

Department of Mathematics
Brandeis University
415 South Street, Waltham, MA 02453

Email: wilmes@brandeis.edu
Phone: 781-736-3077
Web: <http://people.brandeis.edu/~wilmes/>

EDUCATION

- 2016 Ph.D. in Mathematics, University of Chicago
- 2012 M.S. in Mathematics, University of Chicago
- 2010 B.A. in Mathematics, Reed College

ACADEMIC APPOINTMENTS

- 2018– Assistant Professor of Mathematics
Brandeis University
- 2017–2018 Research Scientist II, Algorithms and Randomness Center
Georgia Institute of Technology
- 2016–2017 Postdoctoral Scholar, Algorithms and Randomness Center
Georgia Institute of Technology

GRANTS AND AWARDS

- 2018 Outstanding Post-Doctoral Research Award, College of Computing, Georgia Tech
- 2010–2015 NSF Graduate Research Fellowship
- 2010–2012 McCormick Fellowship, University of Chicago
- 2008–2010 Barry M. Goldwater Scholarship

PUBLICATIONS

1. Daniel Štefankovič, Eric Vigoda, and John Wilmes. On counting perfect matchings in general graphs. In *Proceedings of the 13th Latin American Symposium on Theoretical Informatics (LATIN)*, pages 873–885, 2018
2. Le Song, Santosh Vempala, John Wilmes, and Bo Xie. On the complexity of learning neural networks. In *Advances in Neural Information Processing Systems (NIPS)*, pages 5514–5522, 2017
3. László Babai and John Wilmes. Asymptotic Delsarte cliques in distance-regular graphs. *Journal of Algebraic Combinatorics*, 43(4):771–782, 2016
4. Xiaorui Sun and John Wilmes. Faster canonical forms for primitive coherent configurations. In *Proceedings of the 47th ACM on Symposium on Theory of Computing (STOC)*, pages 693–702, 2015
5. Madhusudan Manjunath, Frank-Olaf Schreyer, and John Wilmes. Minimal free resolutions of the G -parking function ideal and the toppling ideal. *Transactions of the American Mathematical Society*, 367(4):2853–2874, 2015
6. László Babai, Xi Chen, Xiaorui Sun, Shang-Hua Teng, and John Wilmes. Faster canonical forms for strongly regular graphs. In *Proceedings of the 54th IEEE Symposium on Foundations of Computer Science (FOCS)*, pages 157–166, 2013

7. Laszlo Babai and John Wilmes. Quasipolynomial-time canonical form for Steiner designs. In *Proceedings of the 45th ACM Symposium on Theory of Computing (STOC)*, pages 261–270, 2013
8. David Perkinson, Jacob Perlman, and John Wilmes. Primer for the algebraic geometry of sandpiles. *Tropical and non-Archimedean geometry*, 605:211–256, 2013

TALKS

Selected Invited Talks

- 2019 Combinatorics Seminar, Dartmouth College, Hanover, NH
- 2018 WL2018: Symmetry vs. Regularity, Pilsen, Czech Republic
- 2017 Computational Challenges in Machine Learning, Simons Institute for the Theory of Computing, Berkeley, CA
- 2015 Max Planck Institute for Informatics, Saarbrücken, Germany
- 2015 China Theory Week, Shanghai Jiao Tong University, Shanghai, China
- 2015 Theory Seminar, Northwestern University, Evanston, IL
- 2014 Theory of Computing and Probability Seminars, Cornell University, Ithaca, NY
- 2014 Modern Trends in Algebraic Graph Theory, Villanova University, Villanova, PA
- 2013 AMS Special Session on Topological Combinatorics, Joint Meetings of Mathematics, San Diego, CA

Selected Contributed Talks

- 2017 Spotlight Presentation, Neural Information Processing Systems, Long Beach, CA
- 2015 Dagstuhl Seminar on the Graph Isomorphism Problem, Wadern, Germany

TEACHING

Brandeis University

- 2019 Convex Optimization
- 2018 Applied Linear Algebra

University of Chicago

- 2015–2016 Honors Calculus I–III, inquiry-based learning, co-instructor
- 2013 Calculus II
- 2012–2013 Elementary Functions and Calculus I–III

ADVISING AND MENTORING

Ph.D. Students

- current Will Burstein (computer science, co-advised with Pengyu Hong)
- current Abhishek Gupta
- current Lu Wei (co-advised with Pengyu Hong)

Ph.D. Committees

- 2019 Joshua Eike, Mathematics, Brandeis University

PROFESSIONAL SERVICE

Journals refereed

Transactions on Algorithms, Electronic Journal of Combinatorics, Journal of Algebraic Combinatorics, Theory of Computing Systems, Graphs and Combinatorics

Conferences refereed

STOC 2019, NeurIPS 2019, ICML 2019, COLT 2019, STOC 2018, STOC 2017, STOC 2015, STACS 2015

INSTITUTIONAL SERVICE

- 2019 Authored revision of Applied Mathematics major
- 2018 Member of undergraduate curriculum committee (mathematics)

PROFESSIONAL MEMBERSHIPS

AMS, ACM, and ACM SIGACT