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## Education and employment history

- The University of Rochester, Rochester, NY, U.S.A.* Summer 2005 –  
Assistant professor in the Department of Computer Science.
- The University of Chicago, Chicago, IL, U.S.A.* Autumn 1998 – Summer 2005  
Ph.D. in Computer Science, awarded 06/2005,  
advisor: László Babai, thesis: *Algorithms for curves on surfaces.*
- Master's degree in Computer Science, awarded 12/2000,  
advisor: László Babai, thesis: *Fourier transforms in computer science.*
- Comenius University, Bratislava, Slovakia* Autumn 1993 – Summer 1998  
Magister degree in Computer Science, awarded 06/1998,  
advisor: Peter Ružička, thesis: *Multidimensional Interval Routing Schemes.*
- ## Journal publications
- J25. Qi Ge and Daniel Štefankovič. *The complexity of counting eulerian tours in 4-regular graphs.* Algorithmica, accepted, to appear. (Conference version: C24.)
- J24. Daniel Štefankovič, Eric Vigoda. *Fast convergence of MCMC algorithms for phylogenetic reconstruction with homogeneous data on closely related species.* SIAM Journal on Discrete Mathematics (SIDMA), accepted, to appear.
- J23. Ivona Bezáková, Alistair Sinclair, Daniel Štefankovič, and Eric Vigoda. *Negative examples for sequential importance sampling of binary contingency tables.* Algorithmica, accepted, to appear. (Conference version: C12.)
- J22. Michael J. Pelsmajer, Marcus Schaefer, Daniel Štefankovič. *Crossing numbers of graphs with rotation systems.* Algorithmica 60(3): 679–702, 2011. (Conference version: C17.)
- J21. Marcus Schaefer, Eric Sedgwick, and Daniel Štefankovič. *Spiraling and folding: the word view.* Algorithmica 60(3): 609–626, 2011. (Conference version: C14.)
- J20. Michael Pelsmajer, Marcus Schaefer, Daniel Štefankovič. *Removing independently even crossings.* SIAM Journal on Discrete Mathematics (SIDMA) 24(2):379–393, 2010. (Conference version: C23.)
- J19. Daniel Štefankovič, Santosh Vempala, Eric Vigoda. *Adaptive simulated annealing: A near-optimal connection between sampling and counting.* Journal of the Association for Computing Machinery (JACM) 56(3), 2009, (DOI 10.1145/15116512.15116520). (Conference version: C19.)
- J18. Michael Pelsmajer, Marcus Schaefer, Daniel Štefankovič. *Removing even crossings on surfaces.* European Journal of Combinatorics, 30:1704-1717, 2009. (Conference version: C15.)

