

# Chaplick, Steven

September 2017

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Citizenship: Canadian (married to an EU citizen)

## Research Interests:

My research focuses on intersection/geometric representations of graphs (and their corresponding graph classes). In this context, I study: how to model problems with intersection/geometric representations, efficient methods for graph class recognition, concise canonical representations of graphs, and algorithms for optimization problems in restricted graph classes. More broadly, I am interested in graph visualization, computational geometry, and computational complexity theory.

## Post-Ph.D. Employment (2012–present):

**Postdoctoral Lecturer/Researcher: Universität Würzburg (current):**

Sept.2015 – present Computer Science Chair I: Algorithms, Complexity and Knowledge-Based Systems

**Postdoctoral Researcher: EuroGIGA Collaborative Research Project<sup>1</sup> (2013 – 2015):**

Jan.2014 – Jun.2015 TU Berlin: Discrete and Algorithmic Mathematics Group (PI: Stefan Felsner)

Feb.2013 – Dec.2013 Univerzita Karlova: Department of Applied Mathematics (PI: Jan Kratochvíl)

**Visiting Researcher (2012–2013):**

Oct.2012 – Jan.2013 Wilfrid Laurier University: Department of Physics and Computer Science  
(Advisors: Kathie Cameron & Chinh Hoàng)

Aug.2012 – Oct.2012 University of Toronto: Department of Computer Science (Advisor: Derek Corneil)

Jul.2012 University of Haifa: Caesarea Rothschild Institute (Advisor: Martin Golumbic)

May 2012 – Jun.2012 Simon Fraser University: School of Computing Science (Advisor: Pavol Hell)

Jan.2012 – Apr.2012 Wilfrid Laurier University: Department of Physics and Computer Science  
(Advisors: Kathie Cameron & Chinh Hoàng)

## Education (2001 – 2012):

Feb.2008 – Jan.2012 University of Toronto: Ph.D. in Computer Science (Advisor: Derek Corneil)

Sept.2006 – Jan.2008 University of Toronto: M.Sc. in Computer Science (Advisor: Derek Corneil)

Sept.2001 – Apr.2006 University of Waterloo: Honours B. Math, Double Degree in Combinatorics & Optimization and Computer Science Co-op

## Honours and Awards:

- Alfred B. Lehman Graduate Scholarship in Computer Science: \$5,000 (Awarded: Nov 2010).
- Ontario Graduate Scholarship in Science and Technology: \$15,000 (Awarded: Sept 2008).

## Theses:

- **Path Graphs and PR-trees.** Ph.D. thesis. University of Toronto (2012). [⟨link to the pdf⟩](#).
- **PQR-trees and Undirected Path Graphs.** M.Sc. thesis. University of Toronto (2008). [⟨link to the pdf⟩](#).

## Refereed Publications:

### 1. Placing your Coins on a Shelf.

*Authors:* H. Alt, K. Buchin, S.C., O. Cheong, P. Kindermann, C. Knauer, F. Stehn.

*Conference:* (accepted) 28th Int. Symp. on Algorithms and Computation (ISAAC), 2017.  
(full version: [ArXiv:1707.01239](https://arxiv.org/abs/1707.01239)).

### 2. Beyond Outerplanarity.

*Authors:* S.C., M. Kryven, G. Liotta, A. Löffler, and A. Wolff.

*Conference:* (accepted) Graph Drawing & Network Visualization: 25th Int. Symp. (GD), 2017.  
(full version: [ArXiv:1708.08723](https://arxiv.org/abs/1708.08723))

<sup>1</sup>For 2013–2014, I was supported under the GraDr project and in 2015, I was supported by the ComPoSe project.

**3. Planar L-Drawings of Directed Graphs.**

*Authors:* S.C., M. Chimani, S. Cornelsen, G. Da Lozzo, M. Nöllenburg, M. Patrignani, I. Tollis, and A. Wolff.

*Conference:* (accepted) Graph Drawing & Network Visualization: 25th Int. Symp. (GD), 2017.  
(full version: ArXiv:1708.09107).

**4. On Vertex- and Empty-Ply Proximity Drawings.**

*Authors:* P. Angelini, S.C., F. De Luca, J. Fiala, J. Hancl, N. Heinsohn, M. Kaufmann, S. Kobourov, J. Kratochvíl and P. Valtr.

