urrutia, editors, *Handbook of Computational Geometry*, pages 121–153. Elsevier Science Publishers B.V. North-Holland, Amsterdam, 1999.
- [15] H. Alt and L. J. Guibas. Discrete geometric shapes: Matching, interpolation, and approximation. In J.-R. Sack and J. Urrutia, editors, *Handbook of Computational Geometry*, pages 121–153. Elsevier Science Publishers B.V. North-Holland, Amsterdam, 2000.
- [16] H. Alt, C. Knauer, and C. Wenk. Bounding the Fréchet distance by the Hausdorff distance. In *Abstracts 17th European Workshop Comput. Geom.*, pages 166–169. Freie Universität Berlin, 2001.
- [17] H. Alt, C. Knauer, and C. Wenk. Matching polygonal curves with respect to the Fréchet distance. In *Proceedings 18th International Symposium on Theoretical Aspects of Computer Science*, pages 63–74, 2001.
- [18] H. Alt, K. Mehlhorn, H. Wagener, and E. Welzl. Congruence, similarity and symmetries of geometric objects. *Discrete Comput. Geom.*, 3:237–256, 1988.
- [19] B. Aronov and M. Sharir. On translational motion planning in 3-space. In *Proc. 10th Annu. ACM Sympos. Comput. Geom.*, pages 21–30, 1994.
- [20] B. Aronov and M. Sharir. On translational motion planning of a convex polyhedron in 3-space. *SIAM J. Comput.*, 26:1785–1803, 1997.
- [21] M. J. Atallah. On symmetry detection. *IEEE Trans. Comput.*, C-34:663–666, 1985.
- [22] M. D. Atkinson. An optimal algorithm for geometrical congruence. *J. Algorithms*, 8:159–172, 1987.
- [23] F. Aurenhammer. Improved algorithms for discs and balls using power diagrams. *J. Algorithms*, 9:151–161, 1988.
- [24] P. Brass and C. Knauer. Testing the congruence of d -dimensional point sets. In *Proc. 16th Annu. ACM Symp. on Computational Geometry*, pages 310–314, 2000.

- [25] B. Chazelle, H. Edelsbrunner, L. J. Guibas, and M. Sharir. A singly-exponential stratification scheme for real semi-algebraic varieties and its applications. *Theoret. Comput. Sci.*, 84:77–105, 1991.
- [26] B. Chazelle, H. Edelsbrunner, L. J. Guibas, M. Sharir, and J. Snoeyink. Computing a face in an arrangement of line segments and related problems. *SIAM J. Comput.*, 22:1286–1302, 1993.
- [27] B. Chazelle and M. Sharir. An algorithm for generalized point location and its application. *J. Symbolic Comput.*, 10:281–309, 1990.
- [28] K. L. Clarkson and P. W. Shor. Applications of random sampling in computational geometry, II. *Discrete Comput. Geom.*, 4:387–421, 1989.
- [29] R. Cole. Slowing down sorting networks to obtain faster sorting algorithms. *J. ACM*, 34(1):200–208, 1987.
- [30] G. E. Collins. Quantifier elimination for real closed fields by cylindrical algebraic decomposition. In *Proc. 2nd GI Conference on Automata Theory and Formal Languages*, volume 33 of *Lecture Notes Comput. Sci.*, pages 134–183. Springer-Verlag, 1975.
- [31] A. Ebbers-Baumann, R. Klein, E. Langetepe, and A. Lingas. A fast algorithm for approximating the detour of a polygonal chain. In *ESA 2001 — European Symposium on Algorithms*, 2001.
- [32] H. Edelsbrunner. *Algorithms in Combinatorial Geometry*, volume 10 of *EATCS Monographs on Theoretical Computer Science*. Springer-Verlag, Heidelberg, West Germany, 1987.
- [33] A. Efrat, P. Indyk, and S. Venkatasubramanian. Pattern matching for sets of segments. In *Proceedings of the 12th ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 295–304, Washington, D.C., USA, September 2001.
- [34] S. J. Fortune. A sweeline algorithm for Voronoi diagrams. *Algorithmica*, 2:153–174, 1987.
- [35] M. Godau. *On the complexity of measuring the similarity between geometric objects in higher dimensions*. PhD thesis, Department of Computer Science, Freie Universität Berlin, 1999.
- [36] L. J. Guibas, M. Sharir, and S. Sifrony. On the general motion planning problem with two degrees of freedom. *Discrete Comput. Geom.*, 4:491–521, 1989.
- [37] P. T. Highnam. Optimal algorithms for finding the symmetries of a planar point set. *Inform. Process. Lett.*, 22:219–222, 1986.

- [38] K. Kedem, R. Livne, J. Pach, and M. Sharir. On the union of Jordan regions and collision-free translational motion amidst polygonal obstacles. *Discrete Comput. Geom.*, 1:59–71, 1986.
- [39] G. K. Manacher. An application of pattern matching to a problem in geometrical complexity. *Inform. Process. Lett.*, 5:6–7, 1976.
- [40] N. Megiddo. Applying parallel computation algorithms in the design of serial algorithms. *J. ACM*, 30(4):852–865, 1983.
- [41] J. Pach and M. Sharir. On the boundary of the union of planar convex sets. *Discrete Comput. Geom.*, 21:321–328, 1999.
- [42] M. Pellegrini. On collision-free placements of simplices and the closest pair of lines in 3-space. *SIAM J. Comput.*, 23(1):133–153, 1994.
- [43] F. P. Preparata and M. I. Shamos. *Computational Geometry: An Introduction*. Springer-Verlag, 3rd edition, Oct. 1990.
- [44] G. Rote. Curves with increasing chords. *Math. Proc. Camb. Phil. Soc.*, 115:1–12, 1994.
- [45] S. Schirra. Über die Bitkomplexität der ϵ -Kongruenz. Master’s thesis, Fachbereich Informatik, Universität des Saarlandes, 1988.
- [46] C. Shannon. Probability of error for optimal codes in a gaussian channel. *Bell System Tech. J.*, 38:611–656, 1959.
- [47] M. Sharir and P. K. Agarwal. *Davenport-Schinzel Sequences and Their Geometric Applications*. Cambridge University Press, New York, 1995.
- [48] K. Sugihara. An $n \log n$ algorithm for determining the congruity of polyhedra. *J. Comput. Syst. Sci.*, 29:36–47, 1984.
- [49] S. Venkatasubramanian. *Geometric Shape Matching and Drug Design*. PhD thesis, Department of Computer Science, Stanford University, August 1999.
- [50] C. Wenk. *Shape matching in higher dimensions*. PhD thesis, Department of Computer Science, Freie Universität Berlin. In preparation.
- [51] A. D. Wyner. Capabilities of bounded discrepancy decoding. *AT&T Tech. J.*, 44:1061–1122, 1965.