Prof. Shay Mozes

PERSONAL INFORMATION

Address: The Interdisciplinary Center Herzliya, P.O.B. 167 Herzliya, 46150, Israel.

E-mail: smozes@idc.ac.il *Tel:* +972-9-9525357

Website: https://cs.idc.ac.il/~smozes/index.html

ACADEMIC EDUCATION

B.Sc. in Physics and Computer Science (Summa cum laude) 1999–2002

The Hebrew University, Jerusalem

M.Sc. in Physics (Quantum information theory) 2002–2004

Advisor: Prof. Benni Reznik

Tel-Aviv University

M.Sc. in Computer Science

2008

Thesis: "Some Upper and Lower Bounds for Tree Edit Distance"

Advisor: Prof. Philip Klein

Brown University

Ph.D. in Computer Science

2007-2012

updated: July 2020

Thesis: "Efficient Algorithms for Shortest-Path and Maximum-Flow Problems in Planar Graphs"

Advisor: Prof. Philip Klein

Brown University

ACADEMIC EMPLOYMENT

Associate Professor January 2019 –

Efi Arazi School of Computer Science The Interdisciplinary Center Herzliya

Senior Lecturer October 2013 – December 2018

Efi Arazi School of Computer Science The Interdisciplinary Center Herzliya

Postdoctoral Fellow

September 2012-August 2013

Department of Mathematics and Computer Science and Artificial Intelligence Lab (CSAIL)

Massachusetts Institute of Technology

Host: Prof. Jonathan Kelner

Co-Instructor Fall 2011

6.889: Algorithms for planar graphs and beyond

Massachusetts Institute of Technology

Guest Lecturer Spring 2011

Planar graph algorithms

Brown University

Graduate Teaching Assistant 2008–2010

The Matrix in Computer Science (fall 2008, fall 2009)

Introduction to Algorithms and Data Structures (spring 2010) *Brown University*

Consultant and Programmer

2006-2007

Applied computational and statistical techniques to handle large scale fMRI data.

Gabrieli Lab, Department of Brain and Cognitive Sciences

Massachusetts Institute of Technology

Teaching Assistant 2002–2004

C for physicists

Numerical methods for physicists

Tel-Aviv University

Research Assistant 2002–2004

Research related to computational linear algebra and combinatorial optimization *School of Mathematics and Computer Science, Tel-Aviv University*

Honors and Awards

ICALP 2020 best paper award (track A, with P. Gawrychowski and O. Weimann)

IDC outstanding researcher award (2018)

IDC outstanding lecturer award (2015,2017)

MIT Postdoctoral Association travel grant (awarded to 6 of 34 applications)

Kanellakis fellowship (summer 2011)

ESA 2010 best student paper award (with C. Wulff-Nilsen)

Kanellakis fellowship (summer 2010)

CPM 2007 best paper award (with O. Weimann and M. Ziv Ukelson)

Ann and Maurice Cohen award - awarded to best incoming graduate students at Tel-Aviv University, 2003

Summa Cum Laude graduation honors from the Hebrew University in Jerusalem

Dean's list, Faculty of Science at The Hebrew University in Jerusalem (2000-2001)

Dean's list, Faculty of Science at The Hebrew University in Jerusalem (1999-2000)

Amirim honors program for B.Sc. in exact sciences (Hebrew University in Jerusalem)

GRANTS AWARDED

Israeli Science Foundation (ISF) research grant 592/17 "Arbology - Pattern Matching on Trees", 1,600,000 NIS, 2017–2021 (with O. Weimann)

Israeli Science Foundation (ISF) research grant 794/13 "Planar-Graph Algorithms – Solving Problems Faster on Graphs that Matter", 1,040,000 NIS, 2013–2018 (with O. Weimann)

Professional Service

Program committee member:

- FOCS 2020
- CPM 2020

- 8th Haifa Workshop on Interdisciplinary Applications of Graph Theory, Combinatorics, and Algorithms (2018) co-chair
- SODA 2017
- ESA 2014 (track A)

Conference reviews: SODA 2021, ICALP 2020, STOC 2020, SoCG 2020, ITCS 2020, SODA 2020, FOCS 2019, STOC 2019, SODA 2019, FOCS 2018, ICALP 2018, SoCG 2018, LATIN 2018, SODA 2018, ESA 2017, FOCS 2017, ICALP 2017, STOC 2016, IWOCA 2016, PODC 2016, CPM 2016, LATIN 2016, SODA 2016, ISAAC 2015, FOCS 2015, WG 2015, ESA 2015, STOC 2015, ISAAC 2013, ESA 2013, ICALP 2013, SODA 2013, FOCS 2012, LATIN 2012, ICALP 2012, CPM 2011, STACS 2011, FOCS 2010, ICALP 2010, SODA 2010, FOCS 2009, ICALP 2008.