*Conference:* (accepted) Graph Drawing & Network Visualization: 25th Int. Symp. (GD), 2017.  
(full version: ArXiv:1708.09233).

**5. On H-Topological Intersection Graphs.**

*Authors:* S.C., M. Töpfer, J. Voborník, and P. Zeman.

*Conference:* (accepted) Graph-Theoretic Concepts in Computer Science: 43rd Int. Workshop (WG), 2017.  
(full version: ArXiv:1608.02389). Speaker: P. Zeman.

**6. Grid Intersection Graphs and Order Dimension.**

*Authors:* S.C., S. Felsner, U. Hoffman, and V. Wiechert.

*Journal:* (accepted) Order, 2017+. ArXiv:1512.02482.

**7. On the structure of (pan, even hole)-free graphs.**

*Authors:* K. Cameron, S.C., and C. Hoàng.

*Journal:* Journal of Graph Theory, 2017+. DOI:10.1002/jgt.22146 ArXiv:1508.03062.

*Talks:* Preliminary results presented at conferences. See: 40.

**8. Combinatorial Problems on H-Graphs.**

*Authors:* S.C., and P. Zeman.

*Conference:* Eur. Conf. on Combinatorics, Graph Theory and Applications (EUROCOMB'17).  
ENDM 61: 223–229, 2017. (full version: ArXiv:1706.00575). Speaker: P. Zeman.

**9. The Complexity of Drawing Graphs on Few Lines and Few Planes.**

*Authors:* S.C., K. Fleszar, F. Lipp, A. Ravsky, O. Verbitsky, and A. Wolff.

*Conference:* Algorithms and Data Structures Symp. (WADS), 2017. LNCS 10389: 265–276.  
(full version: ArXiv:1607.06444). Speaker: F. Lipp.

**10. The Partial Visibility Representation Extension Problem.**

*Authors:* S.C., G. Guśpiel, G. Gutowski, T. Krawczyk, and G. Liotta.

*Journal:* Algorithmica, 2017+. DOI:10.1007/s00453-017-0322-4. ArXiv:1512.00174.

*Conference:* Graph Drawing & Network Visualization: 24th Int. Symp. (GD), 2016. LNCS 9801: 266-279.  
Speaker: S.C.

**11. Threshold-Coloring and Unit-Cube Contact Representation of Planar Graphs.**

*Authors:* M.J. Alam, S.C., G. Fijavžd, M. Kaufmann, S. Kobourov, S. Pupyrev, J. Toeniskoetter.

*Journal:* Discrete Applied Mathematics: Special Graph Classes and Algorithms – in Honor of Professor Andreas Brandstädt on the Occasion of His 65th Birthday. 216 (part 1): 2-14 (2017).  
DOI:10.1016/j.dam.2015.09.003 ArXiv:1302.6183

*Conference:* (alt-title: *Threshold-Coloring and Unit-Cube Contact Representations of Graphs.*)  
Graph-Theoretic Concepts in Computer Science: 39th Int. Workshop (WG), 2013. LNCS 8165:  
26-37. Speaker: M.J. Alam.

**12. Max Point-Tolerance Graphs.**

*Authors:* D. Catanzaro, S.C., S. Felsner, B.V. Halldórsson, M.M. Halldórsson, T. Hixon, and J. Stacho.

*Journal:* Discrete Applied Mathematics: Special Graph Classes and Algorithms – in Honor of Professor Andreas Brandstädt on the Occasion of His 65th Birthday. 216 (part 1): 84-97 (2017).  
DOI:10.1016/j.dam.2015.08.019 ArXiv:1508.03810.

**13. Ferrers Dimension of Grid Intersection Graphs.**

*Authors:* S.C., P. Hell, Y. Otachi, T. Saitoh, and R. Uehara.

*Journal:* Discrete Applied Mathematics: Special Graph Classes and Algorithms – in Honor of Professor Andreas Brandstädt on the Occasion of His 65th Birthday. 216 (part 1): 130-135 (2017).  
DOI:10.1016/j.dam.2015.05.035.

*Conference:* (alt-title: *Intersection Dimension of Bipartite Graphs.*) 11th Conf. on Theory and Applications of Models of Computation (TAMC), 2014. LNCS 8402: 323-340. Speaker: R. Uehara.

