

Curriculum Vitae

Therese Biedl

David R. Cheriton School of Computer Science, University of Waterloo

1 Personal Data

1.1 Education

Doctor of Philosophy, 1997, Rutgers University

Thesis title: The Three-Phase Method for Orthogonal Graph Drawing.

Ph.D. student 1993-1997, supervised by Endre Boros.

Diploma (\sim Master's) in Mathematics, 1996, Technical University Berlin.

Thesis title: Algorithms and Lower Bounds for Orthogonal Graph Drawing.

Diploma student 1989-1993 (full-time), 1993-1996 (part-time), supervised by Rolf Möhring.

Abitur (\sim High School degree, academic track), 1989, Georg-Herwegh Gymnasium, Berlin.

1.2 Employment

- Full professor (50% fractional load), David R. Cheriton School of Computer Science, University of Waterloo, July 2015–current.
- Associate professor (50% fractional load), David R. Cheriton School of Computer Science, University of Waterloo, March 2003–June 2015.
This period includes 21 months of maternity leave and 33 months of full-time employment.
- Visiting professor, Paris-Lodron Universität Salzburg, Austria. July 2012–June 2013.
- Visiting professor, Universität Passau, Germany. February 2005–July 2005.
- Assistant professor (full-time), School of Computer Science, University of Waterloo, July 1999–March 2003
- Research assistant professor (full-time), Department of Computer Science, University of Waterloo, January 1999–June 1999.

- Postdoctoral Fellow, School of Computer Science, McGill University, Montreal, Quebec, Canada. September 1997–December 1998
- Research Staff Member, Tom Sawyer Software, Berkeley, California, USA. June 1995–November 1995 (full-time), May 1996–June 1997 (part-time).
- Teaching Assistant and Grader, School of Business, Rutgers University, New Jersey, USA. Winter 1996 and Winter 1997 (part-time).
- Scientific Assistant, Zentralblatt für Mathematik, Berlin, Germany. March 1990–June 1992 (part-time).

1.3 Awards and honours received

- Outstanding performance award, University of Waterloo, 2013
- Nominated for “Preis für hervorragende Lehre” (prize for distinguished teaching), Paris-Lodron University of Salzburg, 2013.
- Best paper award at *Algorithms and Computation* (ISAAC’11), 2011.
- Ross & Muriel Cheriton Fellowship, David R. Cheriton School of Computer Science, University of Waterloo, 2011–2014.
- Outstanding performance award, University of Waterloo, 2010.
- Short-listed for the Distinguished Teacher Award, University of Waterloo, 2008.
- Short-listed for the Distinguished Teacher Award, University of Waterloo, 2005.
- Outstanding performance award, University of Waterloo, 2005
- Short-listed for the Distinguished Teacher Award, University of Waterloo, 2004.
- Short-listed for the Distinguished Teacher Award, University of Waterloo, 2002.
- Excellence Fellowship, Rutgers University, 1993–1995.
- Scholar of Studienstiftung des Deutschen Volkes (German National Academic Foundation), Germany, 1991–1995.

2 Research and scholarship

2.1 Research interests

I am interested in developing algorithms for geometric problems, in particular for graph drawing, planar graphs, and computational geometry.

2.2 Publications

2.2.1 Articles submitted

- S.1. J. Batzill and T. Biedl. Order-preserving drawings of trees with approximately optimal height (and small width). Submitted to *Journal of Graph Algorithms and Applications*. Submitted in September 2016 with 15 pages. Also appeared as CoRR report 1606.02233.
- S.2. T. Biedl. Ideal drawings of rooted trees with approximately optimal width. Submitted to *Journal of Graph Algorithms and Applications*. Submitted in August 2016 with 16 pages. Also appeared as CoRR 1502.02753 [cs.CG].
- S.3. T. Biedl. Optimum-width upward drawings of trees. Submitted to *Discrete and Computational Geometry*. Submitted in May 2016 with 22 pages. Also appeared as CoRR 1506.02096 [cs.CG].
- S.4. T. Biedl, T. Blä(*)sius, F. Klute(*), B. Niedermann(*), M. Nöllenburg, R. Prutkin(*), and I. Rutter(**). An ILP/SAT framework to determine graph parameters and graph representations. Submitted to *Journal of Graph Algorithms and Applications*. Submitted in April 2016 with 17 pages.
- S.5. T. Biedl, T. Chan, S. Lee(*), S. Mehrabi(**), F. Montecchiani(**), and H. Vosoughpour(*). On guarding orthogonal polygons with sliding cameras. Submitted to *WALCOM'17*. Submitted in September 2016 with 13 pages. Also appeared as ArXiv 1604.07099.
- S.6. T. Biedl and M. Derka. Order-preserving 1-string representations. Submitted to *SOFSEM'17*. Submitted in August 2016 with 12 pages.
- S.7. T. Biedl, S. Huber(**), and P. Palfrader(*). Planar matchings for weighted straight skeletons. Submitted to *Intl. J. Comput. Geometry Appl.* Special issue devoted to the best papers at ISAAC'14. Submitted in February 2015 with 16 pages. Revised version submitted in May 2016 with 17 pages.

