
BOOK CHAPTERS

- [1] Goaoc, X. Convexité combinatoire. In *Informatique Mathématique Une photographie en 2020*, pages 149–200. CNRS Editions, 2020.
- [2] Goaoc, X., Paták, P., Patáková, Z., Tancer, M., and Wagner, U. Bounding helly numbers via betti numbers. In *A journey through discrete mathematics*, pages 407–447. Springer, 2017.
- [3] Goaoc, X. Some discrete properties of the space of line transversals to disjoint balls. In *Non-linear Computational Geometry*, volume 151 of *IMA Volume Series*, pages 51–84. Springer-Verlag, 2009.

ARTICLES IN JOURNALS

- [4] Goaoc, X. and Welzl, E. Convex hulls of random order types. *Journal of the Association for Computing Machinery*, 70:(8)1–(8)47, 2023.
- [5] Bárány, I., Fradelizi, M., Goaoc, X., Hubard, A., and Rote, G. Random polytopes and the wet part for arbitrary probability distributions. *Annales Henri Lebesgue*, 3:701–715, 2020.
- [6] Goaoc, X., Holmsen, A., and Nicaud, C. An experimental study of forbidden patterns in geometric permutations by combinatorial lifting. *Journal of Computational Geometry*, 11:131–161, 2020.
- [7] Bukh, B. and Goaoc, X. Shatter functions with polynomial growth rates. *SIAM Journal on Discrete Mathematics*, 33:784–794, 2019.
- [8] De Loera, J. A., Goaoc, X., Meunier, F., and Mustafa, N. The discrete yet ubiquitous theorems of Carathéodory, Helly, Sperner, Tucker, and Tverberg. *Bulletin of the American Mathematical Society*, 56:415–511, 2019.
- [9] Goaoc, X., Paták, P., Patáková, Z., Tancer, M., and Wagner, U. Shellability is NP-complete. *Journal of the Association for Computing Machinery*, 66:(21)1–(21)18, 2019.
- [10] Aronov, B., Cheong, O., Dobbins, M., and Goaoc, X. The number of holes in the union of translates of a convex set in three dimensions. *Discrete & Computational Geometry*, 57:104–124, 2017.
- [11] Goaoc, X., Mabillard, I., Paták, P., Patáková, Z., Tancer, M., and Wagner, U. On Generalized Heawood Inequalities for Manifolds: a Van Kampen–Flores-type Nonembeddability Result. *Israel Journal of Mathematics*, 222:841–866, 2017.
- [12] Devillers, O., Glisse, M., Goaoc, X., and Thomasse, R. Smoothed complexity of convex hulls by witnesses and collectors. *Journal of Computational Geometry*, 7:101–144, 2016.

- [13] Ha, J.-S., Cheong, O., Goacoc, X., and Yang, J. Geometric permutations of non-overlapping unit balls revisited. *Computational Geometry: Theory & Applications*, 53:36–50, 2016.
- [14] Goacoc, X., Matoušek, J., Paták, P., Z.Patáková, and Tancer, M. Simplifying inclusion-exclusion formulas. *Combinatorics, Probability and Computing*, 24:438–456, 2015.
- [15] Colin de Verdiere, E., Ginot, G., and Goacoc, X. Helly numbers of acyclic families. *Advances in Mathematics*, 253:163–193, 2014.
- [16] Cheong, O., Goacoc, X., and Nicaud, C. Set systems and families of permutations with small traces. *European Journal of Combinatorics*, 34:229–239, 2013.
- [17] Devillers, O., Glisse, M., Goacoc, X., Moroz, G., and Reitzner, M. The monotonicity of f-vectors of random polytopes. *Electronic Communications in Probability*, 18:1–8, 2013. (article 23).
- [18] Goacoc, X., Kim, H.-S., and Lazard, S. Bounded-Curvature Shortest Paths through a Sequence of Points Using Convex Optimization. *SIAM Journal of Computing*, 42:662–684, 2013.
- [19] Cheong, O., Goacoc, X., and Holmsen, A. Lower bounds to Helly numbers of line transversals to disjoint congruent balls. *Israel Journal of Mathematics*, 190:213–228, 2012.
- [20] Aronov, B., Cheong, O., Goacoc, X., and Rote, G. Lines pinning lines. *Discrete & Computational Geometry*, 45(2):230–260, 2011.
- [21] G. Batog and Goacoc, X. Inflating balls is NP-hard. *International Journal of Computational Geometry and Applications*, 21(4):403–415, 2011.
- [22] Goacoc, X., König, S., and Petitjean, S. Pinning a line by balls or ovaloids in \mathbb{R}^3 . *Discrete & Computational Geometry*, 45(2):303–320, 2011.
- [23] Goacoc, X., Kratochvíl, J., Okamoto, Y., Shin, C.-S., Spillner, A., and Wolff, A. Untangling a planar graph. *Discrete & Computational Geometry*, 42(4):542–569, 2009.
- [24] J. Demouth, Devillers, O., Glisse, M., and Goacoc, X. Helly-type theorems for approximate covering. *Discrete & Computational Geometry*, 42(3):379–398, 2009.
- [25] Borcea, C., Goacoc, X., and Petitjean, S. Line transversals to disjoint balls. *Discrete & Computational Geometry*, 1-3:158–173, 2008.
- [26] Cheong, O., Goacoc, X., Holmsen, A., and Petitjean, S. Helly-type theorems for line transversals to disjoint unit balls. *Discrete & Computational Geometry*, 1-3:194–212, 2008.
- [27] Brönnimann, H., Devillers, O., Dujmovic, V., Everett, H., Glisse, M., Goacoc, X., Lazard, S., Na, H.-S., and Whitesides, S. Lines and free line segments tangent to arbitrary three-dimensional convex polyhedra. *SIAM Journal of Computing*, 37(2):522–551, 2007.
- [28] Borcea, C., Goacoc, X., Lazard, S., and Petitjean, S. Common tangents to spheres in \mathbb{R}^3 . *Discrete & Computational Geometry*, 35(2):287–300, 2006.
- [29] Cortier, V., Goacoc, X., Lee, M., and Na, H.-S. A note on maximally repeated sub-patterns of a point set. *Discrete Mathematics*, 306(16):1965–1968, 2006.