**14. Drawing Graphs on Few Lines and Few Planes.**

*Authors:* S.C., K. Fleszar, F. Lipp, A. Ravsky, O. Verbitsky, and A. Wolff.

*Conference:* Graph Drawing & Network Visualization: 24th Int. Symp. (GD), 2016. LNCS 9801: 166-180.

*Speaker:* F. Lipp. (full version: ArXiv:1607.01196)

**15. Obstructing Visibilities with One Obstacle.**

*Authors:* S.C., F. Lipp, J. Park, A. Wolff.

*Conference:* Graph Drawing & Network Visualization: 24th Int. Symp. (GD), 2016. LNCS 9801: 295-308.

*Speaker:* J. Park. (full version: ArXiv:1607.00278)

**16. Simultaneous Orthogonal Planarity.**

*Authors:* P. Angelini, S.C., S. Cornelsen, G. Da Lozzo, G. Di Battista, P. Eades, P. Kindermann, J. Kratochvíl, F. Lipp, and I. Rutter.

*Conference:* Graph Drawing & Network Visualization: 24th Int. Symp. (GD), 2016. LNCS 9801: 532-545.

*Speaker:* P. Kindermann. (full version: ArXiv:1608.08427)

**17. Edge Intersection Graphs of L-Shaped Grid Paths.**

*Authors:* K. Cameron, S.C., and C. Hoàng.

*Journal:* Discrete Applied Mathematics (LAGOS 2013 special issue). 210: 184-194 (2016).

DOI:10.1016/j.dam.2015.01.039 ArXiv:1204.5702.

*Conference:* VII Latin-American Algorithms, Graphs, and Optimization Symp. (LAGOS), 2013. ENDM 44: 363-369. *Speaker:* K. Cameron.

**18. A note on concurrent graph sharing games.**

*Authors:* S.C., P. Micek, T. Ueckerdt, and V. Weichert.

*Journal:* Integers: Electronic Journal of Combinatorial Number Theory 16:G1 (2016).

www.integers-ejcnt.org/vol16.html ArXiv:1411.1021.

**19. Locally Constrained Homomorphisms on Graphs of Bounded Treewidth and Bounded Degree.**

*Authors:* S.C., J. Fiala, P. van 't Hof, D. Paulusma, and M. Tesar.

*Journal:* Theoretical Computer Science (FCT 2013 special issue). 590: 86-95 (2015).

DOI:10.1016/j.tcs.2015.01.028 ArXiv:1408.6676.

*Conference:* Fundamentals of Computation Theory: 19th Int. Symp. (FCT), 2013. LNCS 8070: 121-132.

*Speaker:* D. Paulusma.

*Talks:* Preliminary results also presented at ATCAGC 2012. See: 45

**20. Contact Representations of Planar Graphs: Extending a Partial Representation is Hard.**

*Authors:* S.C., P. Dorbec, J. Kratochvíl, M. Montassier, and J. Stacho.

*Conference:* Graph-Theoretic Concepts in Computer Science: 40th Int. Workshop (WG), 2014. LNCS 8747: 139-151. *Speaker:* J. Kratochvíl.

**21. The vertex leafage of chordal graphs.**

*Authors:* S.C., and J. Stacho.

*Journal:* Discrete Applied Mathematics: 5th Workshop on Graph Classes, Optimization, and Width Parameters (GROW 2011). 168: 14-25(2014). DOI:10.1016/j.dam.2012.12.006 ArXiv:1104.2524.

*Talks:* Results presented at CanaDAM 2011, see 46.

**22. Extending Partial Representations of Circle Graphs.**

*Authors:* S.C., R. Fulek, and P. Klavík.

*Journal:* Submitted. ArXiv:1309.2399.

*Conference:* Graph Drawing: 21st Int. Symp. (GD), 2013. LNCS 8242: 131-142. *Speaker:* S.C.

**23. Stabbing Polygonal Chains with Rays is Hard to Approximate.**

*Authors:* S.C., E. Cohen, E., and G. Morgenstern.

*Conference:* Proceedings of the 25th Canadian Conf. On Computational Geometry (CCCG), 2013. pp.141-144. *Speaker:* S.C.

**24. Equilateral L-Contact Graphs.**

*Authors:* S.C., S. Kobourov, and T. Ueckerdt.

