Jean Cardinal

Université Libre de Bruxelles (ULB)
Faculté des Sciences
Computer Science Department, CP 212
Bld du Triomphe
1050 Brussels, Belgium

Research Interests **Algorithms**, **Discrete Mathematics**, and **Discrete Geometry**.

Education

Ph. D. in Computer Science, Université Libre de Bruxelles (ULB), Sept. 2001. Thesis : "Quantization with Multiple Constraints", advisor: Pr. Yves Roggeman.

***Licence* (B.S.)** in Computer Science, with Greatest Honors, Université Libre de Bruxelles (ULB), June 1998.

***Baccalauréat* C** (maths-physics), Lycée Français Jean Monnet, Brussels, June 1994.

Positions

Oct. 2016 - present : Professor (*Professeur*), Université Libre de Bruxelles (ULB)

Jan. 2002 - Sept. 2016 : Associate Professor (*Chargé de Cours*), Université Libre de Bruxelles (ULB)

Oct. 1998 - Dec. 2001 : FNRS Research Fellow (*Fonds National de la Recherche Scientifique*)

Mobility

Jul. 2019 : Visiting Professor at **Carleton University**, Ottawa, Canada, with Pr. Prosenjit Bose (RISE CONNECT project).

Mar. 2019 : Visiting Professor at **CINVESTAV**, Mexico, with Pr. Ruy Fabila-Monroy (RISE CONNECT project).

Jan-Feb. 2018 : Visiting Professor at **Universidad de Santiago de Chile** (USACH), Chile, with Pr. Pablo Perez-Lantero (RISE CONNECT project).

Mar.-Apr. 2017 : Invited Professor at **UPC Barcelona** (Spain), with Pr. Vera Sacristan and Rodrigo Silveira, Department of Applied Maths.

Apr.-May 2012 : Invited Professor at **ETH Zürich** (Switzerland), with Pr. Emo Welzl and Michael Hoffmann, Department of Computer Science.

Aug. 2010 : Invited Professor at the **University of Bonn** (Germany), with Pr. Marek Karpinski, Computer Science Department.

Apr. 2007 and May 2010 : Invited Professor at the **Université de Paris 13** (France), with Pr. Christian Lavault, Vlady Ravelomanana, and Mario Valencia-Pabon, Laboratoire d'Informatique de Paris-Nord (LIPN).

Apr. 2008 : Invited Professor at the **Universidad de Alcalá** (Spain), with Pr. Pedro Ramos and Pr. David Orden, Mathematics Department.

Mar. 2005 and Apr. 2006 : Invited researcher at the **Universidad de Valladolid** (Spain), with Pr. Belén Palop del Rio, Computer Science Department.

Oct. - Nov. 2003 and Oct. 2004 : Invited researcher at the **Universität Konstanz** (Germany), with M. Röder, Dr. Raouf Hamzaoui and Pr. Dietmar Saupe, Multimedia Signal Processing Group.

Aug. 2004 : Invited researcher at **GERAD** (Groupe d'études et de recherche en analyse des décisions), Montréal (Canada), with Dr. Samuel Fiorini and Pr. Odile Marcotte.

Apr. - June 2001 : Invited researcher at the **University of Washington** (UW), Seattle (WA, USA), with Pr. Eve Riskin and Richard Ladner, Data Compression Laboratory. Visit supported by a grant from the Communauté Française de Belgique.

Nov. - Dec. 1999 : Invited researcher at the **Institut für Informatik, Universität Leipzig** (Germany), with Pr. Dietmar Saupe, Computer Graphics and Image Processing Group. Visit supported by a grant from the FNRS.