- [30] Cheong, O., Goaoc, X., and Na, H.-S. Geometric permutations of disjoint unit spheres. *Computational Geometry: Theory & Applications*, 30:253–270, 2005.
- [31] Devillers, O., Dujmovic, V., Everett, H., Goaoc, X., Lazard, S., Na, H.-S., and Petitjean, S. The expected number of 3D visibility events is linear. *SIAM Journal of Computing*, 32(6):1586–1620, 2003.

ARTICLES IN REFEREED CONFERENCE PROCEEDINGS

- [32] Goaoc, X., Holmsen, A., and Patáková, Z. A stepping-up lemma for topological set systems. In *Proc. 37th Ann. Symposium on Computational Geometry (SoCG)*, pages 40:1–40:15. 2021.
- [33] Goaoc, X. and Welzl, E. Convex hulls of random order types. In *Proc. 36th Ann. Symposium on Computational Geometry (SoCG)*, pages 49:1–49:15. 2020. (Best paper award).
- [34] Goaoc, X., Holmsen, A., and Nicaud, C. An experimental study of forbidden patterns in geometric permutations by combinatorial lifting. In *Proc. 35th Ann. Symposium on Computational Geometry (SoCG)*, pages 40:1–40:16. 2019.
- [35] Bukh, B., Goaoc, X., Hubard, A., and Trager, M. Consistent sets of lines with no colorful incidence. In *Proc. 34th Ann. Symposium on Computational Geometry (SoCG)*, pages 17:1–17:14. 2018.
- [36] Goaoc, X., Paták, P., Patáková, Z., Tancer, M., and Wagner, U. Shellability is NP-Complete. In *Proc. 34th Ann. Symposium on Computational Geometry (SoCG)*, pages 41:1–41:15. 2018. (Best paper award).
- [37] Aronov, B., Cheong, O., Dobbins, M., and Goaoc, X. The number of holes in the union of translates of a convex set in three dimensions. In *Proc. 32nd Ann. Symposium on Computational Geometry (SoCG)*. 2016. (Best paper award).
- [38] Devillers, O., Glisse, M., Goaoc, X., and Thomasse, R. On the smoothed complexity of convex hulls. In *Proc. 31st Ann. Symposium on Computational Geometry (SoCG)*, pages 224–238. 2015.
- [39] Goaoc, X., Hubard, A., de Joannis de Verclos, R., Sereni, J.-S., and Volec, J. Limits of order types. In *Proc. 31st Ann. Symposium on Computational Geometry (SoCG)*, pages 300–314. 2015.
- [40] Goaoc, X., Mabillard, I., Paták, P., Patáková, Z., Tancer, M., and Wagner, U. On Generalized Heawood Inequalities for Manifolds: a Van Kampen–Flores-type Nonembeddability Result. In *Proc. 31st Ann. Symposium on Computational Geometry (SoCG)*, pages 476–490. 2015.
- [41] Goaoc, X., Paták, P., Patáková, Z., Tancer, M., and Wagner, U. Bounding Helly numbers via Betti numbers. In *Proc. 31st Ann. Symposium on Computational Geometry (SoCG)*, pages 507–521. 2015.