2.2.2 Articles in refereed journals

- J.1. T. Biedl and M. Derka(*). The $(3, 1)$ -canonical order. *Journal of Graph Algorithms and Applications*, 20(2):347–362, 2016.
 - J.2. T. Biedl and M. Derka(*). 1-string B_2 -VPG-representations of planar graphs. *Journal on Computational Geometry*, 7(2), 2016. Accepted in December 2015 with 22 pages.
 - J.3. T. Biedl, M. Held, S. Huber(**), D. Kaaser(*), and P. Palfrader(*). A simple algorithm for computing positively weighted straight skeletons of monotone polygons. *Information Processing Letters*, 115(2):243–247, 2015.
 - J.4. T. Biedl. On triangulating k -outerplanar graphs. *Discrete Applied Mathematics*, 181:275–279, 2015.
 - J.5. T. Biedl, M. Held, S. Huber(**), D. Kaaser(*), and P. Palfrader(*). Weighted straight skeletons in the plane. *Computational Geometry: Theory and Applications*, 48(2):120–133, 2015.
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- J.6. T. Biedl and L.E. Ruiz Velá(*)zquez. Orthogonal cartograms with few corners per face. *Computational Geometry: Theory and Applications*, 47:282–294, 2014.
- J.7. T. Biedl and M. Vatshelle(*). The point-set embeddability problem for plane graphs. *International Journal of Computational Geometry and Applications*, 23(4-5):357–395, 2013.
- J.8. Md. J. Alam(*), T. Biedl, S. Felsner, A. Gerasch(*), M. Kaufmann, and S. G. Kobourov. Linear-time algorithms for hole-free rectilinear proportional contact graph representations. *Algorithmica*, 67(1):3–22, 2013.
- J.9. T. Biedl and L.E. Ruiz Velá(*)zquez. Drawing planar 3-trees with given face areas. *Computational Geometry: Theory and Applications*, 46(3):276–285, 2013.
- J.10. T. Biedl, S. Durocher(**), C. Engelbeen(*), S. Fiorini, and M. Young(*). Faster optimal algorithms for segment minimization with small maximal value. *Discrete Applied Mathematics*, 161(3):317–329, 2013.
- J.11. Md. J. Alam(*), T. Biedl, S. Felsner, M. Kaufmann, S. G. Kobourov, and T. Ueckerdt(*). Computing cartograms with optimal complexity. *Discrete & Computational Geometry*, 50(3):784–810, 2013.
- J.12. T. Biedl, A. Lubiw, M. Petrick(*), and M. J. Spriggs(*). Morphing orthogonal planar graph drawings. *ACM Transactions on Algorithms*, 9(4):29, 2013.
- J.13. T. Biedl, Md. T. Irfan(*), J. Iwerks(*), J. Kim, and J. S. B. Mitchell. The art gallery theorem for polyominoes. *Discrete & Computational Geometry*, 48(3):711–720, 2012.
- J.14. Md. J. Alam(*), T. Biedl, S. Felsner, M. Kaufmann, and S.G. Kobourov. Proportional contact graph representations. *Journal on Graph Algorithms and Application*, 16(3):701–728, 2012.
- J.15. T. Biedl, M. Hasan(*), and A. López-Ortiz. Efficient view point selection for silhouettes of polyhedra. *Computational Geometry: Theory and Applications*, 44(8):399–408, 2011.
- J.16. T. Biedl and B. Genc(*). Reconstructing orthogonal polyhedra from putative vertex sets. *Computational Geometry: Theory and Applications*, 44(8):409–417, 2011.
- J.17. T. Biedl. Small drawings of outerplanar graphs, series-parallel graphs, and other planar graphs. *Discrete and Computational Geometry*, 45(1):141–160, 2011.
- J.18. T. Biedl, M. Hasan(*), and A. López-Ortiz. Reconstructing convex polygons and polyhedra from edge and face counts in orthogonal projections. *International Journal of Computational Geometry and Applications*, 21(2):215–239, 2011.
- J.19. T. Biedl and B. Genc(*). Stoker’s theorem for orthogonal polyhedra. *International Journal of Computational Geometry and Applications*, 21(4):383–391, 2011.
- J.20. T. Biedl, S. Durocher(**), H. Hoos, S. Luang, J. Saia, and M. Young(*). A note on improving the performance of approximation algorithms for radiation therapy. *Information Processing Letters*, 111(7):326–333, 2011.
- J.21. T. Biedl, S. Durocher(**), and J. Snoeyink. Reconstructing polygons from scanner data. *Theoretical Computer Science*, 412(32):4161–4172, 2011.
- J.22. T. Biedl, A. Golynski(*), A.M. Hamel, A. López-Ortiz, and J.I. Munro. Sorting with networks of data structures. *Discrete Applied Mathematics*, 158(15):1579–1586, 2010.
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- J.23. A. Bains(*) and T. Biedl. Reconstructing hv-convex multi-coloured polyominoes. *Theoretical Computer Science*, 411(34-36):3123–3128, 2010.
- J.24. T. Biedl and M. Stern. Edge-intersection graphs of k -bend paths in grids. *Discrete Mathematics and Theoretical Computer Science*, 12(1), 2010. No page-number (electronic journal).
- J.25. T. Biedl, A. Lubiw, and M. Spriggs(*). Morphing polyhedra with parallel faces: Counterexamples. *Computational Geometry: Theory and Applications*, 42(5):395–402, 2009.
- J.26. T. Biedl, F.J. Brandenburg, and X. Deng. Crossings and permutations. *Discrete Mathematics*, 309(7):1813–1823, 2009.
- J.27. T. Biedl. Polygons needing many flipturns. *Discrete and Computational Geometry*, 35(1):131–141, 2006.
- J.28. T. Biedl, T. Thiele(*), and D. Wood(*). Three-dimensional orthogonal graph drawing with optimal volume. *Algorithmica*, 44(3):233–255, 2006.
- J.29. T. Biedl, A. Lubiw, and J. Sun(*). When can a net fold to a polyhedron? *Computational Geometry: Theory and Applications*, 31(3):207–218, 2005.
- J.30. T. Biedl and T. Chan. A note on 3D orthogonal graph drawing. *Discrete Applied Mathematics*, 148:189–193, 2005.
- J.31. T. Biedl and D. Wilkinson(*). Bounded-degree independent sets in planar graphs. *Theory of Computing Systems*, 38(3):253–278, 2005.
- J.32. T. Biedl, T. Chan, Y. Ganjali(*), Md. Taghi Hajiaghayi(*), and D. Wood. Balanced vertex-orderings of graphs. *Discrete Applied Mathematics*, 148(1):27–48, 2005.
- J.33. T. Biedl, E. Demaine(*), C. Duncan, R. Fleischer, and S. Kobourov. Tight bounds on maximal and maximum matching. *Discrete Mathematics*, 285(1-3):7–15, 2004.
- J.34. T. Biedl, T. Chan, E. Demaine(*), R. Fleischer, M. Golin, J. King, and I. Munro. Fun-sort – or the chaos of unordered binary search. *Discrete Applied Mathematics*, 144(3):231–236, 2004.
- J.35. T. Biedl, B. Brejová(*), E. Demaine, A. Hamel, A. López-Ortiz, and T. Vinař(*). Finding hidden independent sets in interval graphs. *Theoretical Computer Science*, 310(1-3):287–307, 2004.
- J.36. T. Biedl, J. Buss, E. Demaine(*), M. Demaine, P. Nijjar(*), and T. Vinař(*). Palindrome recognition using a multidimensional tape. *Theoretical Computer Science*, 302:475–480, 2003.
- J.37. T. Biedl, T. Chan, and A. López-Ortiz. Drawing $K_{2,n}$: a lower bound. *Information Processing Letters*, 85(6):303–305, 2003.
- J.38. P. Agarwal, T. Biedl(*), S. Lazard(**), S. Robbins(*), S. Suri, and S. Whitesides. Curvature constrained shortest paths inside a convex polygon. *SIAM Journal on Computing*, 13(6):1814–1851, 2002.
- J.39. T. Biedl, E. Čeněk(*), T. Chan, E. Demaine(*), M. Demaine, R. Fleischer, and M. Wang(*). Balanced k -colorings. *Discrete Mathematics*, 254(1-3):19–32, 2002.
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- J.40. T. Biedl, E. Demaine(*), M. Demaine, S. Lazard(*), A. Lubiw, J. O'Rourke, S. Robbins(*), I. Streinu, G. Toussaint, and S. Whitesides. On reconfiguring tree linkages: Trees can lock. *Discrete Applied Mathematics*, 117:293–297, 2002.
- J.41. T. Biedl, E. Demaine(*), M. Demaine, R. Fleischer, L. Jacobsen(**), and I. Munro. The complexity of Clickomania. In R.J. Nowakowski, editor, *More Games of No Chance*, pages 389–404. Cambridge University Press, 2002.
- J.42. T. Biedl(**), E. Demaine(*), M. Demaine, S. Lazard(**), A. Lubiw, J. O'Rourke, M. Overmars, S. Robbins(*), I. Streinu, G. Toussaint, and S. Whitesides. Locked and unlocked polygonal chains in 3D. *Discrete and Computational Geometry*, 26(3):269–281, 2001.
- J.43. T. Biedl(*). The DFS-heuristic for orthogonal graph drawing. *Computational Geometry: Theory and Applications*, 18:167–188, 2001.
- J.44. T. Biedl. 1-bend 3-D orthogonal drawings: two open problems solved. *Journal of Graph Algorithms and Applications*, 5(3):1–15, 2001.
- J.45. T. Biedl(**), P. Bose, E. Demaine(*), and A. Lubiw. Efficient algorithms for Petersen's theorem. *J. Algorithms*, 38(1):110–134, 2001.
- J.46. T. Biedl(*), B. Madden, and I. Tollis. The three-phase method: A unified approach to orthogonal graph drawing. *International Journal of Computational Geometry and Applications*, 10(6):553–580, 2000.
- J.47. T. Biedl(*), T. Shermer, S. Whitesides, and S. Wismath. Bounds for orthogonal 3-D graph drawing. *Journal of Graph Algorithms and Applications*, 3(4):63–79, 1999.
- J.48. T. Biedl(*). New lower bounds for orthogonal graph drawings. *Journal of Graph Algorithms and Applications*, 2(7):1–31, 1998.
- J.49. T. Biedl(*). Relating bends and size in orthogonal graph drawings. *Information Processing Letters*, 65(2):111–115, 1998.
- J.50. T. Biedl(*) and G. Kant. A better heuristic for orthogonal graph drawings. *Computational Geometry: Theory and Applications*, 9:159–180, 1998.
- J.51. T. Biedl(*), G. Kant, and M. Kaufmann. On triangulating planar graphs under the four-connectivity constraint. *Algorithmica*, 19(4):427–446, 1997.