Teaching

Currently :

- INFO-F-413 – Data Structures and Algorithms – MA in Computer Science
- INFO-F-206 – Informatique – Bachelier en Sciences
- INFO-F-203 – Algorithmique 2 – Bachelier en Sciences Informatiques

Previously :

- INFO-F-408 – Computability and Complexity – MA in Computer Science
- INFO-F-534 – Computer Science Seminars – MA in Computer Science

- INFO-F-438 – Algorithms in Computational Biology – MA in Bioinformatics
- INFO-F-206 – Informatique – Bachelier en Sciences
- INFO-F-504 – Seminars on Algorithms and Optimization – MA in Computer Science
- INFO-F-502 – Séminaire d'informatique approfondie – Licence en informatique
- INFO-F-507 – Algorithmique pour la bioinformatique – Master en bioinformatique
- INFO-F-401 – Structures de données et algorithmes – Licence en informatique
- INFO-F-525 – Modélisation informatique – Licence en Actuariat
- INFO-F-101 – Programmation – Candidature en informatique

Invited courses at other institutions :

- Geometric Graphs: Algorithms and Combinatorics (FS12), **ETH Zürich**, April-May 2012, joint course with Pr. Emo Welzl, Michael Hoffmann, and Vincent Kusters
- Graph Problems with Applications in Source and Channel Coding, **Universität Konstanz**, October 2003

Funding

2018 - 2020 : **Tournesol - Fonds Hubert Curien** research project, "Propriétés combinatoires, algorithmiques et métriques des graphes de flips", 2,400 €.

2018 - 2020 : **FNRS** research project ("crédits aux chercheurs"), "Computational Geometry and Machine Learning", 10,000 €.

2017 - 2020 : **RISE** project (Research and Innovation Staff Exchange), Marie Skłodowska-Curie actions, "Combinatorics of Networks and Computation (CONNECT)", co-PI, together with collaborators from UPC Barcelona, Universidad de Alcalá, Universidad de Sevilla, Ústav informatiky AV Czech Republic, Universita degli Studi Roma Tre, TU Graz, Universidad de Zaragoza, and several partner institutions in Chile, Mexico, and Canada. approx. 324,000 €.

2012 - 2017 : **ARC** project (Communauté Française de Belgique), "Unifying COmputational, PHYsical, and MAthematical approaches to complexity (COPHYMA)", co-PI, together with N. Cerf, S. Fiorini, S. Langerman and J. Roland (ULB). approx. 610,000 €.

2011 - 2014 : **EUROCORES** (ESF) project, EuroGIGA programme, "ComPoSe – Combinatorics of Point Sets and Arrangements of Objects" (`http://www.eurogiga-compose.eu/about.php`), co-PI together with Oswin Aichholzer (TU Graz), Stefan Felsner (TU Berlin), Ferran Hurtado (UPC Barcelona), János Pach (EPFL), Pavel Valtr (Charles University), and Emo Welzl (ETH Zürich). 1,572,968 €.

2006 - 2011 : **ARC** project (Communauté Française de Belgique), "Hard Combinatorial Problems: Geometry and Algorithms", co-PI, together with J.-P. Doignon, S. Fiorini, B. Fortz, M. Labbé, S. Langerman and D. Leemans (ULB). 402,151 €.

2004 - 2005 : **Banque Nationale de Belgique** (BNB), "Pricing and Location of Geometric Transportation Facilities", in collaboration with S. Langerman (ULB). 9,000 €.

2002 - 2011 : Three **FNRS** research projects ("Crédits aux chercheurs").

Invited Talks

May 2021 : "Flip Distances between Graph Orientations", minisymposium on Reconfiguration at CanaDAM (Canadian Discrete and Algorithmic Mathematics Conference), Jointly hosted by the University of Manitoba and the University of Winnipeg (online).

Jun. 2018 : "Topological Drawings of Complete Bipartite Graphs", International Symposium on Computational Geometry (SoCG), Workshop on combinatorial geometry, Budapest, Hungary.

Jun. 2018 : "The geometry of 3SUM, k-SUM, and related problems", International Symposium on Computational Geometry (SoCG), Workshop on fine-grained complexity of hard geometric problems, Budapest, Hungary.

Dec. 2017 : "The geometry of 3SUM, k-SUM, and related problems", Mini-course at the Journés de Géométrie Algorithmique (JGA17), Aussois, France.