- J17. Ivona Bezáková, Daniel Štefankovič, Vijay Vazirani, Eric Vigoda. *Accelerating simulated annealing for the permanent and combinatorial counting problems*. SIAM Journal on Computing (SICOMP) 37(5):1429–1454, 2008. (Conference version: C11.)
- J16. Michael Pelsmajer, Marcus Schaefer, Daniel Štefankovič. *Odd crossing number and crossing number are not the same*. Discrete and Computational Geometry (DCG) 39(1-3):442–454, 2008. (Conference version: C10.)
- J15. Michael Pelsmajer, Marcus Schaefer, Daniel Štefankovič. *Removing even crossings*. Journal of Combinatorial Theory B (JCTB) 97(4):489–500, 2007. (Conference version: C9.)
- J14. Manu Chhabra, Robert Jacobs, Daniel Štefankovič. *Behavioral shaping for geometric concepts*. Journal of Machine Learning Research (JMLR) 8:1835–1865, 2007.
- J13. Peter Hui, Michael J. Pelsmajer, Marcus Schaefer, Daniel Štefankovič. *Train tracks and confluent drawings*. Algorithmica 47(4):465–479, 2007. (Conference version: C8.)
- J12. Daniel Štefankovič, Eric Vigoda. *Phylogeny of mixture models: robustness of maximum likelihood and non-identifiable distributions*. Journal of Computational Biology 14(2):156–189, 2007.
- J11. Daniel Štefankovič, Eric Vigoda. *Pitfalls of heterogeneous processes for phylogenetic reconstruction*. Systematic Biology 56(1):113–124, 2007.
- J10. Bruno Codenotti, Daniel Štefankovič. *On the computational complexity of Nash equilibria for  $(0,1)$ -bimatrix games*. Information Processing Letters (IPL) 94(3):145–150, 2005.
- J9. Marcus Schaefer, Daniel Štefankovič. *Solvability of graph inequalities*. SIAM Journal on Discrete Mathematics (SIDMA) 19:728–743, 2005.
- J8. László Babai, Amir Shpilka, Daniel Štefankovič. *Locally testable cyclic codes*. IEEE Transactions on Information Theory 51(8):2849–2858, 2005. (Conference version: C6.)
- J7. Marcus Schaefer, Daniel Štefankovič. *Decidability of string graphs*. Journal of Computer and System Sciences (JCSS) 68(2):319–334, 2004. (Conference version: C3.)
- J6. Marcus Schaefer, Eric Sedgwick, Daniel Štefankovič. *Recognizing string graphs in NP*. Journal of Computer and System Sciences (JCSS) 67(2):365–380, 2003. (Conference version: C5.)
- J5. Rastislav Kráľovič, Branislav Rován, Peter Ružička, Daniel Štefankovič. *Efficient deadlock-free multidimensional interval routing in hypercube-like networks*. Computing and Informatics 21(3):265–287, 2002.
- J4. László Babai, Péter Frankl, Samuel Kutin, Daniel Štefankovič. *Set systems with restricted intersections modulo prime powers*. Journal of Combinatorial Theory A (JCTA) 95(1):39–73, 2001.
- J3. Daniel Štefankovič. *Acyclic orientations do not lead to optimal deadlock free packet routing algorithms*. Information Processing Letters (IPL) 73(5-6):221–225, 2000.
- J2. Peter Ružička, Daniel Štefankovič. *On the complexity of multidimensional routing schemes*. Theoretical Computer Science (TCS) 254(2):255–280, 2000.
- J1. Rastislav Kráľovič, Peter Ružička, Daniel Štefankovič. *The complexity of shortest path and dilation bounded interval routing*. Theoretical Computer Science (TCS) 234(1-2):85–107, 2000. (Conference version: C1.)

## Publications in selective conferences

- C30. Radoslav Fulek, Michael J. Pelsmajer, Marcus Schaefer, and Daniel Štefankovič. *Adjacent crossings do matter*. 19th International Symposium on Graph Drawing (GD 2011), accepted, to appear, 2011.
- C29. Parikshit Gopalan, Adam Klivans, Raghu Meka, Daniel Štefankovič, Santosh Vempala, and Eric Vigoda. *An FPTAS for #Knapsack and related counting problems*. 52nd Annual IEEE Symposium on Foundations of Computer Science (FOCS 2011), accepted, to appear, 2011.
- C28. Radoslav Fulek, Michael J. Pelsmajer, Marcus Schaefer, and Daniel Štefankovič. *Hanani-Tutte and monotone drawings*. 37th International Workshop on Graph-Theoretic Concepts in Computer Science (WG 2011), accepted, to appear, 2011.