Journal reviews: ACM Transactions on Algorithms, Algorithmica, Information Processing Letters, Networks, Quantum Information and Computation.

Grant reviews: National Science Centre (Poland, 2019), Natural Sciences and Engineering Research Council of Canada (2017).

Technical assistance to the PC chair of SODA 2009.

Organizer of the theory lunch seminar series at Brown (2009).

Assistance to the organizing team of FOCS 2007.

STUDENT SUPERVISION

Benjamin Tebeka Exact Distance Oracles for Planar Graphs with Failing Vertices, M.Sc., Graduated July 2018.

Itay Laish Efficient Dynamic Vertex-Label Distance Oracles for Planar Graphs, M.Sc., Graduated 2017.

Eyal E. Skop. Efficient Vertex-Label Distance Oracles for Planar Graphs, M.Sc., Graduated 2015.

POSTDOCTORAL FELLOWS HOSTED

Yahav Nussbaum (2014, co-hosted with O. Weimann)

Paweł Gawrychowski (2016-2017, co-hosted with O. Weimann)

COURSES TAUGHT

IDC Herzliya

Computability and complexity (Spring 2014, Spring 2015, Spring 2016, Spring 2017, Spring 2018, Spring 2019, Spring 2020)

Advanced algorithms (Fall 2014, Fall 2015, Fall 2016, Fall 2017, Fall 2018)

Topics in algorithms and theory of computer science (seminar, Fall 2014)

Algorithms for planar graphs (Fall 2013, Fall 2015)

Advanced data structures (Fall 2016, Fall 2019)

Data structure and algorithms for data science (Fall 2019)

Quantum computation (seminar, Spring 2020)

Massachusetts Institute of Technology

6.889: Algorithms for planar graphs and beyond (Fall 2011)

PUBLICATIONS

The first three journal publications are in physics. In all other publications (journal and conference), in accordance to the common practice in computer science literature, the authors appear in alphabetical order.

UNTIL LAST PROMOTION

REFEREED JOURNAL PUBLICATIONS

- J1 "The Effect of Unitary Noise on Grover's Quantum Search Algorithm", Daniel Shapira, Shay Mozes and Ofer Biham. *Phys. Rev. A.* 67, 042301 (2003). 39 citations.
- J2 "Deterministic Dense Coding with Partially Entangled states", Shay Mozes, Jonathan Oppenheim and Benni Reznik. *Phys. Rev. A.* 71, 012311 (2005). 66 citations.
- J3 "A new construction for a QMA complete 3-local Hamiltonian", Daniel Nagaj and Shay Mozes. *J. Math. Phys.* 48, 072104 (2007). 31 citations.
- "Speeding Up HMM Decoding and Training by Exploiting Sequence Repetitions", Yury Lifshits, Shay Mozes, Oren Weimann and Michal Ziv-Ukelson. *Algorithmica* Vol. 54 (3) (2009), Page 379. Preliminary version appeared in CPM 2007 [C2]. 25 citations.
- J5 "An Optimal Decomposition Algorithm for Tree Edit Distance", Erik Demaine, Shay Mozes, Benjamin Rossman, Oren Weimann. *ACM Transactions on Algorithms (TALG)*, Vol. 6 (1) (2009). Preliminary version appeared in ICALP 2007 [??]. 132 citations.
- J6 "Fast algorithms for computing tree LCS", Shay Mozes, Dekel Tsur, Oren Weimann and Michal Ziv-Ukelson. *Theoretical Computer Science*, 410 (43): 4303-4314 (2009). Preliminary version appeared in CPM 2008 [C4]. 8 citations.
- J7 "Shortest Paths in Directed Planar Graphs with Negative Lengths: a Linear-Space $O(n \log^2 n)$ Time Algorithm", Philip Klein, Shay Mozes and Oren Weimann. Invited submission to *ACM Transactions on Algorithms special issue for SODA 2009 (TALG)* Vol. 6 (2) (2010). Preliminary version appeared in SODA 2009 [C5]. 87 citations.
- J8 "Efficient Algorithms for Analyzing Segmental Duplications with Deletions and Inversions in Genomes", Crystal Kahn, Shay Mozes and Ben Raphael. *Algorithms for Molecular Biology* 2010, 5:11. Preliminary version appeared in WABI 2009 [C6].
- J9 "Short and Simple Cycle Separators in Planar Graphs", Eli Fox-Epstein, Shay Mozes, Phitchaya Mangpo Phothilimthana, and Christian Sommer, invited submission in ACM Journal of Experimental Algorithmics (JEA) special issue for ALENEX 2013 21(1):2.2 (2016). Preliminary version appeared in ALENEX 2013 [C14].
- "Submatrix Maximum Queries in Monge Matrices and Partial Monge Matrices, and Their Applications", Haim Kaplan, Shay Mozes, Yahav Nussbaum and Micha Sharir, ACM Transactions on Algorithms (TALG) 13 (2):26 (2017). Preliminary version appeared in SODA 2012 [C13].
- "Multiple-Source Multiple-Sink Maximum Flow in Directed Planar Graphs in Near-Linear Time", Glencora Borradaile, Philip Klein, Shay Mozes, Yahav Nussbaum and Christian Wulff-Nilsen, *SIAM Journal on Computing (SICOMP)* 46(4), 1280-1303 (2017). Preliminary version appeared in FOCS 2011 [C11].