Jun. 2017 : "The geometry of k-SUM problems and their relatives", XVII Spanish Meeting on Computational Geometry, Alicante, Spain.

Jun. 2016 : "Geometric Representations of Graphs and the Existential Theory of the Reals", Joint SoCG-STOC Workshop on Geometric Representations of Graphs.

Aug. 2013 : "On Generalized Comparison-Based Sorting Problems", Space-Efficient Data Structures, Streams, and Algorithms, in celebration of Ian Munro's 66th Birthday (IanFest).

Sep. 2012 : "Arrangements of Curves: Combinatorial Structures and Algorithms", 14th Mons Days of Theoretical Computer Science, Louvain-la-Neuve, Belgium, organized by Dr. Raphaël Jungers.

June 2012 : "Minimum Entropy Combinatorial Optimization Problems", Gremo Workshop, ETH Zürich, Switzerland, organized by Pr. Emo Welzl.

Feb. 2012 : "Sorting and a Tale of Two Polytopes", Algorithms and Permutations workshop, Paris, France, co-organized by Dr. Xavier Goaoc.

Jan. 2012 : "The Clique Problem in Ray Intersection Graphs", Dutch Computational Geometry Day, Utrecht, Netherlands.

Jan. 2012 : "The Clique Problem in Ray Intersection Graphs", Iberian Workshop on Computational Geometry (IWCG,12), Palencia, Spain, organized by Pr. David Orden and Pr. Belén Palop del Rio.

Jul. 2009 : "Minimum Entropy Combinatorial Optimization Problems", Computability in Europe (CiE'09), "Optimization and Approximation" special session, Heidelberg, Germany, organized by Pr. Magnus Halldórsson.

Seminars

Oct. 2020 : "Trees on Trees", DIMAP Seminar, Centre for Discrete Mathematics and its Applications, University of Warwick, UK (online).

Oct. 2020 : "Flip distances between graph orientations", Los Angeles Combinatorics and Complexity Seminar, LA, USA (online).

Feb. 2017 : "Topological Drawings of Complete Bipartite Graphs", Courant Institute, New York University (NYU), New York, USA.

May 2016 : "Solving k-SUM Using Few Linear Queries", IRIF, Université Paris-Diderot (Paris 7), Paris, France.

Mar. 2016 : "Solving k-SUM Using Few Linear Queries", Laboratoire d'Informatique Gaspard Monge, Université Paris-Est, Marne-la-Vallée, France.

Nov. 2015 : "The Existential Theory of the Reals in Computational Geometry", Discrete Geometry Seminar, Institut Henri Poincaré (IHP), Paris, France.

June 2015 : "General Position Subsets and Incidence Bounds", TU Berlin, MDS (Methods for Discrete Structures) seminar, Berlin, Germany.

Jun. 2013 : "Covering Decomposition and Geometric Hypergraph Coloring", Freie Universität Berlin, Germany.

Jan. 2013 : "Covering Decomposition and Geometric Hypergraph Coloring", University of Oxford, UK.

May 2012 : "Problems on Geometric Intersection Graphs", University of Konstanz, Germany.

Apr. 2012 : "The Clique Problem in Ray Intersection Graphs", MittagSeminar, ETH Zürich, Switzerland.

Aug. 2011 : "Sorting under Partial Information (without the Ellipsoid Algorithm)", University of Maryland, College Park (MD), USA.

Aug. 2011 : "Sorting under Partial Information (without the Ellipsoid Algorithm)", AT&T Shannon Labs, Florham Park (NJ), USA.

Aug. 2010 : "Sorting under Partial Information (without the Ellipsoid Algorithm)", University of Bonn, Germany.

Apr. 2010 : "Sorting under Partial Information (without the Ellipsoid Algorithm)", LIPN, Université de Paris 13, France, CALIN Team seminar.

Feb. 2010 : "Sorting under Partial Information (without the Ellipsoid Algorithm)", Oxford Mathematical Institute, UK.