2.2.3 Articles in refereed conference proceedings

- C.1. T. Biedl and C. Pennarun. Non-aligned drawings of planar graphs. In *Graph Drawing and Network Visualization (GD'16)*, 2016. To appear. Also appeared as ArXiv abs/1604.07100 with 17 pages.
- C.2. T. Biedl, S. Mehrabi(**), A. Lubiw, and S. Veronschot(*). Rectangle-of-influence triangulations. In *Canadian Conference on Computational Geometry (CCCG'16)*, pages 237–243, 2016.
- C.3. T. Biedl, C. Grimm(*), L. Palios, J. Shewchuck, and S. Veronschot(*). Realizing farthest-neighbor diagrams. In *Canadian Conference on Computational Geometry (CCCG'16)*, pages 48–56, 2016.
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- C.4. T. Biedl, S. Mehrabi(**), and Z. Yu(*). Sliding k -transmitters: Hardness and approximations. In *Canadian Conference on Computational Geometry (CCCG'16)*, pages 63–68, 2016.
- C.5. T. Biedl and S. Mehrabi(**). On r -guarding thin orthogonal polygons. In *International Symposium on Algorithms and Complexity (ISAAC'16)*, 2016. To appear. Also appeared as ArXiv 1604.07100.
- C.6. T. Biedl, F. Montecchiani(**), and G. Liotta. On visibility representations of non-planar graphs. In *Symposium on Computational Geometry (SoCG 2016)*, volume 51 of *LIPICs*, pages 19:1–19:16. Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik, 2016.
- C.7. T. Biedl. Triangulating planar graphs while keeping the pathwidth small. In *Workshop on Graph-Theoretic Algorithms (WG'15)*, volume 9224 of *Lecture Notes in Computer Science*, pages 425–439. Springer, 2016.
- C.8. O. Aichholzer, T. Biedl, T. Hackl, M. Held, S. Huber(**), P. Palfrader(*), and B. Vogtenhuber. Representing directed trees as straight skeletons. In *Graph Drawing and Network Visualization (GD'15)*, volume 9411 of *Lecture Notes in Computer Science*, pages 335–347. Springer, 2015. Also appeared as CoRR 1508.01076.
- C.9. T. Biedl and J.M. Schmidt. Small-area orthogonal drawings of 3-connected graphs. In *Graph Drawing and Network Visualization (GD'15)*, volume 9411 of *Lecture Notes in Computer Science*, pages 153–165. Springer, 2015. Also appeared as CoRR 1510.02322.
- C.10. T. Biedl and M. Derka(*). 1-string B_1 -VPG-representations of planar partial 3-trees and some subclasses. In *Canadian Conference on Computational Geometry (CCCG'15)*, pages 37–42, 2015. Also appeared as CoRR 1511.08592.
- C.11. T. Biedl and M. Derka(*). 1-string B_2 -VPG-representations of planar graphs. In *Symposium on Computational Geometry (SoCG'15)*, volume 34 of *LIPICs*, pages 141–155. Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik, 2015. Our paper was invited to a special issue of *Journal of Computational Geometry* devoted to the best papers at SoCG'15.
- C.12. T. Biedl, S. Huber(**), and P. Palfrader(*). Stable roommates for weighted straight skeletons. In *Algorithms and Computation (ISAAC'14)*, volume 8889 of *LNCS*, pages 117–127, 2014. Our paper was invited to a special issue of *Intl. J. Comput. Geometry Appl.* devoted to the best papers at ISAAC'14.
- C.13. T. Biedl. Height-preserving transformations of planar graph drawings. In *Graph Drawing (GD'14)*, *LNCS*, pages 380–391. Springer, 2014.
- C.14. F. Barrera-Cruz(*), T. Biedl, M. Derka(*), S. Kiazzyk(*), A. Lubiw, and H. Vosoughpour(*). Turning orthogonally convex polyhedra into orthoballs. In *Canadian Conference in Computational Geometry (CCCG'14)*, pages 251–257, 2014.
- C.15. T. Biedl. Trees and co-trees with bounded degrees in planar 3-connected graphs. In *Scandinavian Symposium and Workshops (SWAT'14)*, volume 8503 of *LNCS*, pages 62–73. Springer, 2014.
- C.16. T. Biedl. On area-optimal planar grid-drawings. In *International Colloquium on Automata, Languages and Programming (ICALP '14)*, volume 8572 of *LNCS*, pages 198–210. Springer-Verlag, 2014.
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- C.17. T. Biedl, T. Blä(*)sius, B. Niedermann(*), M. Nöllenburg, R. Prutkin(*), and I. Rutter(**). Using ILP/SAT to determine pathwidth, visibility representations, and other grid-based graph drawings. In *Graph Drawing (GD'13)*, volume 8242 of *LNCS*, pages 460–471. Springer-Verlag, 2013.
- C.18. T. Biedl, M. Held, and S. Huber(**). Recognizing Straight Skeletons and Voronoi Diagrams and Reconstructing Their Input. In *10th International Symposium on Voronoi Diagrams in Science and Engineering (ISVD 2013)*, pages 37–46. IEEE, 2013.
- C.19. S. Alamdari(*), T. Biedl, T. Chan, E. Grant(*), K.R. Jampani(*), S. Keshav, A. Lubiw, and V. Pathak(*). Smart-grid electricity allocation via strip packing with slicing. In *Algorithms and Data Structures Symposium (WADS '13)*, volume 8037 of *LNCS*, pages 25–36. Springer-Verlag, 2013.
- C.20. S. Alamdari(*) and T. Biedl. Open rectangle-of-influence drawings of non-triangulated planar graphs. In *Graph Drawing (GD'12)*, volume 7704 of *LNCS*, pages 102–113. Springer-Verlag, 2013.
- C.21. T. Biedl. A 4-approximation algorithm for the height of drawing 2-connected outerplanar graph. In *Workshop on Approximation and Online Algorithms (WAOA'12)*, volume 7846 of *LNCS*, pages 272–285. Springer-Verlag, 2013.
- C.22. T. Biedl, M. Held, S. Huber(**), D. Kaaser(*), and P. Palfrader(*). Weighted straight skeletons in the plane. In *Canadian Conference on Computational Geometry (CCCG'13)*, pages 13–18, 2013.
- C.23. Md. J. Alam(*), T. Biedl, S. Felsner, M. Kaufmann, S. G. Kobourov, and T. Ueckerdt(*). Computing cartograms with optimal complexity. In *ACM Symposium on Computational Geometry*, pages 21–30, 2012.
- C.24. T. Biedl and M. Vatshelle(*). The point-set embeddability problem for plane graphs. In *ACM Symposium on Computational Geometry*, pages 41–50, 2012.
- C.25. T. Anderson(*) and T. Biedl. The Vulcan game of Kal-toh: Finding or making triconnected planar subgraphs. In *Fun with Algorithms (FUN'12)*, volume 7288 of *LNCS*, pages 4–15. Springer-Verlag, 2012.
- C.26. T. Biedl and P. Floderus(*). Drawing planar graphs on points inside a polygon. In *Mathematical Foundations of Computer Science (MFCS'12)*, volume 7464 of *LNCS*, pages 172–183. Springer-Verlag, 2012.
- C.27. S. Alamdari(*) and T. Biedl. Planar open rectangle-of-influence drawings with non-aligned frames. In *Graph Drawing (GD'11)*, volume 7034 of *LNCS*, pages 14–25. Springer-Verlag, 2012.
- C.28. Md. J. Alam(*), T. Biedl, S. Felsner, M. Kaufmann, and S.G. Kobourov. Proportional contact representations of planar graphs. In *Graph Drawing (GD'11)*, volume 7034 of *LNCS*, pages 26–38. Springer-Verlag, 2012.