- J12 "The Nearest Colored Node in a Tree", Paweł Gawrychowski, Gad M. Landau, Shay Mozes and Oren Weimann, *Theoretical Computer Science (TCS)*, 710: 66-73 (2018). Preliminary version appeared in CPM 2016 [C20].
- J13 "Faster Shortest Paths in Dense Distance Graphs, with Applications", Shay Mozes, Yahav Nussbaum and Oren Weimann, *Theoretical Computer Science (TCS)*, 711: 11-35 (2018).
- J14 "Efficient Vertex-Label Distance Oracles for Planar Graphs", Shay Mozes and Eyal E. Skop, Invited submission in *Theory of Computing Systems (ToCS) special issue for WAOA 2015*, 62(2): 419-440 (2018). Preliminary version appeared in WAOA 2015 [??].
- J15 "Efficient Dynamic Approximate Distance Oracles for Vertex-Labeled Planar Graphs", Itay Laish and Shay Mozes, Invited submission in *Theory of Computing Systems (ToCS) special issue for WAOA 2017*, 63(8): 1849-1874 (2019). Preliminary version appeared in WAOA 2017 [C22].
- J16 "Submatrix Maximum Queries in Monge and Partial Monge Matrices Are Equivalent to Predecessor Search", Paweł Gawrychowski, Shay Mozes and Oren Weimann, *ACM Transactions on Algorithms (TALG)*, 16(2): 16:1-16:24 (2020). Preliminary version appeared in ICALP 2015 [C18].
- J17 "Compressed Range Minimum Queries", Paweł Gawrychowski, Seungbum Jo, Shay Mozes and Oren Weimann, *Theoretical Computer Science (TCS)*, 812: 39-48 (2020). Preliminary version appeared in SPIRE 2018 [C28].
- J18 "Tree Edit Distance Cannot be Computed in Strongly Subcubic Time (Unless APSP Can)", Karl Bringmann, Paweł Gawrychowski, Shay Mozes, Oren Weimann, *ACM Transactions on Algorithms (TALG)* 16(4): 48:1-48:22 (2020). Preliminary version appeared in SODA 2018 [C25].

REFEREED CONFERENCE PUBLICATIONS

- C1 "An Optimal Decomposition Algorithm for Tree Edit Distance", Erik Demaine, Shay Mozes, Benjamin Rossman, Oren Weimann. In *Proceedings of the 34th International Colloquium on Automata, Languages and Programming (ICALP 2007)*, pages 146-157.
- C2 "Speeding Up HMM Decoding and Training by Exploiting Sequence Repetitions", Shay Mozes, Oren Weimann and Michal Ziv-Ukelson. In *Proceedings of the 18th Annual Symposium on Combinatorial Pattern Matching (CPM 2007)*, pages 4-15. Recipient of the **CPM 2007 best paper award**.
- C3 "Finding an Optimal Tree Searching Strategy in Linear Time", Shay Mozes, Krzysztof Onak and Oren Weimann. In *Proceedings of the 19th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2008)*, pages 1096-1105.
- C4 "Fast Algorithms for Computing Tree LCS", Shay Mozes, Dekel Tsur, Oren Weimann and Michal Ziv-Ukelson. In *Proceedings of the 19th Annual symposium on Combinatorial Pattern Matching (CPM 2008)*, pages 230-243.
- C5 "Shortest Paths in Directed Planar Graphs with Negative Lengths: a Linear-Space $O(n \log^2 n)$ -Time Algorithm", Philip Klein, Shay Mozes and Oren Weimann. In *Proceedings of the 20th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2009)*, pages 236-245. 11 citations.