Feb. 2010 : "Sorting under Partial Information (without the Ellipsoid Algorithm)", Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland.

Apr. 2007 : "Tight Results on Minimum Entropy Set Cover", LIX, Ecole Polytechnique, France.

Jan. 2005 : "Minimum Entropy Graph Colorings and Coding with Side Information", Laboratoire Spécification et Vérification (LSV), École Normale Supérieure de Cachan, France.

Nov. 2004 : "On Minimum Entropy Graph Colorings", Center for Operations Research and Econometrics (CORE), Université Catholique de Louvain, Belgium.

Feb. 2004 : "Multiple Description Coding", IRIS Group, Dr. P. Schelkens, Electronics and Informatics (ETRO) Department of the Vrije Universiteit Brussel (VUB), Belgium.

Oct. 2003 : "Entropy-constrained Index Assignments for Multiple Description Quantizers", Lehrstuhl für Nachrichtentechnik (LNT), Pr. J. Hagenauer, Technische Universität München, Germany.

Invited Workshops

May 2021 : 2nd Virtual Barbados Workshop on Computational Geometry, organized by Erik Demaine (MIT) (online).

Mar. 2020 : Virtual Barbados Workshop on Computational Geometry, organized by Erik Demaine (MIT) (online).

Jun. 2018 : Emléktablá Workshop on combinatorial geometry, Gárdony, Velence lake, Hungary, organized by Balázs Keszegh, Dömötör Pálvölgyi, and Balázs Patkós (Rényi Institute).

Jun. 2017 : Gremo Workshop on Open Problems (GWOP), Pochtenalp (BE), Switzerland, organized by Michael Hoffmann and Emo Welzl (ETH).

Mar. 2017 : Bellairs workshop on Geometry and Graphs, Holetown, Barbados, organized by Prosenjit Bose, Vida Dujmovic, Stefan Langerman, and Pat Morin (U. Carleton, Ottawa).

Jan. 2017 : 32nd Bellairs Winter Workshop on Computational Geometry, Holetown, Barbados, organized by Erik Demaine (MIT).

Sept. 2016 : Order & Geometry Workshop, Poznań, Poland, organized by Stefan Felsner (TU Berlin) and Piotr Micek (U. Krakow).

Jun. 2016 : Gremo Workshop on Open Problems (GWOP), St. Niklausen (OW), Switzerland, organized by Michael Hoffmann and Emo Welzl (ETH).

Apr. 2015 : Workshop on Information Theory in Complexity Theory and Combinatorics, UC Berkeley, USA.

Mar. 2015 : Bellairs workshop on Geometry and Graphs, Holetown, Barbados, organized by Prosenjit Bose, Vida Dujmovic, Stefan Langerman, and Pat Morin (U. Carleton, Ottawa).

Feb. 2015 : ComPoSe Workshop on Order Types and Rotation Systems, Strobl, Austria, organized by Oswin Aichholzer (TU Graz).

Jan. 2015 : International workshop on graph decomposition, CIRM, Marseille, France, organized by Stephan Kreutzer, Christophe Paul, Nicolas Trotignon, and Paul Wollan.

Jul. 2014 : Gremo Workshop on Open Problems (GWOP), Val Sinestra (GR), Switzerland, organized by Michael Hoffmann and Emo Welzl (ETH).

Mar. 2014 : Bellairs workshop on Geometry and Graphs, Holetown, Barbados, organized by Prosenjit Bose, Vida Dujmovic, Stefan Langerman, and Pat Morin.

Jul. 2013 : Joint ComPoSe-VORONOI Meeting, Graz University of Technology, Austria, organized by Pr. Oswin Aichholzer, Thomas Hackl, and Birgit Vogtenhuber.

Feb. 2013 : Sevilla ComPoSe workshop, Sevilla, Spain, organized by Pr. José Miguel Díaz-Báñez.

June 2012 : Gremo Workshop on Open Problems (GWOP), Kurhaus Bergün, organized by Michael Hoffmann and Emo Welzl (ETH).