*Conference:* Graph-Theoretic Concepts in Computer Science: 39th Int. Workshop (WG), 2013. LNCS 8165: 139-151. *Speaker:* S.C. (full version: ArXiv:1303.1279)

**25. Planar Graphs as VPG-Graphs.**

*Authors:* S.C., and T. Ueckerdt.

*Journal:* Journal of Graph Algorithms and Applications (GD 2012 special issue). 17(4): 475-494. 2013.  
DOI:10.7155/jgaa.00300.

*Conference:* Graph Drawing: 20th Int. Symp. (GD), 2012. LNCS 7704: 174-186. Speaker: S.C.

**26. Bend-Bounded Path Intersection Graphs: Sausages, Noodles, and Waffles on a Grill.**

*Authors:* S.C., V. Jelínek, J. Kratochvíl, and T. Vyskočil

*Conference:* Graph-Theoretic Concepts in Computer Science: 38th Int. Workshop (WG), 2012. LNCS 7551:  
274-285. Speaker: S.C. (full version: ArXiv:1206.5159)

**27. Recognizing Some Subclasses of Vertex Intersection Graphs of 0-Bend Paths in a Grid.**

*Authors:* S.C., E. Cohen, and J. Stacho.

*Conference:* Graph-Theoretic Concepts in Computer Science: 37th Int. Workshop (WG), 2011. LNCS 6986:  
319-330. Speaker: J. Stacho

**28. From path graphs to directed path graphs.**

*Authors:* S.C., M. Gutierrez, B. Lèvéque, and S. Tondato.

*Conference:* Graph-Theoretic Concepts in Computer Science: 36th Int. Workshop (WG), 2010. LNCS 6410:  
256-265. Speaker: S.C.

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**Submitted Articles****29. Approximation Schemes for Geometric Coverage Problems.**

*Authors:* S.C., M. De, A. Ravsky, and J. Spoerhase.

*Draft:* ArXiv:1607.06665

**30. Representing Planar Graphs by Convex Sets.**

*Authors:* S.C., and T. Ueckerdt.

*Notes:* Preliminary results presented at CanaDAM 2015. See: 39.

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**Some Work In Progress****31. Remarks on Graphs with a Unique Perfect Matching.**

*Authors:* S.C., M. Fürst, F. Maffray, D. Rautenbach.

**32. Intersection Graphs of Non-crossing Paths and Trees.**

*Authors:* S.C.

*Notes:* Preliminary results presented at GROW 2015 and a research seminar (Apr. 2016). See: 37, 47

**33. Solving Optimization Problems on Orthogonal Ray Graphs.**

*Authors:* S.C., P. Kindermann, F. Lipp, and A. Wolff.

*Notes:* Preliminary results presented at JCDCG<sup>2</sup> 2015. See: 38.

**34. Characterizing and Recognizing Path Graphs and Directed Path Graphs using PR-trees.**

*Authors:* S.C.

*Draft:* <link to the pdf>.

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**Invited Conference/Workshop Talks****35. Constrained Recognition Problems on Geometric Graph Classes.**

- 17th Haifa Workshop on Interdisciplinary Applications of Graph Theory, Combinatorics, and Algorithms, June 2017. <workshop homepage>

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**Invited Colloquia****36. Canonical Orders of Planar Graphs and Their Applications.**

- Informatik-Kolloquium, Institut für Informatik, Universität Würzburg. Apr. 2015.

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**Other Conference Presentations****37. Intersection graphs of Non-Crossing Paths.** Based on: 32

- The 7th workshop on Graph Classes, Optimization, and Width Parameters (GROW), 2015.

**38. Solving Optimization Problems on Orthogonal Ray Graphs.** Based on: 33

- The 18th Japan Conf. on Discrete and Computational Geometry and Graphs (JCDCG<sup>2</sup>), 2015.