- C6 "Efficient Algorithms for Analyzing Segmental Duplications, Deletions, and Inversions in Genomes", Crystal Kahn, Shay Mozes and Ben Raphael. In *Proceedings of the 9th International Workshop (WABI 2009)*, pages 169-180.
- C7 "Shortest Paths in Planar Graphs with Real Lengths in $O(n \log^2 n / \log \log n)$ Time", Shay Mozes and Christian Wulff-Nilsen. In *Proceedings of the 18th Annual European Symposium on Algorithms (ESA 2010)*, pages 206-217. Recipient of the **ESA 2010 best student paper award**. 47 citations.

C8

- C9 "The Train Delivery Problem Vehicle Routing Meets Bin Packing", Aparna Das, Claire Mathieu and Shay Mozes. In *Proceedings of the 8th Workshop on Approximation and Online Algorithms (WAOA 2010)*, pages 94-105.
- C10 "Multiple-Source Single-Sink Maximum Flow in Directed Planar Graphs in $O(\text{diameter} \cdot n \log n)$ Time", Philip Klein and Shay Mozes. In *Proceedings of the 12th Algorithms and Data Structures Symposium (WADS 2011)*, pages 571-582.
- C11 "Multiple-Source Multiple-Sink Maximum Flow in Directed Planar Graphs in Near-Linear Time", Glencora Borradaile, Philip N. Klein, Shay Mozes, Yahav Nussbaum and Christian Wulff-Nilsen. In *Proceedings of the 52nd Annual Symposium on Foundations of Computer Science (FOCS 2011)*, pages 170-179. 50 citations.
- C12 "Exact Distance Oracles for Planar Graphs", Shay Mozes and Christian Sommer. In *Proceedings* of the 23rd Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2012), pages 209-222. 43 citations.
- C13 "Submatrix Maximum Queries in Monge Matrices and Monge Partial Matrices, and Their Applications", Haim Kaplan, Shay Mozes, Yahav Nussbaum and Micha Sharir. In *proceedings* of the 23rd Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2012), pages 338-355. 31 citations.
- C14 "Short and Simple Cycle Separators in Planar Graphs", Eli Fox-Epstein, Shay Mozes, Phitchaya Mangpo Phothilimthana and Christian Sommer. In *Proceedings of the 15th Workshop on Algorithm Engineering and Experiments (ALENEX 2013)*, pages 26-40.
- C15 "Structured Recursive Separator Decompositions for Planar Graphs in Linear Time", Philip Klein, Shay Mozes and Christian Sommer. In *proceedings of the 45th ACM Symposium on Theory of Computing (STOC 2013)*, pages 505-514. 33 citations.
- C16 "Improved Submatrix Maximum Queries in Monge Matrices", Paweł Gawrychowski, Shay Mozes and Oren Weimann. In *Proceedings of the 41st International Colloquium on Automata, Languages, and Programming (ICALP 2014)*, pages 525-537.
- C17 "A Polynomial-time Bicriteria Approximation Scheme for Planar Bisection", Kyle Fox, Philip Klein and Shay Mozes. In *proceedings of the 47th ACM Symposium on Theory of Computing (STOC 2015)*, pages 841-850.
- C18 "Submatrix Maximum Queries in Monge Matrices are Equivalent to Predecessor Search", Paweł Gawrychowski, Shay Mozes and Oren Weimann. In *Proceedings of the 42st International Colloquium on Automata, Languages, and Programming (ICALP 2015)*, pages 580-592. 5 citations.