Apr. 2012 : EuroGIGA-ComPoSe Workshop on Geometric Graphs and Order Types, TU Graz, Austria, organized by Pr. Oswin Aichholzer, Thomas Hackl, and Birgit Vogtenhuber.

Oct. 2011 : EuroGIGA-Voronoi Kickoff Meeting, Lugano, Switzerland, organized by Pr. Günter Rote and Evanthia Papadopoulou.

Jul. 2011 : 2nd Cargese workshop in combinatorial optimization, Institut d'Etudes Scientifiques de Cargese, Corsica, France, organized by Pr. Samuel Fiorini, Gianpaolo Oriolo, Gautier Stauffer, and Paolo Ventura.

May 2011 : EuroGIGA-ComPoSe workshop on the Erdős-Szekeres theorem: extensions and variations, CIEM, Castro Urdiales, Spain, organized by Pr. Ferran Hurtado and Oswin Aichholzer.

May 2009 : Carleton computational geometry workshop, Ottawa, Canada, organized by Pr. Prosenjit Bose.

Apr. 2009 : ULB-UPC computational geometry workshop, Barcelona, Spain, organized by Pr. Ferran Hurtado.

Feb. 2009 : Bellairs computational geometry workshop, Holetown, Barbados, organized by Pr. Erik Demaine and Godfried Toussaint.

Jul. 2006 : 12th annual meeting on the Analysis of Algorithms, Alden Biesen, Belgium, organized by Pr. Luc Devroye.

Students

- **Justin Dallant** (FRIA grant, joint supervision with John Iacono). "Towards optimal polynomial-time algorithms for fundamental computational problems at the intersection of computational geometry and machine learning.".
- **Aurélien Ooms**. Graduated in October 2019, thesis: "Algorithms and Data Structures for 3SUM and Friends".
- **Keno Merckx** (joint supervision with Jean-Paul Doignon). Graduated in June 2019, thesis: "Optimization and Realizability Problems for Convex Geometries".
- **Eglantine Camby** (joint supervision with Samuel Fiorini). Graduated in June 2015, thesis: "Connecting hitting sets and hitting paths in graphs".
- **Eythan Levy**. Graduated in March 2009, thesis: "Approximation Algorithms for Covering Problems in Dense Graphs".
- **Gwenaël Joret** (joint supervision with Pr. Jean-Paul Doignon). Graduated in December 2007, thesis: "Entropy and Stability in Graphs".
- **Sébastien Collette** (joint supervision with Dr. Stefan Langerman). Graduated in November 2006, thesis: "Regions, Distances and Graphs".

I also supervised more than 20 Master theses, and several postdoc researchers: Pegah Kamousi (PhD UCSB), Maria Saumell (PhD UPC Barcelona, now Postdoc in Pilsen, Czech republic), Matias Korman (now at U. Sendai, Japan), Luca Castelli (now at École Polytechnique, Paris), Raphaël Jungers (now at UCL, Belgium).

Thesis Committees (outside Belgium)

