Chaplick, Steven

(Canadian citizen
married to an EU citizen)
November 2018

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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: University of Würzburg (2015 – current)

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

Postdoctoral Researcher: EuroGIGA Collaborative Research Project[1] (2013 – 2015)

Jan.2014 – Jun.2015 TU Berlin: Discrete and Algorithmic Math. Group (PI: Stefan Felsner)
Feb.2013 – Dec.2013 Charles University: Dept. of Applied Math. (PI: Jan Kratochvíl)

Visiting Researcher (2012–2013)

Oct.2012 – Jan.2013 Wilfrid Laurier University: Dept. of Physics and Computer Science (Advisors: Kathie Cameron & Chính Hoàng)
Aug.2012 – Oct.2012 University of Toronto: Dept. of Computer Science (Advisor: Derek Corneil)
Jul.2012 University of Haifa: Caesarea Rothschild Inst. (Advisor: Martin Golumbic)
May 2012 – Jun.2012 Simon Fraser University: School of Computing Science (Advisor: Pavol Hell)
Jan.2012 – Apr.2012 Wilfrid Laurier University: Dept. of Physics and Computer Science (Advisors: Kathie Cameron & Chính 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

Professional Membership(s)

- European Association for Theoretical Computer Science (EATCS).

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). ⟨pdf⟩.
- **PQR-trees and Undirected Path Graphs.** M.Sc. thesis. University of Toronto (2008). ⟨pdf⟩.

Academic Community Involvement

Program Committees

(GD 2018) Graph Drawing and Network Visualization: 26th Int. Symp. ⟨GD 2018 homepage⟩
(WG 2018) Graph-Theoretic Concepts in Computer Science: 44th Int. Workshop. ⟨WG 2018 homepage⟩.

Conference/Workshop Organization

(2018) **Workshop on Constrained Recognition Problems.**
▷ Organizers: **S.C.** and I. Rutter. Speakers: Y. Cao, J. Kratochvíl, MS Ramanujan, and B. Walczak.
▷ Co-located with ICALP 2018. ⟨ICALP 2018 homepage⟩. ⟨workshop homepage⟩.

[1] EuroGIGA overview: archives.esf.org/coordinating-research/eurocores/programmes/eurogiga.

(2017) **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⟩.
(2016) **19th Korean Workshop on Computational Geometry.**
▷ Organizers: **S.C.**, F. Lipp, and A. Wolff.
▷ Würzburg, Germany. July 24–29. ⟨workshop homepage⟩.
(2016) **Workshop on Geometric Representations of Graphs.**
▷ Organizers: **S.C.** and P. Micek. Speakers: J. Cardinal, R. Fulek, C. Tóth, B. Walczak.
▷ Part of the SoCG/STOC 2016 Bridge Day (Jun.18.2016). ⟨bridge day homepage⟩; ⟨workshop homepage⟩.
(2015) **Mini-symposium: Geometric Representations of Graphs.**
▷ Organizer: **S.C.** Speakers: **S.C.**, G. Mertzios, G. Gutowski, and J. Hubicka.
▷ Part of the 5th biennial Canadian Discrete and Algorithmic Math. Conf. (CanaDAM). ⟨homepage⟩
(2014) **Mini-symposium: Geometric Representations of Graphs.**
▷ Organizer: **S.C.** Speakers: **S.C.**, J. Kratochvíl, G. Mertzios, B. Walczak, and M. Schaefer.
▷ Part of the SIAM Conf. on Discrete Math. (DM14). ⟨homepage⟩
(2013) **Mini-symposium: Geometric Representations of Graphs.**
▷ Organizer: **S.C.** Speakers: **S.C.**, A. Lubiw, M. Schaefer, T. Ueckerdt, and R. Uehara.
▷ Part of the 4th biennial Canadian Discrete and Algorithmic Math. Conf. (CanaDAM), ⟨homepage⟩

Referee Experience

Reviewer for MathSciNet.
Granting Agencies:
Mobility Grants – SERI (State Secretariat for Education, Research and Innovation), Switzerland.
Journals:
Algorithmica,
CGTA (Computational Geometry: Theory and Applications),
DAM (Discrete Applied Math.),
DMTCS (Discrete Math. & Theoretical Computer Science),
IPL (Inf. Process. Lett.),
TCS (Theoretical Computer Science).
Conferences:
CALDAM (Conf. on Algorithms and Discrete Applied Math.),
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),
STACS (Int. Symp. on Theoretical Aspects of Computer Science),
STOC (ACM Symp. on Theory of Computing),
WADS (Algorithms and Data Structures Symp.),
WG (Int. Workshop on Graph-Theoretic Concepts in Computer Science).