**39. Representing Planar Graphs By Homothets of Convex Sets.** Based on: 30

- Geometric Representations of Graphs Mini-symposium. 5th CanaDAM, 2015.
- 40. **On (odd-apple,even-hole)-free graphs.** Based on: 7
  - Kolloquium über Kombinatorik, 2014.
  - Midsummer Combinatorial Workshop XX, 2014. (alt-title: *On (claw,even-hole)-free graphs.*)
  - Graph Structure and Algorithms Mini-symposium. SIAM DM, 2014. (alt-title: *Recognizing and Colouring Claw-Free Graphs Without Even Holes.*)
- 41. **Extending Partial Representations of Circle Graphs.** Based on: 22
  - Geometric Representations of Graphs Mini-symposium. SIAM DM, 2014.
  - Leoben-Ljubljana Graph Theory seminar, 2013.
- 42. **Max Point-Tolerance Graphs.** Based on: 12
  - Geometric Representations of Graphs Mini-symposium. 4th CanaDAM, 2013.
- 43. **Edge Intersection Graphs of L-Shaped Grid Paths.** Based on: 17
  - The 12th Haifa Workshop on Interdisciplinary Applications of Graph Theory, Combinatorics and Algorithms, 2012.
  - Prairie Discrete Math Workshop (PDMW) 2012, 2012.
- 44. **Path Graphs and PR-trees.** Based on: my Ph.D. thesis and 34
  - Graph Algorithms Mini-Symposium. SIAM DM, 2012.
  - 2nd Workshop on Graph Decompositions: Theoretical, Algorithmic and Logical Aspects, 2010. (alt-title: *Characterizing Path Graphs and Directed Path Graphs using PR-trees.*)
  - 23rd Midwest Conf. on Combinatorics and Combinatorial Computing, 2009. (alt-title: *Characterizing the intersection graphs of paths in trees using PR-trees*)
- 45. **Locally Constrained Homomorphism with Bounded Parameters.** Based on: 19
  - 4th Workshop on Algebraic, Topological and Complexity Aspects of Graph Covers, 2012.
- 46. **The Vertex Leafage of Chordal Graphs.** Based on: 21
  - Graph Algorithms and Complexity Contributed Talks. 3rd CanaDAM, 2011.

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## Seminars

- 47. **Intersection graphs of Non-Crossing Paths.** Based on: 32
  - Algorithmic aspects of combinatorics Seminar – Department of Theoretical Computer Science, Jagiellonian University (Krakow, Poland). Apr. 2016.
- 48. **Overlap and Intersection Representations of Planar Graphs by Squares.** Based on: 30
  - Noon Lectures – Department of Applied Mathematics, Charles University (Prague, Czech Republic). Oct. 2014.
- 49. **Max Point-Tolerance Graphs.** Based on: 12
  - Algorithms and Complexity in Durham Seminar Series – School of Engineering and Computer Science, Durham University (Durham, United Kingdom). Oct. 2013.
  - Graphs@Ryerson Seminar Series – Mathematics Department, Ryerson University (Toronto, ON, Canada). June 2013.
  - Computer Science Colloquium – University of Arizona (Tucson, AZ, USA). Jan. 2013.
- 50. **Extending Partial Representations of Circle Graphs.** Based on: 22
  - Algorithmique et combinatoire seminar series – Laboratoire d’Informatique Algorithmique: Fondements et Applications (LIAFA), Universit e Paris Diderot (Paris 7, France). Sept. 2013.
- 51. **Bend-Bounded Path Intersection Graphs: Sausages, Noodles, and Waffles on a Grill.** Based on: 26
  - A&C Seminar Series – Department of Computer Science, University of Waterloo (Waterloo, ON, Canada). Nov. 2012.
  - Discrete Math Seminars at Simon Fraser University (Burnaby, BC, Canada). May 2012.
- 52. **Planar Graphs as Contact and Intersection Graphs of Grid Paths.** Based on: 25
  - Special Graph Theory Lecture – Caesarea Rothschild Institute, University of Haifa (Haifa, Israel). July 2012.
- 53. **Path Graphs, PR-trees, and Split Decomposition.** Based on: my Ph.D. thesis and 34.
  - Tutte Seminar – Department of Combinatorics & Optimization, University of Waterloo (Waterloo, ON, Canada). Apr. 2012.
  - Graphs@Ryerson Seminar Series – Mathematics Department, Ryerson University (Toronto, ON, Canada). Feb. 2012. (alt-title: *Path Graphs and PR-trees.*)
  - Noon Lectures – Department of Applied Mathematics, Charles University (Prague, Czech Republic). June 2011. (alt-title: *Characterizing Path Graphs and Directed Path Graphs using PR-trees.*)