- Julian Ritter, "Shard Polytopes and Quotientopes for Lattice Congruences of the Weak Order", École Polytechnique, advisor: Vincent Pilaud, 2021.
- Lucas Isenmann, "From Planar Graphs to Higher Dimensions", Université de Montpellier, advisor: Daniel Gonçalves, 2019.
- Jerri Nummenpalo, "Middle Levels Theorem, Odd Graph Hamiltonicity and Satisfiability Sampling", ETH Zurich, advisor: Emo Welzl, 2018.
- Bruno Jartoux, "On combinatorial approximation algorithms in geometry", Université Paris-Est, advisor: Nabil Mustafa, 2018.
- Guilherme Dias da Fonseca, "Approximate Polytope Membership Queries and Applications" (HDR), Université Clermont Auvergne and INRIA Sophia Antipolis, 2018.
- Udo Hoffmann, "Intersection graphs and geometric objects in the plane", TU Berlin, advisor: Stefan Felsner, 2016.
- Luis F. Barba, "On Proximity Problems in Euclidean Spaces", advisors: Pr. P. Bose, Vida Dujmovic, and Pat Morin (Carleton University), Pr. Langerman (ULB), joint ULB-Carleton degree. 2016.
- Mathieu Liedloff, "Algorithmes exponentiels pour l'étiquetage, la domination, et l'ordonnancement" (HDR), Université d'Orléans, France, 2015.
- Sander Verdonschot, "Flips and Spanners", Carleton University (Ottawa, Canada), advisors: Prosenjit Bose, Vida Dujmovic, and Pat Morin, 2015.
- Maria Saumell, "Some Problems on Proximity Graphs", UPC Barcelona (Spain), advisor: Ferran Hurtado and Vera Sacristan, 2011.
- Natalya Usotskaya, "Exploiting Geometric Properties in Combinatorial Optimization", Maastricht University (Netherlands), advisor: Stan Van Hoesel and Alex Grigoriev, 2011.
- Joyce Van Loon, "Algorithmic Pricing", Maastricht University (Netherlands), advisors: Marc Uetz, Alex Grigoriev, and Stan van Hoesel, March 2009.

Refereeing

I served as a referee for numerous conferences in computer science (including STOC, FOCS, SODA, STACS, SoCG, ESA, ICALP, SWAT, WADS, MFCS), and journals in computer science and discrete mathematics (including ACM Transactions on Algorithms, Algorithmica, Theoretical Computer Science, Combinatorica, Computational Geometry: Theory and Applications, Discrete & Computational Geometry, Electronic Journal of Combinatorics, European Journal of Combinatorics, Random Structures and Algorithms, and Mathematics of Operations Research).

I was also asked to review research projects submitted to the **Hungarian Research Agency** (OTKA), **Foundation for Polish Science**, the **National Sciences and Engineering Research Council of Canada** (NSERC), and the **Israel Science Foundation** (ISF).

Conference Committees

- Member of the program committee of the **37th International Symposium on Computational Geometry** (SoCG'21), online.
- Member of the program committee of the **32nd Canadian Conference on Computational Geometry** (CCCG'20), online.
- Member of the program committee of the **36th European Workshop on Computational Geometry** (EuroCG'20), online.
- Member of the program committee of the **22nd Japan Conference on Discrete and Computational Geometry, Graphs, and Games** (JCDCG3), Tokyo University of Science, Tokyo, Japan.
- Member of the program committee of the **43th International Symposium on Mathematical Foundations of Computer Science** (MFCS'18), Liverpool, UK.
- Member of the program committee of the **28th International Symposium on Algorithms And Computation** (ISAAC'17), Phuket, Thailand.
- Member of the program committee of the **34th International Symposium on Theoretical Aspects of Computer Science** (STACS'17), Hannover, Germany.
- Member of the program committee of the **28th Canadian Conference on Computational Geometry** (CCCG'16), Simon Fraser University, Vancouver BC, Canada.
- Member of the program committee of the **Symposium on Computational Geometry**, (SoCG'16), Boston, USA.

- Member of the program committee of the **CG Week Workshops 2015**, Eindhoven, Netherlands.
- Member of the program committee of the **XV Spanish Meeting in Computational Geometry** (EGC'15), UPC Barcelona, Spain.
- Member of the program committee of the **26th Canadian Conference on Computational Geometry** (CCCG'14), University of Halifax, Canada.
- Member of the program committee of the **International Conference on Automata, Languages, and Programming** (ICALP'14), IT University of Copenhagen, Denmark.
- Member of the program committee of the **International Workshop on Graph-Theoretic Concepts in Computer Science** (WG'14), Le Domaine de Chalès, near Orléans, France.
- Member of the program committee of the **25th Canadian Conference on Computational Geometry** (CCCG'13), University of Waterloo, Canada.
- Member of the organizing committee of the **25th European Workshop on Computational Geometry** (EuroCG'09), Brussels, 2009. This three-day meeting took place at ULB and gathered 120 participants. Invited speakers were Prosenjit Bose (Carleton U., Canada), Luc Devroye (McGill U., Canada), and Mark Overmars (Utrecht U., Netherlands).
- Member of the program committe of the **20th Canadian Conference on Computational Geometry** (CCCG'08), McGill University in Montreal, Canada.
- Member of the organizing committee of the **26th Symposium on Information Theory in the Benelux**, held in Brussels in May 2005 under the auspices of the Werkgemeenschap in informatie- en communicatietheorie (WIC).