- C.29. T. Biedl, Md. T. Irfan(*), J. Iwerks(*), J. Kim, and J. S. B. Mitchell. Guarding polyominoes. In *Symposium on Computational Geometry (SoCG'11)*, pages 387–396. ACM, 2011.
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- C.30. Md. J. Alam(*), T. Biedl, S. Felsner, A. Gerasch(*), M. Kaufmann, and S.G. Kobourov. Linear-time algorithms for hole-free rectilinear proportional contact graph representations. In *Algorithms and Computation (ISAAC '11)*, volume 7074 of *LNCS*, pages 281–291. Springer-Verlag, 2011.
- C.31. T. Biedl, S. Durocher(**), C. Engelbeen(*), S. Fiorini, and M. Young(*). Faster optimal algorithms for segment minimization with small maximal value. In *Algorithms and Data Structures Symposium (WADS'11)*, volume 6844 of *LNCS*, pages 86–97. Springer-Verlag, 2011.
- C.32. T. Biedl and L. E. Ruiz Velá(*)zquez. Orthogonal cartograms with few corners per face. In *Algorithms and Data Structures Symposium (WADS'11)*, volume 6844 of *LNCS*, pages 98–109. Springer-Verlag, 2011.
- C.33. T. Biedl. Drawings some planar graphs with integer edge-lengths. In *Canadian Conference on Computational Geometry (CCCG'11)*, pages 291–296, 2011.
- C.34. T. Biedl. Small drawings of series-parallel graph. In *Graph Drawing (GD'09)*, volume 5849 of *LNCS*, pages 280–291. Springer-Verlag, 2010.
- C.35. T. Biedl and L.E. Ruiz Velá(*)zquez. Drawing planar 3-trees with fixed areas. In *Graph Drawing (GD'09)*, volume 5849 of *LNCS*, pages 316–322. Springer-Verlag, 2010.
- C.36. T. Biedl, S. Durocher(**), and J. Snoeyink. Reconstructing polygons from scanner data. In *International Symposium on Algorithms and Computation (ISAAC'09)*, volume 5878 of *LNCS*, pages 862–871. Springer-Verlag, 2009.
- C.37. T. Biedl and B. Genc(*). Cauchy's theorem for orthogonal polyhedra of genus 0. In *European Symposium on Algorithms (ESA '09)*, volume 5757 of *LNCS*, pages 71–82. Springer-Verlag, 2009.
- C.38. T. Biedl and M. Stern. Edge-intersection graphs of k -bend paths in grids. In *Computing and Combinatorics (COCOON '09)*, volume 5609 of *LNCS*, pages 86–95. Springer-Verlag, 2009.
- C.39. T. Biedl, M. Hasan(*), and A. López-Ortiz. Reconstructing convex polygons and polyhedra from edge and face counts in orthogonal projections. In *Foundations of Software Technology and Theoretical Computer Science (FSTTCS 07)*, volume 4855 of *LNCS*, pages 400–411. Springer-Verlag, 2007.
- C.40. T. Biedl, A. Lubiw, and M. Spriggs(*). Cauchy's theorem and edge lengths of convex polyhedra. In *Workshop on Algorithms and Data Structures (WADS'07)*, volume 4619 of *LNCS*, pages 398–409. Springer-Verlag, 2007.
- C.41. T. Biedl and F. Brandenburg. Partitions of graphs into trees. In *Graph Drawing (GD'06)*, volume 4372 of *LNCS*, pages 430–439. Springer-Verlag, 2007.
- C.42. S. Aziza(*) and T. Biedl. Improved layouts of the multigrid network. In *Canadian Conference on Computational Geometry (CCCG'07)*, pages 221–224, 2007.
- C.43. T. Biedl. Realizations of hexagonal graph representations. In *Canadian Conference on Computational Geometry (CCCG'07)*, pages 89–92, 2007.
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- C.44. T. Biedl, F.J. Brandenburg, and X. Deng. Crossings and permutations. In *Graph Drawing (GD'05)*, volume 3843 of *LNCS*, pages pp. 1–12. Springer-Verlag, 2006.
- C.45. T. Biedl, A. Lubiw, and M. J. Spriggs(*). Morphing planar graphs while preserving edge directions. In *Graph Drawing (GD'05)*, volume 3843 of *LNCS*, pages 13–24. Springer-Verlag, 2005.
- C.46. S. Aziza(*) and T. Biedl. Hexagonal grid drawings. In *Graph Drawing (GD'04)*, volume 3383 of *LNCS*, pages 18–23. Springer-Verlag, 2005.
- C.47. T. Biedl, J. Horton, and A. Lopez-Ortiz. Cross-stitching using little thread. In *Canadian Conference on Computational Geometry (CCCG'05)*, pages 199–202, 2005.
- C.48. T. Biedl, A. Lubiw, and M. Spriggs(*). Morphing polyhedra preserving face normals: A counterexample. In *Canadian Conference on Computational Geometry (CCCG'05)*, pages 109–112, 2005.
- C.49. T. Biedl and B. Genc(*). Complexity of octagonal and rectangular cartograms. In *Canadian Conference on Computational Geometry (CCCG'05)*, pages 117–120, 2005.
- C.50. T. Biedl. The complexity of domino tiling. In *Canadian Conference on Computational Geometry (CCCG'05)*, pages 187–190, 2005.
- C.51. T. Biedl and F. Brandenburg. Drawing planar bipartite graphs with small area. In *Canadian Conference on Computational Geometry (CCCG'05)*, pages 105–108, 2005.
- C.52. T. Biedl, M. Hasan(*), and A. López-Ortiz. Efficient view point selection for silhouettes of polyhedra. In *Mathematical Foundations of Computer Science (MFCS 2004)*, volume 3153 of *LNCS*, pages 735–747. Springer-Verlag, 2004.
- C.53. T. Biedl, A. Lubiw, and M. Spriggs(*). Angles and lengths in reconfigurations of polygons and polyhedra. In *Mathematical Foundations of Computer Science (MFCS 2004)*, volume 3153 of *LNCS*, pages 748–759. Springer-Verlag, 2004.
- C.54. T. Biedl and B. Genc(*). When can a graph form an orthogonal polyhedron? In *Canadian Conference on Computational Geometry (CCCG'04)*, pages 53–56, 2004.
- C.55. T. Biedl, E. Demaine, A. Golynski(*), J. Horton, A. López-Ortiz, G. Poirier(*), and C. Quimper(*). Optimal dynamic video-on-demand using adaptive broadcasting. In *European Symposium on Algorithms (ESA'03)*, volume 2832 of *LNCS*, pages 90–101. Springer-Verlag, 2003.
- C.56. T. Biedl, B. Brejová(*), E. Demaine, A. Hamel, A. López-Ortiz, and T. Vinař(*). Finding hidden independent sets in interval graphs. In *9th International Computing and Combinatorics Conference (COCOON'03)*, volume 2697 of *LNCS*, pages 182–191. Springer-Verlag, 2003.
- C.57. T. Biedl, A. Lubiw, and M. Spriggs(*). Parallel morphing of trees and cycles. In *Canadian Conference on Computational Geometry (CCCG'03)*, pages 29–32, 2003.
- C.58. T. Biedl and D. Wilkinson(*). Bounded-degree independent sets in planar graphs. In *Symposium on Algorithms and Computation (ISAAC '02)*, volume 2518 of *LNCS*, pages 416–427. Springer-Verlag, 2002.
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- C.59. T. Biedl. Drawing outer-planar graphs in $O(n \log n)$ area. In *Graph Drawing (GD'01)*, volume 2528 of *LNCS*, pages 54–65. Springer-Verlag, 2002.
- C.60. T. Biedl, J. Johansen(*), T. Shermer, and D. Wood(*). Orthogonal drawings with few layers. In *Graph Drawing (GD'01)*, volume 2265 of *LNCS*, pages 297–311. Springer-Verlag, 2002.
- C.61. T. Biedl, M. Hasan(*), J. Horton, A. López-Ortiz, and T. Vinař(*). Searching for the center of a circle. In *Canadian Conference on Computational Geometry (CCCG'02)*, pages 137–141, 2002.