- Discrete Math Seminars – Simon Fraser University (Burnaby, BC, Canada). May 2011. (alt-title: *Characterizing Path Graphs and Directed Path Graphs using PR-trees.*)
  - Haifa Tuesday Seminar meetings – Caesarea Rothschild Institute, University of Haifa (Haifa, Israel). Jan. 2011. (alt-title: *Characterizing Path graphs using PR-trees.*)
  - Algorithmique et combinatoire seminar series – LIAFA, Universit  Paris Diderot (Paris 7, France). July 2010. (alt-title: *Characterizing Path graphs using PR-trees.*)
  - ALGCo seminar series – Laboratoire d’Informatique, de Robotique et de Microelectronique de Montpellier (LIRMM), Universit  Montpellier 2 (Montpellier, France). June 2010. (alt-title: *Characterizing the Intersection Models of Path graphs using PR-trees.*)
54. **From path graphs to directed path graphs.** Based on: 28
- Haifa Tuesday Seminar meetings – Caesarea Rothschild Institute, University of Haifa (Haifa, Israel). Jan. 2011.
  - Algorithmique et combinatoire seminar series – Laboratoire d’Informatique Algorithmique: Fondements et Applications (LIAFA), Universit  Paris Diderot (Paris 7, France). Oct. 2010.

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## Academic Community Involvement

### Conference/Workshop Organization

#### Workshop on Geometric Perspectives in Graph Drawing and Information Visualization.

- ▷ Organizers: S.C. and K. Verbeek. Speakers: T. Dwyer, A. Lubiw, G. Liotta, and B. Speckmann.
- ▷ Part of CGWeek 2017 (co-located with SoCG 2017). (CGWeek 2017 homepage). (workshop homepage).

#### 19th Korean Workshop on Computational Geometry.

- ▷ Organizers: S.C., F. Lipp, and A. Wolff.
- ▷ W rzburg, Germany. July 24–29, 2016. (workshop homepage).

#### Workshop on Geometric Representations of Graphs.

- ▷ Organizers: S.C. and P. Micek. Speakers: J. Cardinal, R. Fulek, C. T th, B. Walczak.
- ▷ Part of the SoCG/STOC 2016 Bridge Day (Jun.18.2016). (bridge day homepage); (workshop homepage).

#### Mini-symposium: Geometric Representations of Graphs.

- ▷ Organizer and Chair: S.C. Speakers: S.C., G. Mertzios, G. Gutowski, and J. Hubicka.
- ▷ Part of the 5th biennial Canadian Discrete and Algorithmic Mathematics Conf. (CanaDAM), 2015. (mini-symposium homepage)

#### Mini-symposium: Geometric Representations of Graphs.

- ▷ Organizer and chair: S.C. Speakers: S.C., J. Kratochv l, G. Mertzios, B. Walczak, and M. Schaefer.
- ▷ Part of the SIAM Conf. on Discrete Mathematics (DM), 2014. (mini-symposium homepage)

#### Mini-symposium: Geometric Representations of Graphs.

- ▷ Organizer and chair: S.C. Speakers: S.C., A. Lubiw, M. Schaefer, T. Ueckerdt, and R. Uehara.
- ▷ Part of the 4th CanaDAM, 2013. (mini-symposium homepage)

### Referee Experience

- ▷ **Journals:** CGTA (Journal of Computational Geometry – Theory and Applications), DAM (Discrete Applied Mathematics), DMTCS (Discrete Mathematics & Theoretical Computer Science), IPL (Information Processing Letters), TCS (Theoretical Computer Science).
- ▷ **Conferences:** CIAC (Int. Conf. on Algorithms and Complexity), EUROCOMB (Eur. Conf. on Combinatorics, Graph Theory and Applications), FSTTCS (Foundations of Software Technology and Theoretical Computer Science Conf.), GD (Int. Symp. on Graph Drawing and Network Visualization), ICALP (Int. Colloquium on Automata, Languages, and Programming), IWOCA (Int. Workshop on Combinatorial Algorithms), LAGOS (Latin-American Algorithms, Graphs, and Optimization Symp.), SoCG (Symp. on Computational Geometry), SODA (ACM-SIAM Symp. on Discrete Algorithms), STOC (ACM Symp. on Theory of Computing), WADS (Algorithms and Data Structures Symp.), WG (Int. Workshop on Graph-Theoretic Concepts in Computer Science).