Refereed Publications

Notes: • Conference proceedings marked with ⋆ indicate that I gave the presentation.
• ArXiv:YYMM.nnnnn is the identifier for an open access preprint of the full version available at `arxiv.org`.

1. **Extending Partial Representations of Circle Graphs.**
Authors: **S.C.**, R. Fulek, and P. Klavík.
Journal: (2018+) Journal of Graph Theory – accepted Oct.2018.
Conf.: ⋆ (GD 2013) Graph Drawing: 21st Int. Symp. LNCS 8242: 131–142. ArXiv:1309.2399.

2. **On some Graphs with a Unique Perfect Matching.**
Authors: **S.C.**, M. Fürst, F. Maffray, D. Rautenbach.
Journal: (2018) Inf. Process. Lett. 139:60–63. DOI:10.1016/j.ipl.2018.07.008 ArXiv:1712.04228

3. Placing your Coins on a Shelf.
Authors: H. Alt, K. Buchin, **S.C.**, O. Cheong, P. Kindermann, C. Knauer, F. Stehn.
Journal: (2018) Journal of Computational Geometry 9(1): 312–327. DOI:10.20382/jocg.v9i1a10. ArXiv:1707.01239.
Conf.: (ISAAC 2017) Algorithms and Computation: 28th Int. Symp. LIPIcs 92, 4:1–4:12.

4. Compact Drawings of 1-Planar Graphs with Right-Angle Crossings
Authors: **S.C.**, F. Lipp, A. Wolff, J. Zink
Conf.: (GD 2018) Graph Drawing & Network Visualization: 26th Int. Symp. LNCS (to appear). ArXiv:1806.10044.

5. Approximation Schemes for Geometric Coverage Problems.
Authors: **S.C.**, M. De, A. Ravsky, and J. Spoerhase.
Conf.: (ESA 2018) 26th Eur. Symp. on Algorithms. LIPIcs 112, 17:1–17:15. ArXiv:1607.06665.
Notes: Presented as a Brief Announcement at ICALP 2018 C DOI:10.4230/LIPIcs.ICALP.2018.107, and at research seminars 0.

6. The Partial Visibility Representation Extension Problem.
Authors: **S.C.**, G. Guśpiel, G. Gutowski, T. Krawczyk, and G. Liotta.
Journal: (2018) Algorithmica 80(8): 2286-2323. DOI:10.1007/s00453-017-0322-4. ArXiv:1512.00174.
Conf.: ⋆ (GD 2016) Graph Drawing & Network Visualization: 24th Int. Symp. LNCS 9801: 266-279.

7. On the structure of (pan, even hole)-free graphs.
Authors: K. Cameron, **S.C.**, and C. Hoàng.
Journal: (2018) Journal of Graph Theory, 87(1):108–129. DOI:10.1002/jgt.22146. ArXiv:1508.03062.
Notes: Preliminary results presented at conferences. See: H.

8. Grid Intersection Graphs and Order Dimension.
Authors: **S.C.**, S. Felsner, U. Hoffman, and V. Wiechert.
Journal: (2018) Order 35(2):363-391. DOI:10.1007/s11083-017-9437-0. ArXiv:1512.02482.

9. 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: (2017) Discrete Applied Math.: Special Graph Classes and Algorithms – in Honor of Professor Andreas Brandstädt on the Occasion of His 65th Birthday. 216 (part 1): 2–14. DOI:10.1016/j.dam.2015.09.003. ArXiv:1302.6183
Conf.: (WG 2013) Graph-Theoretic Concepts in Computer Science: 39th Int. Workshop. LNCS 8165: 26–37. (alt-title: *Threshold-Coloring and Unit-Cube Contact Representations of Graphs.*)

10. Max Point-Tolerance Graphs.
Authors: D. Catanzaro, **S.C.**, S. Felsner, B.V. Halldórsson, M.M. Halldórsson, T. Hixon, and J. Stacho.
Journal: (2017) Discrete Applied Math.: Special Graph Classes and Algorithms – in Honor of Professor Andreas Brandstädt on the Occasion of His 65th Birthday. 216 (part 1): 84–97. DOI:10.1016/j.dam.2015.08.019. ArXiv:1508.03810.