- C27. Andreas Galanis, Qi Ge, Daniel Štefankovič, Eric Vigoda, and Linji Yang. *Improved inapproximability results for counting independent sets in the hard-core model*. 15th International Workshop on Randomization and Computation (RANDOM 2011), accepted, to appear, 2011.
- C26. Ricardo Restrepo, Daniel Štefankovič, Juan Carlos Vera, Eric Vigoda, and Linji Yang. *Phase transition for Glauber dynamics for independent sets on regular trees*. 22nd Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2011), pp. 945–956, 2011.
- C25. Qi Ge and Daniel Štefankovič. *A graph polynomial for independent sets of bipartite graphs*. 30th International Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2010), pp. 240–250, 2010.
- C24. Qi Ge and Daniel Štefankovič. *The complexity of counting eulerian tours in 4-regular graphs*. 9th Latin American Theoretical Informatics Symposium (LATIN 2010), pp. 638–649, 2010. (Journal version: J25.)
- C23. Michael J. Pelsmajer, Marcus Schaefer, and Daniel Štefankovič. *Removing independently even crossings*. 17th International Symposium on Graph Drawing (GD 2009), pp. 201–206, 2009. (Journal version: J20.)
- C22. Satyaki Mahalanabis and Daniel Štefankovič. *Approximating  $L_1$ -distances between mixture distributions using random projections*. 6th Workshop on Analytic Algorithmics and Combinatorics (ANALCO 2009), pp. 75–84, 2009.
- C21. Satyaki Mahalanabis and Daniel Štefankovič. *Density estimation in linear time*. 21st Annual Conference on Learning Theory (COLT 2008), pp. 503–512, 2008.
- C20. Marcus Schaefer, Eric Sedgwick, and Daniel Štefankovič. *Computing Dehn twists and geometric intersection numbers in polynomial time*. 20th Canadian Conference in Computational Geometry (CCCG 2008), pp. 111–114, 2008.
- C19. Daniel Štefankovič, Santosh Vempala, and Eric Vigoda. *Adaptive simulated annealing: a near-optimal connection between sampling and counting*. 48th Annual IEEE Symposium on Foundations of Computer Science (FOCS 2007), pp. 183–193, 2007. (Journal version: J19.)
- C18. Marcus Schaefer, Eric Sedgwick, and Daniel Štefankovič. *Spiralling and folding: the topological view*. 19th Canadian Conference on Computational Geometry (CCCG 2007), pp. 73–76, 2007.
- C17. Michael J. Pelsmajer, Marcus Schaefer, and Daniel Štefankovič. *Crossing number of graphs with rotation systems*. 15th International Symposium on Graph Drawing (GD 2007), Lecture Notes in Computer Science 4875, pp. 3–12, 2007. (Journal version: J22.)
- C16. Michael Pelsmajer, Marcus Schaefer, and Daniel Štefankovič. *Crossing numbers and parameterized complexity*. 15th International Symposium on Graph Drawing (GD 2007), Lecture Notes in Computer Science 4875, pp. 31–36, 2007.
- C15. Michael Pelsmajer, Marcus Schaefer, and Daniel Štefankovič. *Removing even crossings on surfaces*. European Conference on Combinatorics, Graph Theory and Applications (EUROCOMB 2007), Electronic Notes in Discrete Mathematics 29:85–90, 2007. (Journal version: J18.)
- C14. Marcus Schaefer, Eric Sedgwick, and Daniel Štefankovič. *Folding and spiralling: the word view*. European Conference on Combinatorics, Graph Theory and Applications (EUROCOMB 2007), Electronic Notes in Discrete Mathematics 29:101–105, 2007. (Journal version: J21.)
- C13. Daniel Gildea and Daniel Štefankovič. *Worst-case synchronous grammar rules*. Human Language Technologies 2007: The Conference of the North American Chapter of the Association for Computational Linguistics (NAACL-HLT 2007); Proceedings of the Main Conference, pp. 147–154, 2007.
- C12. Ivona Bezáková, Alistair Sinclair, Daniel Štefankovič, and Eric Vigoda. *Negative examples for sequential importance sampling of binary contingency tables*. 14th Annual European Symposium on Algorithms (ESA 2006), pp. 136–147, 2006. (Journal version: J23.)
- C11. Ivona Bezáková, Daniel Štefankovič, Vijay Vazirani, and Eric Vigoda. *Approximating the permanent in  $O^*(n^7)$  time*. 17th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2006), pp. 900–907, 2006. (Journal version: J17.)