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## Teaching Experience (2006–current)

### Supervision

- Bachelor Thesis, Universit  W rzburg (2016). Co-supervisors: Prof. Dr. A. Wolff and F. Lipp (M.Sc.). *Ursula Scherm. Minimale  berdeckung von Knoten und Kanten in Graphen durch Geraden.*

**Universität Würzburg: Chair of Computer Science I (2015–present)**

**Instructorships:** ~10 students/class, and I am/was the sole instructor of these courses for Masters students.

Oct.2017 – Feb.2018	Computational Geometry (upcoming)
Apr. – Aug.2017	Visualization of Graphs (course homepage)
Oct.2016 – Feb.2017	Approximation Algorithms (course homepage)
Apr. – Aug.2016	Visualization of Graphs (course homepage)
Oct.2015 – Feb.2016	Computational Geometry (course homepage)

**University of Toronto: Department of Computer Science (2006–2011)<sup>2</sup>**

**Instructorships:** ~20 to 60 students/class, and I was the sole instructor of these courses.

May – Aug.2010	CSC373: Algorithm Design & Analysis
May – Aug.2009	CSC165: Mathematical Expression & Reasoning
May – Aug.2008	CSC165: Mathematical Expression & Reasoning
May – Aug.2007	CSC236: Introduction to the Theory of Computation

**Teaching Assistantships:**

May – Aug.2011	CSC373: Algorithm Design & Analysis
Jan. – Apr.2011	CSC373: Algorithm Design & Analysis CSC240: Enriched Introduction to the Theory of Computation
Sept. – Dec.2010	CSC373: Algorithm Design and Analysis
Jan. – Apr.2010	CSC190: Computer Algorithms, Data Structures and Languages Computer Science Undergraduate Help Centre (Head TA)
Sept. – Dec.2009	CSC373: Algorithm Design and Analysis
Jan. – Apr.2009	Computer Science Undergraduate Help Centre (Head TA)
Sept. – Dec.2008	SCI199: From Social Networks to the Internet Computer Science Undergraduate Help Centre (Head TA)
Jan. – Apr.2008	CSC165: Mathematical Expression & Reasoning Computer Science Undergraduate Help Centre (TA)
Sept. – Dec.2007	CSC165: Mathematical Expression & Reasoning
Sept. – Dec.2006	CSC373: Algorithm Design & Analysis CSC363: Introduction to Computing & Complexity

**Certification**

Sept.2006 – Apr.2007	School of Graduate Studies, University of Toronto Teaching Assistant Training Program: Certificate – Teaching Fundamentals <a href="http://tstp.utoronto.ca/certificate-program/tf-certificate/">http://tstp.utoronto.ca/certificate-program/tf-certificate/</a>
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**Administrative Experience (University of Toronto)****May 2007 – Apr.2009 Computer Science Graduate Student Society: President**

- Elected in April 2007, and re-elected in April 2008 to represent the 300 graduate students in computer science. A third term was not sought.
- Interacted with Faculty and Administration to improve the Graduate Program.
- Ensured computer science graduate students interests are represented within the university by establishing and increasing student presence on departmental committees.
- Organized social events and helped to build the community within the department.

**Other Work Experience**

Sept. – Dec.2005	Amazon.com: Software Development Engineer (Supply Chain Optimization)
Jan. – Apr.2005	Amazon.com: Software Development Engineer (Customer Database Systems)
May – Aug.2004	Sun Microsystems Inc.: Java Developer (CRM software)
Sept. – Dec.2003	Chordiant Software Inc.: Software Developer / Consultant (CRM software)
Jan. – Apr.2003	Canada Life Casualty Insurance Company: Database Programmer/Analyst
May – Aug.2002	CGI: Database Programmer/Analyst

<sup>2</sup>These were all bachelor level classes. Descriptions are available in the (course calendar archive).

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## References

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- Professor Alexander Wolff (alexander.wolff@uni-wuerzburg.de)  
Lehrstuhl für Informatik I, Universität Würzburg (Würzburg, Germany).
- Professor Stefan Felsner (felsner@math.tu-berlin.de)  
Discrete and Algorithmic Mathematics Group, Technische Universität Berlin (Berlin, Germany).
- Professor Jan Kratochvíl (honza@kam.mff.cuni.cz)  
Department of Applied Mathematics, Univerzita Karlova (Prague, Czech Republic).
- (Ph.D. Advisor) Professor Derek Corneil (dgc@cs.toronto.edu)  
Department of Computer Science, University of Toronto (Toronto, Canada).