- C.62. T. Biedl, T. Chan, E.D. Demaine(*), M.L. Demaine, P. Nijjar(*), R. Uehara, and M. Wang(*). Tight bounds on the genus of nonorthogonal polyhedra built from rectangles. In *Canadian Conference on Computational Geometry (CCCG'02)*, pages 105–108, 2002.
- C.63. T. Biedl, T. Chan, and A. López-Ortiz. Drawing $K_{2,n}$: a lower bound. In *Canadian Conference on Computational Geometry (CCCG'02)*, pages 146–148, 2002.
- C.64. T. Biedl, E. Demaine, C. Duncan, R. Fleischer, and S. Kobourov. Tight bounds on maximal and maximum matching. In *International Symposium on Algorithms and Computation (ISAAC'01)*, volume 2223 of *LNCS*, pages 308–319. Springer-Verlag, 2001.
- C.65. T. Biedl, T. Chan, E. Demaine(*), R. Fleischer, M. Golin, and I. Munro. Fun-sort. In *Fun with Algorithms (FUN'01)*, volume 10 of *Proceedings in Informatics*, pages 15–26. Carleton Scientific Press, 2001.
- C.66. T. Biedl. Linear reductions of maximum matching. In *Symposium on Discrete Algorithms (SODA'01)*, pages 825–826. ACM, 2001.
- C.67. T. Biedl, T. Thiele(*), and D. Wood(*). Three-dimensional orthogonal graph drawing with optimal volume. In *Graph Drawing (GD'00)*, volume 1984 of *LNCS*, pages 284–295. Springer-Verlag, 2001.
- C.68. T. Biedl, B. Brejová(*), and T. Vinař(*). Simplifying flow networks. In *Mathematical Foundations of Computer Science (MFCS 2000)*, volume 1893 of *LNCS*, pages 192–201. Springer-Verlag, 2000.
- C.69. T. Biedl, E. Č(*)enek, T. Chan, E. Demaine(*), M. Demaine, R. Fleischer, and M. Wang(*). Balanced k -colorings. In *Mathematical Foundations of Computer Science (MFCS 2000)*, volume 1893 of *LNCS*, pages 202–211. Springer-Verlag, 2000.
- C.70. T. Biedl. 1-bend 3-D orthogonal drawings: two open problems solved. In *Canadian Conference on Computational Geometry (CCCG'00)*, pages 173–180, 2000.
- C.71. T. Biedl(**), E. Demaine(*), S. Lazard(**), S. Robbins(*), and M. Soss(*). Convexifying monotone polygons. In *International Symposium on Algorithms and Computations (ISAAC'99)*, volume 1741 of *LNCS*, pages 415–424. Springer-Verlag, 1999.
- C.72. T. Biedl(**), A. Bretscher(*), and H. Meijer. Rectangle of influence drawings of graphs without filled 3-cycles. In *Graph Drawing (GD'99)*, volume 1731 of *LNCS*, pages 359–368. Springer-Verlag, 1999.
- C.73. T. Biedl(**), P. Bose, E. Demaine(*), and A. Lubiw. Efficient algorithms for Petersen's matching theorem. In *ACM Symposium on Discrete Algorithms (SODA'99)*, pages 130–139. ACM, 1999.
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- C.74. T. Biedl(**), E. Demaine(*), M. Demaine, S. Lazard(**), A. Lubiw, J. O'Rourke, M. Overmars, S. Robbins(*), I. Streinu, G. Toussaint, and S. Whitesides. Locked and unlocked polygonal chains in 3D. In *ACM Symposium on Discrete Algorithms (SODA'99)*, pages 866–867, New York, 1999. ACM.
- C.75. T. Biedl, A. Lubiw, and J. Sun(*). When can a net fold to a polyhedron? In *Canadian Conference on Computational Geometry (CCCG'99)*, pages 1–5, 1999.
- C.76. T. Biedl(**). Three approaches to 3D-orthogonal box-drawings. In *Graph Drawing (GD'98)*, volume 1547 of *LNCS*, pages 30–43. Springer-Verlag, 1998.
- C.77. T. Biedl(**), J. Marks, K. Ryall, and S. Whitesides. Graph multidrawing: Finding nice drawings without defining nice. In *Graph Drawing (GD'98)*, volume 1547 of *LNCS*, pages 347–355. Springer-Verlag, 1998.
- C.78. T. Biedl(*), M. Kaufmann, and P. Mutzel. Drawing planar partitions II: HH-drawings. In *Workshop on Graph-Theoretic Concepts in Computer Science (WG'98)*, volume 1517 of *LNCS*, pages 124–136. Springer-Verlag, 1998.
- C.79. T. Biedl(*). Drawing planar partitions I: LL-drawings and LH-drawings. In *ACM Symposium on Computational Geometry (SoCG'98)*, pages 287–296. ACM, 1998.
- C.80. P. Agarwal, T. Biedl(*), S. Lazard(*), S. Robbins(*), S. Suri, and S. Whitesides. Curvature constrained shortest paths inside a convex polygon. In *ACM Symposium on Computational Geometry (SoCG'98)*, pages 392–401. ACM, 1998.
- C.81. T. Biedl(*), T. Shermer, S. Whitesides, and S. Wismath. Orthogonal 3-D graph drawing. In *Graph Drawing (GD'97)*, volume 1353 of *LNCS*, pages 76–86. Springer-Verlag, 1998.
- C.82. T. Biedl(*), B. Madden, and I. Tollis. The three-phase method: A unified approach to orthogonal graph drawing. In *Graph Drawing (GD'97)*, volume 1353 of *LNCS*, pages 391–402. Springer-Verlag, 1998.
- C.83. T. Biedl(**), E. Demaine(*), M. Demaine, A. Lubiw, J. O'Rourke, M. Overmars, S. Robbins(*), and S. Whitesides. Unfolding some classes of orthogonal polyhedra. In *Canadian Conference on Computational Geometry (CCCG'98)*, pages 70–71, 1998.
- C.84. T. Biedl(**), E. Demaine(*), M. Demaine, A. Lubiw, and G. Toussaint. Hiding disks in folded polygons. In *Canadian Conference on Computational Geometry (CCCG'98)*, pages 36–37, 1998.
- C.85. T. Biedl(**), E. Demaine(*), M. Demaine, S. Lazard(**), A. Lubiw, J. O'Rourke, S. Robbins(*), I. Streinu, G. Toussaint, and S. Whitesides. On reconfiguring tree linkages: Trees can lock. In *Canadian Conference on Computational Geometry (CCCG'98)*, pages 4–5, 1998.
- C.86. T. Biedl(*) and M. Kaufmann. Area-efficient static and incremental graph drawings. In *European Symposium on Algorithms (ESA'97)*, volume 1284 of *LNCS*, pages 37–52. Springer-Verlag, 1997.
- C.87. T. Biedl(*). Optimal orthogonal drawings of triconnected plane graphs. In *Scandinavian Workshop on Algorithms Theory (SWAT'96)*, volume 1095 of *LNCS*, pages 333–344. Springer-Verlag, 1996.
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- C.88. T. Biedl(*). New lower bounds for orthogonal graph drawings. In *Graph Drawing (GD'95)*, volume 1027 of *LNCS*, pages 28–39. Springer-Verlag, 1996.
- C.89. T. Biedl(*). Improved orthogonal drawings of 3-graphs. In *Canadian Conference on Computational Geometry (CCCG'96)*, volume 5 of *International Informatics Series*, pages 295–299. Carleton University Press, 1996.
- C.90. T. Biedl(*). Optimal orthogonal drawings of connected plane graphs. In *Canadian Conference on Computational Geometry (CCCG'96)*, volume 5 of *International Informatics Series*, pages 306–311. Carleton University Press, 1996.
- C.91. T. Biedl(*) and G. Kant. A better heuristic for orthogonal graph drawings. In *2nd European Symposium on Algorithms*, volume 855 of *LNCS*, pages 124–135. Springer-Verlag, 1994.
- C.92. T. Biedl(*), G. Kant, and M. Kaufmann. On triangulating planar graphs under the four-connectivity constraint. In *Scandinavian Workshop on Algorithms Theory (SWAT'94)*, *LNCS*, pages 83–94. Springer-Verlag, 1994.