Development Cooperation

In October 2006 and October 2007, I gave a course on data structures and algorithms at the Université d'Antananarivo in Madagascar, in the context of the graduate school IGMA (Informatique et Génie MAthématique) in computer science and mathematics. The project was funded by the AUF (Agence Universitaire de la Francophonie).

Publications

Journals

[1] O. Aichholzer, J. Cardinal, T. Huynh, K. Knauer, T. Mütze, R. Steiner, and B. Vogtenhuber. Flip distances between graph orientations. *Algorithmica*, 83(1):116–143, 2021.

[2] J. Cardinal, J. Nummenpalo, and E. Welzl. Solving and sampling with many solutions. *Algorithmica*, 82(5):1474–1489, 2020.

[3] J. Cardinal, E. D. Demaine, D. Eppstein, R. A. Hearn, and A. Winslow. Reconfiguration of satisfying assignments and subset sums: Easy to find, hard to connect. *Theor. Comput. Sci.*, 806:332–343, 2020.

[4] L. Barba, J. Cardinal, M. Korman, S. Langerman, A. van Renssen, M. Roeloffzen, and S. Verdonschot. Dynamic graph coloring. *Algorithmica*, 81(4):1319–1341, 2019.

[5] L. Barba, J. Cardinal, J. Iacono, S. Langerman, A. Ooms, and N. Solomon. Subquadratic algorithms for algebraic 3sum. *Discret. Comput. Geom.*, 61(4):698–734, 2019.

[6] J. Cardinal, J.-P. Doignon, and K. Merckx. Finding a maximum-weight convex set in a chordal graph. *J. Graph Algorithms Appl.*, 23(2):167–190, 2019.

[7] J. Cardinal, T. M. Chan, J. Iacono, S. Langerman, and A. Ooms. Subquadratic encodings for point configurations. *J. Comput. Geom.*, 10(2):99–126, 2019.

[8] J. Cardinal, S. Langerman, and P. Pérez-Lantero. On the diameter of tree associahedra. *Electron. J. Comb.*, 25(4):P4.18, 2018.

[9] J. Cardinal, V. Sacristán, and R. I. Silveira. A note on flips in diagonal rectangulations. *Discret. Math. Theor. Comput. Sci.*, 20(2), 2018.

[10] J. Cardinal, S. Felsner, T. Miltzow, C. Tompkins, and B. Vogtenhuber. Intersection graphs of rays and grounded segments. *J. Graph Algorithms Appl.*, 22(2):273–295, 2018.

[11] J. Cardinal and S. Felsner. Topological drawings of complete bipartite graphs. *J. Comput. Geom.*, 9(1):213–246, 2018.

[12] J. Cardinal, M. Hoffmann, V. Kusters, C. D. Tóth, and M. Wettstein. Arc diagrams, flip distances, and Hamiltonian triangulations. *Comput. Geom.*, 68:206–225, 2018.

[13] J. Cardinal and U. Hoffmann. Recognition and complexity of point visibility graphs. *Discrete & Computational Geometry*, 57(1):164–178, 2017.

[14] J. Cardinal, M. S. Payne, and N. Solomon. Ramsey-type theorems for lines in 3-space. *Discrete Mathematics & Theoretical Computer Science*, 18(3), 2016.

[15] J. Cardinal, J.-P. Doignon, and K. Merckx. On the shelling antimatroids of split graphs. *Discrete Mathematics & Theoretical Computer Science*, 19(1), 2017.