11. Ferrers Dimension of Grid Intersection Graphs.
Authors: **S.C.**, P. Hell, Y. Otachi, T. Saitoh, and R. Uehara.
Journal: (2017) Discrete Applied Math.: Special Graph Classes and Algorithms – in Honor of Professor Andreas Brandstädt on the Occasion of His 65th Birthday. 216 (part 1): 130–135. DOI:10.1016/j.dam.2015.05.035.
Conf.: (TAMC 2014) Theory and Applications of Models of Computation: 11th Conf. LNCS 8402: 323–340. (alt-title: *Intersection Dimension of Bipartite Graphs.*)

12. Beyond Outerplanarity.
Authors: **S.C.**, M. Kryven, G. Liotta, A. Löffler, and A. Wolff.
Conf.: ⋆ (GD 2017) Graph Drawing & Network Visualization: 25th Int. Symp. LNCS 10692: 546-559. ArXiv:1708.08723.
Notes: Video, GROW 2017: `www.fields.utoronto.ca/video-archive/static/2017/10/2154-17693/mergedvideo.ogv`

13. 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.
Conf.: (GD 2017) Graph Drawing & Network Visualization: 25th Int. Symp. LNCS 10692: 465–478. ArXiv:1708.09107.

14. **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.
Conf.: (GD 2017) Graph Drawing & Network Visualization: 25th Int. Symp. LNCS 10692: 24–37. ArXiv:1708.09233.

15. **Combinatorial Problems on H-Graphs.**
Authors: **S.C.**, and P. Zeman.
Conf.: (EUROCOMB 2017) Eur. Conf. on Combinatorics, Graph Theory and Applications. ENDM 61: 223–229. ArXiv:1706.00575.

16. **On H-Topological Intersection Graphs.**
Authors: **S.C.**, M. Töpfer, J. Voborník, and P. Zeman.
Conf.: (WG 2017) Graph-Theoretic Concepts in Computer Science: 43rd Int. Workshop. LNCS 10520: 167–179. ArXiv:1608.02389.

17. **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.
Conf.: (WADS 2017) Algorithms and Data Structures Symp. LNCS 10389: 265–276. Preprint: ArXiv:1607.06444.

18. **Edge Intersection Graphs of L-Shaped Grid Paths.**
Authors: K. Cameron, **S.C.**, and C. Hoàng.
Journal: (2016) Discrete Applied Math. (LAGOS 2013 special issue). 210: 184-194. DOI:10.1016/j.dam.2015.01.039 ArXiv:1204.5702.
Conf.: (LAGOS 2013) VII Latin-American Algorithms, Graphs, and Optimization Symp. ENDM 44: 363–369.

19. **A note on concurrent graph sharing games.**
Authors: **S.C.**, P. Micek, T. Ueckerdt, and V. Weichert.
Journal: (2016) Integers: Electronic Journal of Combinatorial Number Theory 16:G1. www.integers-ejcnt.org/vol16.html ArXiv:1411.1021.

20. **Drawing Graphs on Few Lines and Few Planes.**
Authors: **S.C.**, K. Fleszar, F. Lipp, A. Ravsky, O. Verbitsky, and A. Wolff.
Conf.: (GD 2016) Graph Drawing & Network Visualization: 24th Int. Symp. LNCS 9801: 166–180. ArXiv:1607.01196.

21. **Obstructing Visibilities with One Obstacle.**
Authors: **S.C.**, F. Lipp, J. Park, A. Wolff.
Conf.: (GD 2016) Graph Drawing & Network Visualization: 24th Int. Symp. LNCS 9801: 295–308. ArXiv:1607.00278.

22. **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.
Conf.: (GD 2016) Graph Drawing & Network Visualization: 24th Int. Symp. LNCS 9801: 532–545. ArXiv:1608.08427.

23. **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: (2015) Theoretical Computer Science (FCT 2013 special issue). 590: 86–95. DOI:10.1016/j.tcs.2015.01.028 ArXiv:1408.6676.
Conf.: (FCT 2013) Fundamentals of Computation Theory: 19th Int. Symp. LNCS 8070: 121-132.
Notes: Preliminary results also presented at ATCAGC 2012. See: M

24. **Contact Representations of Planar Graphs: Extending a Partial Representation is Hard.**
Authors: **S.C.**, P. Dorbec, J. Kratochvíl, M. Montassier, and J. Stacho.
Conf.: (WG 2014) Graph-Theoretic Concepts in Computer Science: 40th Int. Workshop. LNCS 8747: 139–151.