2.2.4 Other publications

- O.1. T. Biedl, S. Fischmeister, and N. Kumar(*). Dag-width of control flow graphs with applications to model checking, 2015. CoRR report 1503.00793.
- O.2. T. Biedl, M. Derka(*), S. Kiazzyk(*), A. Lubiw, and H. Vosoughpour(*). Dihedral angles and orthogonal polyhedra. Technical Report abs/1312.6824, CoRR, 2013. 3 pages.
- O.3. T. Biedl and P. Henderson(*). Nested SAT graphs have treewidth three. Technical Report CS-2004-70, University of Waterloo, December 2004.
- O.4. T. Biedl. Editorial for the special issue dedicated to the best papers from CCCG'01. *Computational Geometry: Theory and Applications*, 2003. vol. 26, p. 1.
- O.5. T. Biedl and F. Brandenburg. Graph drawing contest report. *Graph Drawing (GD'01)*, 2002. Lecture Notes in Computer Science, vol. 2265, pp. 513-521, Springer-Verlag.
- O.6. T. Biedl, B. Brejová(*), E. Demaine, A. Hamel, and T. Vinař(*). Hierarchical clustering of gene expression data. Technical Report CS-2001-14, Dept. of Computer Science, University of Waterloo, April 2001.
- O.7. T. Biedl(**), E. Demaine(*), M. Soss(*), and G. Toussaint. Straightening visible chains under constraints. Technical Report CS-99-08, University of Waterloo, Department of Computer Science, May 1999.
- O.8. T. Biedl(*). Drawing planar partitions III: Two constrained embeddings. Technical Report RRR 13-98, RUTCOR, Rutgers University, 1998.
- O.9. P. Dreyer(*) and T. Biedl(*). Rectangle breaking in grids. *Congressus Numerantium*, 1997. vol. 128, pages 19-32.
- O.10. T. Biedl(*). The three-phase method and applications. *7th Fall Workshop on Computational Geometry, Duke University*, 1997. 2 pages.
- O.11. T. Biedl(*). *Orthogonal Graph Visualization: The Three-Phase Method With Applications*. PhD thesis, RUTCOR, Rutgers University, May 1997.
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- O.12. T. Biedl(*). Orthogonal graph drawing: Algorithms and lower bounds. Master's thesis, Technical University Berlin, January 1996.
- O.13. T. Biedl(*). Heuristics for 3D-orthogonal graph drawings. *Twente Workshop on Graphs and Combinatorial Optimization*, 1995.
- O.14. T. Biedl(*). Embedding nonplanar graphs in the rectangular grid. Technical Report RRR 27-93, RUTCOR, Rutgers University, 1993.