[16] K. Merckx, J. Cardinal, and J.-P. Doignon. On the shelling antimatroids of split graphs. *Electronic Notes in Discrete Mathematics*, 55:199–202, 2016.

[17] J. Cardinal, C. D. Tóth, and D. R. Wood. General position subsets and independent hyperplanes in d-space. *Journal of Geometry*, 108(1):33–43, 2017.

[18] O. Aichholzer, J. Cardinal, V. Kusters, S. Langerman, and P. Valtr. Reconstructing point set order types from radial orderings. *International Journal of Computational Geometry and Applications*, 26(3-4):167–184, 2016.

[19] J. Cardinal. Computational geometry column 62. *SIGACT News*, 46(4):69–78, 2015.

[20] J. Cardinal and V. Kusters. The complexity of simultaneous geometric graph embedding. *Journal of Graph Algorithms and Applications*, 19(1):259–272, 2015.

[21] J. Cardinal, M. Hoffmann, and V. Kusters. On universal point sets for planar graphs. *Journal of Graph Algorithms and Applications*, 19(1):529–547, 2015.

[22] J. Cardinal and S. Felsner. Covering partial cubes with zones. *Electronic Journal of Combinatorics*, 22(3):P3.31, 2015.

[23] O. Aichholzer, J. Cardinal, T. Hackl, F. Hurtado, M. Korman, A. Pilz, R. I. Silveira, R. Uehara, P. Valtr, B. Vogtenhuber, and E. Welzl. Cell-paths in mono- and bichromatic line arrangements in the plane. *Discrete Mathematics & Theoretical Computer Science*, 16(3):317–332, 2014.

[24] J. Cardinal, K. B. Knauer, P. Micek, and T. Ueckerdt. Making octants colorful and related covering decomposition problems. *SIAM Journal on Discrete Mathematics*, 28(4):1948–1959, 2014.

[25] E. Camby, J. Cardinal, S. Fiorini, and O. Schaudt. The price of connectivity for vertex cover. *Discrete Mathematics & Theoretical Computer Science*, 16(1):207–224, 2014.

[26] J. Cardinal, K. Knauer, P. Micek, and T. Ueckerdt. Making triangles colorful. *Journal of Computational Geometry*, 4(1):240–246, 2013.

[27] P. Bose, J. Cardinal, S. Collette, F. Hurtado, M. Korman, S. Langerman, and P.Taslakian. Coloring and guarding arrangements. *Discrete Mathematics & Theoretical Computer Science*, 15(3):139–154, 2013.

[28] J. Cardinal and G. Joret. Hitting all maximal independent sets of a bipartite graph. *Algorithmica*, 72(2):359–368, 2015.

[29] S. Cabello, J. Cardinal, and S. Langerman. The clique problem in ray intersection graphs. *Discrete & Computational Geometry*, 50(3):771–783, 2013.

[30] J. Cardinal, H. Ito, M. Korman, and S. Langerman. Helly numbers of polyominoes. *Graphs and Combinatorics*, 29(5):1221–1234, 2013.

[31] J. Cardinal and M. Korman. Coloring planar homothets and three-dimensional hypergraphs. *Computational Geometry: Theory and Applications*, 46(9):1027–1035, 2013.

[32] J. Cardinal, S. Fiorini, G. Joret, R. M. Jungers, and J. I. Munro. Sorting under partial information (without the ellipsoid algorithm). *Combinatorica*, 33(6):655–697, 2013.

[33] J. Cardinal, E. D. Demaine, S. Fiorini, G. Joret, I. Newman, and O. Weimann. The stackelberg minimum spanning tree game on planar and bounded-treewidth graphs. *Journal of Combinatorial Optimization*, 25(1):19–46, 2013.

[34] G. Aloupis, J. Cardinal, S. Collette, E. D. Demaine, M. L. Demaine, M. Dulieu, V. Hart, F. Hurtado, S. Langerman, M. Saumell, C. Seara, and P. Taslakian. Non-crossing matchings of points with geometric objects. *Computational Geometry: Theory and Applications*, 46(1):78–92, 2013.

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