25. **The vertex leafage of chordal graphs.**
Authors: **S.C.**, and J. Stacho.
Journal: (2014) Discrete Applied Math.: 5th Workshop on Graph Classes, Optimization, and Width Parameters (GROW 2011). 168: 14–25. DOI:10.1016/j.dam.2012.12.006 ArXiv:1104.2524.
Notes: Results presented at CanaDAM 2011, see N.

26. Stabbing Polygonal Chains with Rays is Hard to Approximate.
Authors: **S.C.**, E. Cohen, and G. Morgenstern.
Conf.: ⋆ (CCCG 2013) 25th Canadian Conf. on Computational Geometry: pp.141–144.

27. Equilateral L-Contact Graphs.
Authors: **S.C.**, S. Kobourov, and T. Ueckerdt.
Conf.: ⋆ (WG 2013) Graph-Theoretic Concepts in Computer Science: 39th Int. Workshop. LNCS 8165: 139–151. ArXiv:1303.1279.

28. Planar Graphs as VPG-Graphs.
Authors: **S.C.**, and T. Ueckerdt.
Journal: (2013) Journal of Graph Algorithms and Applications (GD 2012 special issue). 17(4): 475–494. DOI:10.7155/jgaa.00300.
Conf.: ⋆ (GD 2012) Graph Drawing: 20th Int. Symp. LNCS 7704: 174–186.
Notes: Video, GD 2012: `www.microsoft.com/en-us/research/video/graph-drawing-2012-day-2-session-2/`

29. Bend-Bounded Path Intersection Graphs: Sausages, Noodles, and Waffles on a Grill.
Authors: **S.C.**, V. Jelínek, J. Kratochvíl, and T. Vyskočil
Conf.: ⋆ (WG 2012) Graph-Theoretic Concepts in Computer Science: 38th Int. Workshop. LNCS 7551: 274–285. ArXiv:1206.5159.

30. Recognizing Some Subclasses of Vertex Intersection Graphs of 0-Bend Paths in a Grid.
Authors: **S.C.**, E. Cohen, and J. Stacho.
Conf.: (WG 2011) Graph-Theoretic Concepts in Computer Science: 37th Int. Workshop. LNCS 6986: 319–330.

31. From path graphs to directed path graphs.
Authors: **S.C.**, M. Gutierrez, B. Lèvêque, and S. Tondato.
Conf.: ⋆ (WG 2010) Graph-Theoretic Concepts in Computer Science: 36th Int. Workshop. LNCS 6410: 256–265.

Submitted Articles

32. Bundled Crossings Revisited
Authors: **S.C.**, T.C. van Dijk, M. Kryven, J. Park, A. Ravsky, and A. Wolff

33. Monotone Arc Diagrams with few Biarcs.
Authors: **S.C.**, H. Förster, M. Hoffmann, and M. Kaufmann

34. Kernelization of Graph Hamiltonicity: Proper H-Graphs.
Authors: **S.C.**, F. Fomin, P. Golovach, D. Knop, and P. Zeman

35. Representing Planar Graphs by Convex Sets.
Authors: **S.C.**, and T. Ueckerdt.
Notes: Preliminary results presented at CanaDAM 2015. See: G.

Some Work In Progress

36. On proper H-topological Intersection Graphs.
Authors: **S.C.**, P. Golovach, T. Hartmann, D. Knop, and P. Zeman

37. 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: E, Q

38. Solving Optimization Problems on Orthogonal Ray Graphs.
Authors: **S.C.**, P. Kindermann, F. Lipp, and A. Wolff.
Notes: Preliminary results presented at JCDCG^2 2015. See: F.

39. Characterizing and Recognizing Path Graphs and Directed Path Graphs using PR-trees.
Authors: **S.C.**
Draft: ⟨pdf⟩.

Invited Presentations

A. Constrained Recognition Problems on Geometric Graph Classes.
17th Haifa Workshop on Interdisciplinary Applications of Graph Theory, Combinatorics and Algorithms, June 2017. ⟨workshop homepage⟩

B. Canonical Orders of Planar Graphs and Their Applications.
Informatik-Kolloquium, Institut für Informatik, Universität Würzburg. Apr. 2015.