3 Teaching activities

3.1 Courses taught in the past five years

Title	Level	Typical class size
Graph-theoretic algorithms (cs762)	graduate course	20
Design and Analysis of Algorithms (cs466/666)	4th year course held with graduate course	40+5
Data Structures and Data Management (cs240)	2nd year course	100
Data Structures and Data Management (cs240e) enriched version	2nd year course for advanced students	40

3.2 Thesis supervision

- **Martin Derka**, Ph.D. student, Fall 2013–current.
Topic: String representations with restrictions.
- **Philippe Demontigny**, Master's student, Fall 2014–Summer 2016,
Topic: Drawing outerplanar graphs with approximately optimal height.
- **Stephanie Lee**, Master's student, Fall 2014–Summer 2016,
co-supervised with Timothy Chan.
Topic: Ideal octagonal drawings of trees.
- **Neeraj Khumar**, Master's student, Spring 2014–Summer 2015,
co-supervised with Sebastian Fischmeister.
Topic: Measuring similarity of control flow graphs.
- **Anton Raichuk**, Ph.D. student: Fall 2011–Spring 2012 (left the program),
co-supervised with Jochen Könnemann.
Topic: Special cases of Set Cover.
Current occupation: Software Engineer at Google.
- **Soroush Alamdari Hosseini**, Master's student: Fall 2010–Winter 2012.
Topic: Open Rectangle-of-Influence Graph Drawings.
Current employment: Ph.D. student at Cornell University.
- **Laura Inozemtseva**, Master's student: Fall 2010–Winter 2011 (switched supervisor.)
Current employment: Ph.D. student at University of Waterloo.

- **Terry Anderson**, Master's student: Winter 2008–Spring 2010.
Topic: The game of Kal-toh.
Terry received the the Award for Exceptional Teaching by a Student.
Current employment: Software Engineer at Google.
- **Elena Lesvia Ruiz-Velázquez**, Master's student: Winter 2008–Spring 2009.
Topic: Graph drawing with prescribed face areas.
Current employment: IT Senior Consultant, Oracle, Mexico.
- **Adam Bains**, Master's student: Fall 2007–Winter 2009.
Topic: Reconstruction of multicoloured hv-convex polyominoes.
Current employment: Software Development Engineer at amazon.
- **Burkay Genç**, Ph.D. student: Fall 2003–Winter 2008.
Topic: Reconstruction of orthogonal polyhedra.
Current employment: Asst. Prof, Izmir University of Economics, Turkey.
- **Michael Spriggs**, Ph.D. student: Spring 2002-Fall 2006,
co-supervised with Anna Lubiw.
Topic: Morphing parallel graph drawings.
Current employment: Unknown.
- **Philip Hendersen**, Master's student: Winter 2004–Spring 2005.
Topic: Planar graphs and partial k-trees.
Current employment: Software engineer at Google.
- **Masud Hasan**, Ph.D. student: Spring 2002-Spring 2005,
co-supervised with Alex López-Ortiz.
Topic: Reconstruction of polyhedra from silhouette information.
Current employment: Professor, Taibah University, Saudi Arabia.
- **Shabnam Aziza**, Master's student: Fall 2002–Spring 2004.
Topic: Hexagonal grid drawings.
Current employment: Unknown.
- **Dana Wilkinson**, Master's student: Fall 2000–Spring 2002.
Topic: Bounded-degree independent sets in planar graphs.
Current employment: Software engineer at Google.

3.3 Other student supervision

- **Veronika Irvine**, Postdoctoral fellow, Fall 2016-current, co-supervised with Craig Kaplan.
 - **Debajyoti Mondal**, Postdoctoral fellow, Fall 2016-current, co-supervised with Anna Lubiw.
Topic: Graph drawing with high resolution.
 - **Saeed Mehrabi**, Postdoctoral fellow, Fall 2015-current.
Topic: Geometric covering problems.
 - **Billy Jin**, Undergraduate research assistant, Fall 2016, co-supervised with Saeed Mehrabi.
Topic: Geometric covering problems.
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- **Gia Wu**, Undergraduate research assistant, Fall 2016, co-supervised with Martin Derka.
Topic: Online List-coloring.
- **Milap Sheth**, Undergraduate research assistant, Fall 2016.
Topic: Drawing Halin-graphs.
- **Ziting Yu**, Undergraduate research assistant, Winter 2016, co-supervised with Saeed Mehrabi.
Topic: Sliding k -transmitters (resulting in a conference paper).
- **Johannes Batzill**, visiting Bachelor's student, Summer 2015.
Topic: Ordered drawings of trees (resulting in his Bachelor's thesis).
Current employment: Microsoft, Vancouver, Canada.
- **Martin Vatselle**, visiting Ph.D. student, Fall 2011, co-supervised with Naomi Nishimura.
Topic: Graph Drawing on a fixed set of points.
Current employment: Researcher and IT consultant, Octio AS, Norway.
- **Peter Floderus**, visiting Ph.D. student, Fall 2011.
Topic: Cartograms with prescribed boundaries.
Current employment: Ph.D. student at Lund University, Sweden.
- **Elad Cohen**, visiting Ph.D. student, Spring 2009-Spring 2010.
Topic: EPG-graphs on few rows.
Current employment: Postdoctoral fellow at University of Haifa and Technion, Israel.
- **Stephane Durocher**, Postdoctoral fellow, Fall 2007–Spring 2008,
co-supervised with Alex López-Ortiz and Timothy Chan.
Topic: Reconstruction problems in computational geometry.
Current employment: Associate professor at University of Manitoba.
- **Adnan Khalid**, Undergraduate student, Fall 1998.
Topic: ICheckers: An Intelligent Checkers Program.
Current employment: unknown.

3.4 Thesis examinations

- External examiner for a Ph.D. thesis at a university in India. Spring 2014.
At this institution, it is the custom that the identity of the external examiner is not being revealed to the student, not even post-defense. For this reason, I intentionally did not name the candidate and university.
 - External examiner reviewer for a Ph.D. thesis at a university in Central Europe. Fall 2012.
At this institution, it is the custom that the identity of the external examiner is not being revealed to the student, not even post-defense. For this reason, I intentionally did not name the candidate and university.
 - PhD committee member for students not supervised by me: Gelin Zhou (ongoing), Hamideh Vosoughpour (ongoing), Jazmin Romero (Fall 2015), Amer Mouawad (Winter 2015), Krishnam Raju Jampani (Winter 2011), David Pritchard (Fall 2009), Jessica MacDonald (Spring 2009), Hamid Zarrabi-Zadeh (Fall 2008), Ehsan Chiniforooshan (Spring 2007), Tomáš Vinař
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(Fall 2005), Kerri Webb (Fall 2004), Alastair Farrugia (Winter 2003), Erik Demaine (Spring 2001), Eowyn Čenek (Spring 2001).