- C10. Michael Pelsmajer, Marcus Schaefer, and Daniel Štefankovič. *Odd crossing number is not crossing number*. 13th International Symposium on Graph Drawing (GD 2005), Lecture Notes in Computer Science 3843, pp. 386–396, 2005. (Journal version: J16.)
- C9. Michael Pelsmajer, Marcus Schaefer, and Daniel Štefankovič. *Removing even crossings*. European Conference on Combinatorics, Graph Theory and Applications (EUROCOMB 2005), Discrete Mathematics and Theoretical Computer Science Proceedings, pp. 105–110, 2005. (Journal version: J15.)
- C8. Peter Hui, Marcus Schaefer, and Daniel Štefankovič. *Train tracks and confluent drawings*. 12th International Symposium on Graph Drawing (GD 2004), Lecture Notes in Computer Science 3383, pp. 318–328, 2004. (Journal version: J13.)
- C7. László Babai and Daniel Štefankovič. *Simultaneous Diophantine approximation with excluded primes*. 15th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2004), pp. 1123–1129, 2004.
- C6. László Babai, Amir Shpilka, and Daniel Štefankovič. *Locally testable cyclic codes*. 44th Annual IEEE Symposium on Foundations of Computer Science (FOCS 2003), pp. 116–125, 2003. (Journal version: J8.)
- C5. Marcus Schaefer, Eric Sedgwick, and Daniel Štefankovič. *Recognizing string graphs in NP*. 34th Annual ACM Symposium on Theory of Computing (STOC 2002), pp. 1–6, 2002. (Journal version: J6.)
- C4. Marcus Schaefer, Eric Sedgwick, and Daniel Štefankovič. *Algorithms for normal curves and surfaces*. Computing and Combinatorics: 8th Annual International Conference (COCOON 2002), pp. 370–380, 2002.
- C3. Marcus Schaefer and Daniel Štefankovič. *Decidability of string graphs*. 33rd Annual ACM Symposium on Theory of Computing (STOC 2001), pp. 241–246, 2001. (Journal version: J7.)
- C2. Rastislav Kráľovič, Branislav Rován, Peter Ružička, and Daniel Štefankovič. *Efficient deadlock-free multi-dimensional interval routing in interconnection networks*. Distributed Computing, 12th International Symposium (DISC 1998), Lecture Notes in Computer Science 1499, pp. 273–287, 1998.
- C1. Rastislav Kráľovič, Peter Ružička, and Daniel Štefankovič. *The complexity of shortest path and dilation bounded interval routing*. 3rd International Euro-Par Conference on Parallel Processing (EURO-PAR 1997), Lecture Notes in Computer Science 1300, pp. 258–265, 1997. (Journal version: J1.)

## Talks

*A Deterministic Polynomial-time Approximation Scheme for Counting Knapsack Solutions.*

Georgia Tech, ARC Colloquium, February 2011 (invited).

*Graph polynomial for independent sets in bipartite graphs.*

Bernoulli Conference on Discrete and Computational Geometry, August 2010 (invited).

*Variants of crossing numbers (survey).*

Workshop on Theory and Algorithmic Aspects of Graph Crossing Number (TAAGCN, MFCS 2010 satellite), August 2010 (invited).

*The complexity of counting eulerian tours in 4-regular graphs.*

Latin American Theoretical Informatics Symposium, April 2010.

*Counting and sampling using Markov chains (general audience talk).*

RIT colloquium, October 2009 (invited).

*Removing independently even crossings.*

Graph drawing, September 2009.

*Algorithmic problems for curves and surfaces.*

Algorithmic and Combinatorial Geometry, July 2009 (invited).

*Density estimation in linear time.*

The Eastern Great Lakes Theory Workshop, September 2008 (invited).

Georgia Tech - Machine Learning Seminar, March 2008 (invited).