Other Conference Presentations (grouped by topic)

C. Approximation Schemes for Geometric Coverage Problems. Based on: 5
(ICALP 2018) Automata, Languages, and Programming: 45th Int. Col. (Brief Announcement)

D. Beyond Outerplanarity. Based on: 12
(GROW 2017) Graph Classes, Optimization, and Width Parameters: 8th workshop. (Attendance by invitation only). Video: www.fields.utoronto.ca/video-archive/static/2017/10/2154-17693/mergedvideo.ogv

E. Intersection graphs of Non-Crossing Paths. Based on: 37
(GROW 2015) Graph Classes, Optimization, and Width Parameters: 7th Workshop. (Attendance by invitation only)

F. Solving Optimization Problems on Orthogonal Ray Graphs. Based on: 38
(JCDCG^2 2015) Discrete and Computational Geometry and Graphs: 18th Japan Conf.

G. Representing Planar Graphs By Homothets of Convex Sets. Based on: 35
(2015) Geometric Representations of Graphs Mini-symposium. 5th CanaDAM.

H. On (odd-apple,even-hole)-free graphs. Based on: 7
(2014) Midsummer Combinatorial Workshop XX, (alt-title: *On (claw,even-hole)-free graphs.*)
(2014) Graph Structure and Algorithms Mini-symposium. SIAM DM,
(alt-title: *Recognizing and Colouring Claw-Free Graphs Without Even Holes.*)

I. Extending Partial Representations of Circle Graphs. Based on: 1
(2014) Geometric Representations of Graphs Mini-symposium. SIAM DM.
(2013) 27th Leoben-Ljubljana Graph Theory seminar.

J. Max Point-Tolerance Graphs. Based on: 10
(2013) Geometric Representations of Graphs Mini-symposium. 4th CanaDAM.

K. Edge Intersection Graphs of L-Shaped Grid Paths. Based on: 18
(2012) The 12th Haifa Workshop on Interdisciplinary Applications of Graph Theory, Combinatorics and Algorithms.
(2012 PDMW) 9th Prairie Discrete Math Workshop.

L. Path Graphs and PR-trees. Based on: my Ph.D. thesis and 39
(2012) Graph Algorithms Mini-Symposium. SIAM DM.
2nd Workshop on Graph Decompositions: Theoretical, Algorithmic and Logical Aspects, 2010.
(alt-title: *Characterizing Path Graphs and Directed Path Graphs using PR-trees.*)
(2009) Combinatorics and Combinatorial Computing: 23rd Midwest Conf.
(alt-title: *Characterizing the intersection graphs of paths in trees using PR-trees*)

M. Locally Constrained Homomorphism with Bounded Parameters. Based on: 23
(2012 ATCAGC) Algebraic, Topological and Complexity Aspects of Graph Covers: 4th Workshop.

N. The Vertex Leafage of Chordal Graphs. Based on: 25
(2011) Graph Algorithms and Complexity (Contributed Talks). 3rd CanaDAM.

Seminars (grouped by topic)

O. Approximation Schemes for Geometric Coverage Problems. Based on: 5
(07.2018) Talks – Vienna Center for Logic and Algorithms, TU Wein (Austria).
(12.2017) Noon Lectures – Dept. of Applied Math., Charles University (Czech Republic).

P. Constrained Recognition Problems on Geometric Graph Classes.
(10.2017) Algorithms seminar series – Dept. of Informatics, University of Bergen (Norway).

Q. Intersection graphs of Non-Crossing Paths. Based on: 37
(04.2016) Algorithmic aspects of combinatorics Seminar – Dept. of Theoretical Computer Science, Jagiellonian University (Poland).

R. Overlap and Intersection Representations of Planar Graphs by Squares. Based on: 35

(10.2014) Noon Lectures – Dept. of Applied Math., Charles University (Czech Republic).

S. **Max Point-Tolerance Graphs.** Based on: 10
(10.2013) Algorithms and Complexity in Durham Seminar Series – School of Engineering and Computer Science, Durham University (United Kingdom).
(06.2013) Graphs@Ryerson Seminar Series – Math. Dept., Ryerson University (Canada).
(01.2013) Computer Science Colloquium – University of Arizona (USA).

T. **Extending Partial Representations of Circle Graphs.** Based on: 1
(09.2013) Algorithmique et combinatoire seminar series – Laboratoire d'Informatique Algorithmique: Fondements et Applications (LIAFA), Universitie Paris Diderot (France).

U. **Bend-Bounded Path Intersection Graphs: Sausages, Noodles, and Waffles on a Grill.** Based on: 29
(11.2012) A&C Seminar Series – Dept. of Computer Science, University of Waterloo (Canada).
(05.2012) Discrete Math Seminars at Simon Fraser University (Canada).