- C19 "Efficient Vertex-Label Distance Oracles for Planar Graphs", Shay Mozes and Eyal E. Skop. In proceedings of the 13th International Workshop on Approximation and Online Algorithms (WAOA 2015), pages 97-109.
- C20 "The Nearest Colored Node in a Tree", Paweł Gawrychowski, Gad M. Landau, Shay Mozes and Oren Weimann, *In proceedings of the 27th Annual Symposium on Combinatorial Pattern Matching*, (CPM 2016), pages 25:1–25:12.
- C21 "Dispersion on Trees", Paweł Gawrychowski, Nadav Krasnopolsky, Shay Mozes and Oren Weimann, *In Proceedings of the 25th Annual European Symposium on Algorithms (ESA 2017)*, pages 40:1-40:13.
- C22 "Efficient Dynamic Vertex-Label Distance Oracles for Planar Graphs", Itay Laish and Shay Mozes, In proceedings of the 15th International Workshop on Approximation and Online Algorithms (WAOA 2017).
- C23 "Minimum Cut of Directed Planar Graphs in $O(n \log \log n)$ Time", Shay Mozes, Kyril Nikolaev, Yahav Nussbaum and Oren Weimann, *In Proceedings of the 29th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2018)*.
- C24 "Near-Optimal Compression for the Planar Graph Metric", Amir Abboud, Paweł Gawrychowski, Shay Mozes and Oren Weimann, *In Proceedings of the 29th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2018)*.
- C25 "Tree Edit Distance Cannot be Computed in Strongly Subcubic Time (unless APSP can)", Karl Bringmann, Paweł Gawrychowski, Shay Mozes and Oren Weimann, *In Proceedings of the 29th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2018)*.
- C26 "Voronoi Diagrams on Planar Graphs, and Computing the Diameter in Deterministic $\tilde{O}(n^{5/3})$ time". Haim Kaplan, Paweł Gawrychowski, Shay Mozes, Micha Sharir and Oren Weimann, In Proceedings of the 29th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2018).
- C27 "Better Tradeoffs for Exact Distance Oracles in Planar Graphs", Paweł Gawrychowski, Shay Mozes, Oren Weimann and Christian Wulff-Nilsen, *In Proceedings of the 29th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2018)*.
- C28 "Compressed Range Minimum Queries", Seungbum Jo, Shay Mozes and Oren Weimann, In proceedings of the 25th International Symposium on String Processing and Information Retrieval (SPIRE 2018), pages 206-217.
- C29 "Near-Optimal Distance Emulator for Planar Graphs", Hsien-Chih Chang, Paweł Gawrychowski, Shay Mozes and Oren Weimann, *In Proceedings of the 26th Annual European Symposium on Algorithms*, (ESA 2018), pages 16:1-16:17.
- C30 "Exact Distance Oracles for Planar Graphs with Failing Vertices", Panagiotis Charalampopoulos, Shay Mozes and Benjamin Tebeka, *In Proceedings of the Thirtieth Annual ACM-SIAM Symposium on Discrete Algorithms, (SODA 2019)*, pages 2110-2123.
- C31 "Almost Optimal Distance Oracles for Planar Graphs", Panagiotis Charalampopoulos, Paweł Gawrychowski, Shay Mozes and Oren Weimann, *In Proceedings of the 51st Annual ACM SIGACT Symposium on Theory of Computing, (STOC 2019)*, pages 138-151.
- C32 "Dynamic String Alignment", Panagiotis Charalampopoulos, Tomasz Kociumaka and Shay Mozes, In Proceedings of the 31st Annual Symposium on Combinatorial Pattern Matching, (CPM 2020), pages 9:1-9:13.

- C33 "Minimum Cut in $O(m \log^2 n)$ Time", Paweł Gawrychowski, Shay Mozes and Oren Weimann, In Proceedings of the 47th International Colloquium on Automata, Languages, and Programming (ICALP 2020) track A, pages 57:1-57:15. Recipient of the ICALP 2020 best paper award.
- C34 "A Note on a Recent Algorithm for Minimum Cut", Paweł Gawrychowski, Shay Mozes, Oren Weimann, *In proceedings of SIAM Symposium on Simplicity in Algorithms (SOSA21)*, to appear.
- C35 "Planar Negative *k*-Cycle", Paweł Gawrychowski, Shay Mozes, Oren Weimann, *In Proceedings* of the 32nd Annual ACM-SIAM Symposium on Discrete Algorithms, (SODA 2019), to appear.

BOOK CHAPTERS

B1 "Recursive Separator Decompositions for Planar Graphs", Shay Mozes. *Encyclopedia of Algorithms*. Springer (2015).