*Adaptive annealing: a near-optimal connection between sampling and counting.*

Tokyo Institute of Technology - MCMC Fall School, September 2008 (invited).

FOCS, November 2007.

DIMACS, Georgia Tech, March 2007 (invited).

NYU/CUNY, March 2007 (invited).

University of Toronto, Theory Seminar, December 2006 (invited).

University of Chicago, Theory Seminar, December 2006 (invited).

University of Rochester, Colloquium, December 2006.

*Odd crossing number is not crossing number.*

RIT, Math Department Colloquium, October 2005 (invited).

Graph Drawing, September 2005.

Discrete and Computational Geometry—Twenty Years Later, June 2006 (invited).

*Phylogeny of mixture models: maximum likelihood, ambiguity, and linear tests.*

IIT, December 2005 (invited).

*Simultaneous diophantine approximation with excluded primes.*

SODA, January 2004.

MIT, Theory of Computation Seminar, November 2003 (invited).

*Locally testable cyclic codes.*

DePaul, Theory Seminar, September 2003 (invited).

FOCS, October 2003.

*Recognizing string graphs in NP.*

DIMACS Workshop on Geometric Graph Theory, October 2002 (invited).

STOC, May 2002.

University of Wisconsin - Madison, Theory Seminar, February 2002 (invited).

Midwest Theory Day, December 2001.

DePaul, Theory Seminar, November 2001 (invited).

*Decidability of string graphs.*

STOC, July 2001.

DePaul, Theory Seminar, February 2001 (invited).

Midwest Theory Day, December 2000.

*The complexity of shortest path and dilation bounded interval routing.*

Europar, August 1997.

## Grants

RI: Large: Collaborative Research: Random Processes and Randomized Algorithms, NSF CCF-0910415, PI, 3 years (2009–2012), \$300,000.

## Service

- Program committee member: 38th International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM 2012), 21st Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2010), 35th International Symposium on Mathematical Foundations of Computer Science (MFCS 2010), Computing and Combinatorics: 16th Annual International Conference (COCOON 2010), Computing and Combinatorics: 15th Annual International Conference (COCOON 2009).
- Referee for the following journals: Computational Complexity, Theory of Computing Systems, Discrete & Computational Geometry, Journal of Graph Theory, Journal of Combinatorial Theory (Series B), SIAM Journal on Computing.
- Referee for the following conferences: STOC'11, SoCG'10, NIPS'09, NIPS'08, MFCS'08, STOC'08, ESA'07, ICALP'07, STACS'07, HiPC'06, STOC'05, WG'04, CCC'03, WG'03, CCC'02, MFCS'01, WG'99.
- Panel member (NSF CCF'2011).
- Technical support for STOC'04 PC.

## Teaching Experience

*Mathematical foundations of artificial intelligence (CSC 246/446)* Spring 2009, Spring 2010  
Graduate AI course, University of Rochester.

*Advanced algorithms (CSC 284/484)* Spring 2007, Spring 2008, Spring 2011  
Graduate algorithms course, University of Rochester.

*Markov chains (CSC 574)* Spring 2006  
Graduate seminar course on (theoretical) Markov chain Monte Carlo, University of Rochester.

*Algorithms (CSC 282)* Fall 2006, Fall 2007, Fall 2008, Fall 2009, Fall 2010  
Undergraduate algorithms course, University of Rochester.

TA for *Research experiences for undergraduates* Summer 2003, Summer 2004  
REU courses Discrete Mathematics and Linear Algebra, University of Chicago.

*Introduction to WWW-2 (CS102)* Summer 2001  
Introductory JAVA course, University of Chicago.

TA for *Algorithms (CS270)* Winter 2000, Winter 2001  
Graduate/undergraduate algorithms course, University of Chicago.

TA for *Discrete mathematics (CS174)* Autumn 1998, Autumn 1999  
Undergraduate discrete mathematics course, University of Chicago.