V. **Planar Graphs as Contact and Intersection Graphs of Grid Paths.** Based on: 28
(07.2012) Special Graph Theory Lecture – Caesarea Rothschild Inst., University of Haifa (Israel).

W. **Path Graphs, PR-trees, and Split Decomposition.** Based on: my Ph.D. thesis and 39.
(04.2012) Tutte Seminar – Dept. of Combinatorics & Optimization, University of Waterloo (Canada).
(02.2012) Graphs@Ryerson Seminar Series – Math. Dept., Ryerson University (Canada).
(alt-title: *Path Graphs and PR-trees.*)
(06.2011) Noon Lectures – Dept. of Applied Math., Charles University (Czech Republic).
(alt-title: *Characterizing Path Graphs and Directed Path Graphs using PR-trees.*)
(05.2011) Discrete Math Seminars – Simon Fraser University (Canada).
(alt-title: *Characterizing Path Graphs and Directed Path Graphs using PR-trees.*)
(01.2011) Haifa Tuesday Seminar – Caesarea Rothschild Inst., University of Haifa (Israel).
(alt-title: *Characterizing Path graphs using PR-trees.*)
(07.2010) Algorithmique et combinatoire seminar series – LIAFA, Universitie Paris Diderot (France).
(alt-title: *Characterizing Path graphs using PR-trees.*)
(06.2010) AlGCo seminar series – Laboratoire d'Informatique, de Robotique et de Microelectronique de Montpellier (LIRMM), Universitie Montpellier 2 (France).
(alt-title: *Characterizing the Intersection Models of Path graphs using PR-trees.*)

X. **From path graphs to directed path graphs.** Based on: 31
(01.2011) Haifa Tuesday Seminar – Caesarea Rothschild Inst., University of Haifa (Israel).
(10.2010) Algorithmique et combinatoire seminar series – Laboratoire d'Informatique Algorithmique: Fondements et Applications (LIAFA), Universitie Paris Diderot (France).

Teaching Experience (2006–current)

Supervision

- (2018) Bachelor Thesis, Universität Würzburg. Co-supervisors: A. Löffler.

Rainer Schmönger. **On the Edge Density of k-planar Graphs.**

- (2017) Masters Thesis, Universität Würzburg. Co-supervisors: Prof. Dr. A. Wolff and F. Lipp.

Johannes Zink. **1-Planar RAC Drawings with Bends.**

- (2016) Bachelor Thesis, Universität Würzburg. Co-supervisors: Prof. Dr. A. Wolff and F. Lipp.

Ursula Scherm. **Minimale Überdeckung von Knoten und Kanten in Graphen durch Geraden.**

University of Würzburg: Institute of Computer Science (2015–present)

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

Oct.2018 – Feb.2019	Exact Algorithms ⟨course homepage⟩
Apr. – Aug.2018	Visualization of Graphs ⟨course homepage⟩
Oct.2017 – Feb.2018	Computational Geometry ⟨course homepage⟩
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: Dept. of Computer Science (2006–2011)[2]

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 – School of Graduate Studies, University of Toronto

Sept.2006 – Apr.2007 Teaching Assistant Training Program: Certificate – Teaching Fundamentals
`http://tatp.utoronto.ca/certificate-program/tf-certificate/`

Administrative Experience (University of Toronto)

May 2007 – Apr.2009 **Computer Science Graduate Student Society: President**

- Elected in Apr.2007, and re-elected in Apr.2008 by the ~ 300 computer science graduate students.
- 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

References

- Professor Alexander Wolff (✉: `alexander.wolff@uni-wuerzburg.de`; ☎: +49 931-31-85055)
  Inst. of Computer Science, University of Würzburg (Würzburg, Germany).
- Professor Giuseppe Liotta (✉: `giuseppe.liotta@unipg.it`; ☎: +39 075-5853685)
  Dept. of Engineering, University of Perugia (Perugia, Italy).
- Professor Stefan Felsner (✉: `felsner@math.tu-berlin.de`; ☎: +49 30-314 29297)
  Discrete and Algorithmic Math. Group, Technishe Universität Berlin (Berlin, Germany).

[2]These were all bachelor level classes. Descriptions are available in the ⟨course calendar archive⟩.

- Professor Jan Kratochvíl (✉: honza@kam.mff.cuni.cz; ☎: +420 221914234)
  Dept. of Applied Math., Charles University (Prague, Czech Republic).