- [42] Devillers, O., Glisse, M., and Goaoc, X. Complexity analysis of random geometric structures made simpler. In *Proc. 29th Ann. Symposium on Computational Geometry (SoCG)*, pages 167–176. 2013.
- [43] Colin de Verdière, Éric., Ginot, G., and Goaoc, X. Multinerves and Helly numbers of acyclic families. In *Proc. 28th Ann. Symposium on Computational Geometry (SoCG)*, pages 209–218. 2012. (Best paper award).
- [44] G. Batog, Goaoc, X., and Ponce, J. Admissible linear map models of linear cameras. In *Proc. 23rd IEEE Conference in Computer Vision and Pattern Recognition (CVPR) 2010*. 2010.
- [45] Devillers, O., Erickson, J., and Goaoc, X. Empty-ellipse graphs. In *Proc. 19th Symposium on Discrete Algorithms (SODA)*, pages 1249–1257. 2008.
- [46] J. Demouth, Devillers, O., Glisse, M., and Goaoc, X. Helly-type theorems for approximate covering. In *Proc. 24th Ann. Symposium on Computational Geometry (SoCG)*, pages 120–128. 2008.
- [47] Borcea, C., Goaoc, X., and Petitjean, S. Line transversals to disjoint balls. In *Proc. 23rd Ann. Symp. on Computational Geometry (SoCG)*, pages 245–254. 2007.
- [48] Goaoc, X., Kratochvil, J., Okamoto, Y., Shin, C.-S., and Wolff, A. Moving vertices to make drawings plane. In *Proc. 15th International Symposium on Graph Drawing (GD)*, volume 4875 of *Lecture Notes in Computer Science*, pages 101–112. 2007.
- [49] Cheong, O., Goaoc, X., and Holmsen, A. Hadwiger and Helly-type theorems for disjoint unit spheres in \mathbb{R}^3 . In *Proc. 21st Ann. Symp. on Computational Geometry (SoCG)*, pages 10–15. 2005.
- [50] de Berg, M., Goaoc, X., and der Stappen, A. F. V. A polynomial-time algorithm to design push plans for sensorless parts sorting. In *Proc. Robotics Science and Systems (RSS)*. 2005.
- [51] Brönnimann, H., Devillers, O., Dujmovic, V., Everett, H., Glisse, M., Goaoc, X., Lazard, S., Na, H.-S., and Whitesides, S. The number of lines tangent to arbitrary polytopes in \mathbb{R}^3 . In *Proc. 20th Ann. Symposium on Computational Geometry (SoCG)*, pages 46–55. 2004.
- [52] Cheong, O., Goaoc, X., and Na, H.-S. Disjoint unit spheres admit at most two line transversals. In *Proc. 11th Ann. European Sympos. on Algorithms (ESA)*, volume 2832 of *Lecture Notes in Computer Science*, pages 127–135. 2003.

OTHER WRITINGS

- [53] Cheong, O., Goaoc, X., and Holmsen, A. F. No weak epsilon nets for lines and convex sets in space, 2022. <https://arxiv.org/abs/2202.02719>.
- [54] Cheong, O., Goaoc, X., and Holmsen, A. F. The topology of the set of line transversals, 2022. <https://arxiv.org/abs/2205.14681>.

- [55] Demouth, Julien and Goaoc, X. Computing Direct Shadows Cast by Convex Polyhedra. In *25th European Workshop on Computational Geometry - EuroCG*. 2009. <http://hal.inria.fr/inria-00431544/en/>.
- [56] Goaoc, X., Kim, H.-S., and Lee, J.-G. There are arbitrary large minimal 2-pinning configurations. In *The First Asian Association for Algorithms and Computation Annual Meeting - AAAC*. 2008. <http://hal.inria.fr/inria-00431768/en/>.
- [57] Borcea, C., Goaoc, X., Lazard, S., and Petitjean, S. On tangents to quadric surfaces, 2004. <http://www.arxiv.org/abs/math.AG/0402394>.
- [58] Alt, H., Glisse, M., and Goaoc, X. On the worst-case complexity of the silhouette of a polytope. In *15th Canadian Conference on Computational Geometry - CCCG*. 2003. <http://hal.inria.fr/inria-00099478/en/>.