BOOK DRAFTS

D1 "Optimization Algorithms for Planar Graphs", Philip N. Klein and Shay Mozes, book draft available at http://www.planarity.org

TALKS AND PRESENTATIONS GIVEN

Almost Optimal Distance Oracles for Planar Graphs Invited talk at ICERM workshop on Data Science in Low-Dimensional Spaces, Providence RI, May 2019

19th Haifa Workshop on Interdisciplinary Applications of Graphs, Combinatorics and Algorithms, and the Annual Israel Mathematics Union Meeting, June 2019

Tel-Aviv University CS Algorithms seminar, November 2019

Voronoi Diagrams on Planar Graphs, and Computing the Diameter in Deterministic $\tilde{O}(n^{5/3})$ time SODA, January 2018

Near-Optimal Compression for the Planar Graph Metric

SODA, January 2018

Ben Gurion University CS theory seminar, April 2018

Bar-Ilan CS colloquium, April 2018

Voronoi diagrams, diameter and distance oracles for planar graphs

Computational Geometry seminar, Tel-Aviv University, June 2017

Minimum Cut of Directed Planar Graphs in $O(n \log \log n)$ Time Schloss Dagstuhl, June 2016

Structured Recursive Separator Decompositions for Planar Graphs in Linear Time STOC, June 2013

Submatrix Maximum Queries in Monge Matrices and Monge Partial Matrices, and Their Applications SODA, January 2012

Multiple-Source Multiple-Sink Maximum Flow in Directed Planar Graphs in Near-Linear Time Schloss Dagstuhl, October 2013

Massachusetts Institue of Technology, November 2012

FOCS, October 2011

Dartmouth, October 2011

Haifa University, April 2011

Ben-Gurion University, February 2011

Exploiting Graph Structure - Beauty and Efficiency in Planar Graphs

Purdue University, April 2012

Ben-Gurion University, January 2012

Haifa University, January 2012

Interdisciplinary Center Hertzliya, January 2012

Multiple-Source Single-Sink Maximum Flow in Directed Planar Graphs in $O(\text{diameter} \cdot n \log n)$ -Time WADS, August 2011.

Shortest Paths in Directed Planar Graphs with Negative Lengths: a Linear-Space $O(n \log^2 n)$ -Time Algorithm SODA, January 2009.

Finding an Optimal Tree Searching Strategy in Linear Time SODA, January 2008.

Speeding Up HMM Decoding and Training by Exploiting Sequence Repetitions CPM, July 2007

CONFERENCE AND WORKSHOP PARTICIPATION

CPM 2020. Copenhagen, Denmark. June 2020. (held online)

ICERM workshop: *Data Science in Low-dimensional Spaces*. Brown University, RI, USA, May 13- May 17, 2019.

SODA 2018. New Orleans, LA, USA, January 2018.

ALGO/ESA/WAOA 2017. Vienna, Austria, September 2017.

SODA 2017. Barcelona, Spain, January 2017.

Dagstuhl seminar 16221 Algorithms for Optimization Problems in Planar Graphs. Schloss Dagstuhl, Germany, May 29 – June 3, 2016.

ALGO/WAOA 2015. Patras, Greece, September 2015.

STOC 2015. Portland, OR, USA, June 2015.

ICREM Research Cluster: *Towards Efficient Algorithms Exploiting Graph Structure*. Brown University, RI, USA, April 24-May 2, 2014.

Dagstuhl seminar 13421 *Algorithms for Optimization Problems in Planar Graphs*. Schloss Dagstuhl, Germany, 13–18 October 2013.

STOC 2013. Palo Alto, CA, USA, June 2013.

SODA 2012. Kyoto, Japan, January 2012.

FOCS 2011. Palm Springs, CA, USA, October 2011.

WADS 2011. Polytechnic Institute of New York University, Brooklyn, NY, USA, August 2011.

Workshop on *Approximation Algorithms: The Last Decade and the Next*. Princeton University, Princeton, NJ, USA, June 2011.

STOC 2010. Cambridge, MA, USA, June 2010.

SODA 2009. New York, NY, USA, January 2009.

CPM 2008. University of Pisa, Pisa, Italy, June 2008

SODA 2008. San Francisco, CA, USA, January 2008.

FOCS 2007. Providence, RI, USA, October 2007.

CPM 2007. University of Western Ontario, London, Ontario, Canada, July 2007.