- Reader of Master's thesis for students not supervised by me: Vijay Subramanya (Fall 2016), Simon Pratt (Spring 2016), Alexandre Daigle (Winter 2016), Youcef Tebbal (Spring 2015), Patrick Lee (Spring 2014), Elyot Grant (Spring 2011), Vinayak Pathak (Spring 2011), Gordon Taylor (Spring 2010), Daniil Golod (Spring 2009), Mina Razaghpour (Fall 2008), Sri-ram Dharba (Winter 2005), Ian Harrower (Winter 2005), Mustaq Ahmad (Fall 2004), Bashir Sayyed Sadjad (Fall 2004), Derek Phillips (Winter 2002), Mike Hu (Winter 2001), Yashar Ganjali (Winter 2001), Deep Jaitly (Winter 2000), Julie Sun (Spring 1999)

4 Professional activities

4.1 Editorial positions

- Graph Drawing and Network Visualization (GD'18). Program co-chair and proceedings co-editor.
- Computational Geometry Young Researcher Forum (YRF'17). Program Chair.
- Discrete Mathematics and Computer Science, Field Editor. 2003–2013. 25 papers handled.
- Canadian Conference on Computational Geometry (CCCG'13). Proceedings Editor. 2013.
- Computational Geometry: Theory and Applications. Guest Editor for a special issue devoted to papers at CCCG'01. 2002. 7 papers handled.
- Canadian Conference on Computational Geometry (CCCG'01). Program Chair and Proceedings Editor. 2001.

4.2 Conference organization

- Member, organizing committee, Canadian Conference on Computational Geometry (CCCG'13).
- Chair, organizing committee, Canadian Conference on Computational Geometry (CCCG'01).
- Member, organizing committee, Canadian Conference on Computational Geometry (CCCG'98).
- Member, organizing committee, Graph Drawing (GD'98).

4.3 Refereeing and reviewing for journals

- ACM Transactions on Algorithms (1 paper)
 - Algorithmica (10 papers)
 - American Mathematical Society: Special Anniversary edition (1 paper)
 - Computational Geometry: Theory and Applications (9 papers)
 - Discrete Applied Mathematics (11 papers)
 - Discrete & Computational Geometry (2 papers)
 - Discrete Mathematics and Computer Science (7 papers)
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- Information Processing Letters (5 papers)
- International Journal Computers & Mathematics (2 papers)
- International Journal on Computational Geometry and Applications (2 papers)
- Journal of Algorithms (1 paper)
- Journal of Combinatorial Optimization (1 paper)
- Journal of Computational Geometry (1 paper)
- Journal of Discrete Algorithms (1 paper)
- Journal of Graph Algorithms and Applications (13 papers)
- SIAM Journal on Discrete Mathematics (3 papers)
- The Computer Journal (1 paper)

4.4 Consulting and technology transfer

- Consulting with Tom Sawyer Software, Oakland, California, November 2001-March 2003.
- Consulting with AT&T Florsheim Park, New Jersey, Fall 2000.

4.5 Other professional activities

4.5.1 Tenure case and Grant reviews

For the following items, the name of the candidate and institution has been withheld intentionally to protect anonymity.

- Reviewer of two NSERC discovery grant proposals, 2015.
- Evaluation of tenure-case at a university in central USA, 2014.
- Reviewer of an NSERC discovery grant proposal from Ontario, 2012.
- Reviewer of an NSERC discovery grant proposal from Western Canada, 2011.
- Reviewer of a grant application from Africa, 2002.

4.5.2 Conference program committees

- Symposium on Algorithms Theory (WADS), 2017.
 - Scandinavian Workshop on Algorithms Theory (SWAT), 2016.
 - Young Researcher Forum in Computational Geometry (YRF), 2016
 - Graph Drawing and Network Visualization (GD), 2016
 - Canadian Conference on Computational Geometry (CCCG), 2015.
 - Canadian Conference on Computational Geometry (CCCG), 2014.
 - Mathematical Foundations of Computer Science (MFCS), 2014.
 - Graph Drawing (GD), 2013.
 - Canadian Conference on Computational Geometry (CCCG), 2013.
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- International Symposium on Algorithms And Computation (ISAAC), 2013.
- International Symposium on Fundamentals of Computation Theory (FCT), 2013.
- Canadian Conference on Computational Geometry (CCCG), 2012.
- Workshop on Graph-Theoretic Concepts in Computer Science (WG), 2012.
- European Symposium on Algorithms (ESA), 2011.
- Canadian Conference on Computational Geometry (CCCG), 2011.
- ACM Symposium on Computational Geometry (SoCG), 2010.
- Workshop on Algorithms and Complexity (WALCOM), 2010.
- Computing and Combinatorics (COCOON), 2010.
- Graph Drawing (GD), 2009.
- Canadian Conference on Computational Geometry (CCCG), 2008.
- Computing and Combinatorics (COCOON), 2007.
- Graph Drawing (GD), 2007.
- ACM Symposium on Computational Geometry (SoCG), 2005.
- Scandinavian Workshop on Algorithms Theory (SWAT), 2004.
- International Symposium on Algorithms And Computation (ISAAC), 2004.
- Canadian Conference on Computational Geometry (CCCG), 2002.
- Graph Drawing (GD), 2001.
- Graph Drawing (GD), 2000.
- Video submissions at ACM Symposium on Computational Geometry (SoCG), 2000.

4.5.3 Conferences external reviewer

- ACM-SIAM Conference on Discrete Mathematics (SODA): 4 papers
 - ACM Symposium on Computational Geometry (SoCG): 6 papers
 - ACM Symposium on Theory of Computing (STOC): 1 paper
 - Algorithms and Data Structures Symposium (WADS): 1 paper
 - Approximation Algorithms for Combinatorial Optimization Problems (APPROX): 1 paper
 - Conference on Integer Programming and Combinatorial Optimization (IPCO): 1 paper
 - European Symposium on Algorithms (ESA): 9 papers
 - Foundations of Software Technology and Theoretical Computer Science (FSTTCS): 1 paper
 - Graph drawing (GD): 5 papers
 - IEEE Pacific Visualization Symposium (PacificViz): 1 paper
 - International Colloquium on Algorithms, Programming and Languages (ICALP): 1 paper
 - International Computer Science Symposium Russia: 1 paper
 - International Symposium on Algorithms And Complexity (ISAAC): 2 papers
 - International Workshop on Combinatorial Algorithms (IWOCA): 1 paper
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- Italian Conference on Algorithms and Complexity (CIAC): 1 paper
 - Scandinavian Workshop on Algorithms Theory (SWAT): 3 papers
 - Symposium on Experimental Algorithms (SEA): 1 paper
 - Theory and Practice of Computer Science (SOFSEM): 1 paper
 - Workshop on Graph-Theoretic Concepts in Computer Science (WG): 1 paper
 - Workshop on Algorithms and Experiments (ALENEX): 1 paper
 - Young Researcher Forum in Computational Geometry (YRF): 1 paper
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