

Siamak Tazari

Curriculum vitae

Date of birth:	Sep. 1, 1982	Place of birth:	Tehran
Citizenship:	German, Iranian	Marital status:	Single

Education

7/2010	Humboldt-Universität zu Berlin, Berlin, Germany Doctorate Degree in Computer Science, Supervisor: Prof. Martin Grohe Dissertation Title: <i>Algorithmic Graph Minor Theory: Approximation, Parameterized Complexity, and Practical Aspects</i>
10/2001 – 8/2006	Technische Universität Darmstadt, Darmstadt, Germany Mathematics with focus on Computer Science, Diplom
9/2004 – 4/2005	University of British Columbia, Vancouver, BC, Canada Visiting Graduate Student
3/2001 – 7/2001	“Studienkolleg” for international students, Darmstadt, Germany
9/1999 – 7/2000	Allameh Amini Pre-University Educational Center, Tehran, Iran Mathematics-Physics Diploma (12 years)
1993 – 1999	Guidance School and High School, Tehran, Iran
1988 – 1993	Elementary School (in German), Darmstadt, Germany

Research

since 1/2011	Computer Science and Artificial Intelligence Laboratory (CSAIL), Massachusetts Institute of Technology (MIT), Cambridge, MA, USA Postdoctoral fellow supervised by Professor Erik Demaine. Areas of work: graph structure theory, parameterized complexity, algorithmic game theory
4/2009 & 10/2010	Computing Laboratory, Oxford University, Oxford, UK Research period visiting Professor Stephan Kreutzer
9/2009 – 11/2010	Department of Computer Science, HU-Berlin, Berlin, Germany Research assistant (Wissenschaftlicher Mitarbeiter) in the “Logic in Computer Science” group supervised by Professor Martin Grohe. Areas of work: graph structure theory, parameterized complexity, finite model theory
9/2008 – 8/2009	Department of Computer Science, HU-Berlin, Berlin, Germany PhD student (with scholarship) in the “Logic in Computer Science” group supervised by Professor Martin Grohe. Areas of work: see above
9/2006 – 8/2008	Department of Computer Science, TU-Darmstadt, Darmstadt, Germany Research assistant (Wissenschaftlicher Mitarbeiter) in the “Algorithmics” group supervised by Professor Matthias Müller-Hannemann in the DFG Research Project “Approximation Algorithms for the Steiner Tree and Related Network Design Problems with Industry Applications”. Areas of work: graph algorithms, optimization, C++ programming
7/2005 – 7/2006	Department of Computer Science, TU-Darmstadt, Darmstadt, Germany Research assistant in the “Algorithmics” group supervised by Professor Karsten Weihe. Areas of work: optimization, graph algorithms, integer linear programming, Java/C++ programming
9/2003 – 8/2004	Department of Mathematics, TU-Darmstadt, Darmstadt, Germany Research assistant in the “Discrete Optimization” group supervised by Professor Alexander Martin. Areas of work: (mixed) integer linear programming, C/C++ programming

- 9/2002 – 8/2003 Department of Computer Science, TU-Darmstadt, Darmstadt, Germany
Research assistant in the “Algorithmics” group supervised by Professor Karsten Weihe. Area of work: design and implementation of an optimizer for the “Fast Component Mounter” of Philips/Assembléon with Java
- 7/2001 – 7/2002 Department of Computer Science, TU-Darmstadt, Darmstadt, Germany
Research assistant in the “Discrete Geometric Modeling” group supervised by Professor Marc Alexa. Area of work: implementation of new algorithms for 3-D meshes and their visualization with OpenGL using C++

Teaching

- Winter 2009/10 Department of Computer Science, HU-Berlin, Berlin, Germany
Teaching assistant for the course “Theoretical Computer Science II”;
Organization of theory seminar “Metric Embeddings of Graphs”
- 2006 – 2008 Department of Computer Science, TU-Darmstadt, Darmstadt, Germany
Occasional substitute lecturer for the courses “Efficient Graph Algorithms”, “Algorithmic Modeling”, and “Foundations of Computing”;
Organization of algorithms project course “Wireless Multicasting”
- Winter 2005/06 Department of Mathematics, TU-Darmstadt, Darmstadt, Germany
Teaching assistant for the course “Introduction to Optimization”
- Fall 2004 University of British Columbia, Vancouver, BC, Canada
Teaching assistant for a first-year programming course in C
- Summer 2004 Department of Mathematics, TU-Darmstadt, Darmstadt, Germany
Teaching assistant for the course “Graphs & Algorithms”, including the design of exercise sheets and writing sample solutions
- Winter 2002/03 Department of Mathematics, TU-Darmstadt, Darmstadt, Germany
Teaching assistant for the course “Linear Algebra 1” (in English)
- Summer 2002 Department of Mathematics, TU-Darmstadt, Darmstadt, Germany
Teaching assistant for the course “Graphs & Algorithms”
- 1999 – 2000 Olympiad School, Tehran, Iran
Giving lectures about graph theory, combinatorics and algorithms to students interested in taking part in the “National Olympiad in Informatics”

Supervised Theses

- 7/2010 Diploma thesis of Lukas Moll, “Hypergraphinvarianten und -Algorithmen”, co-supervised with Marc Thurley and Professor Martin Grohe
- 7/2008 Diploma thesis of Zhen Hao, “A PTAS for Steiner Tree among Fat Regions in the Plane”, co-supervised with Professor Matthias Müller-Hannemann

Honors, Awards, Fellowships

- 1/2011 – 12/2011 Postdoctoral fellowship of the “Deutscher Akademischer Austauschdienst” (DAAD, German Academic Exchange Service) for conducting research at MIT, Cambridge, MA, USA
- 10/2008 – 12/2010 Member of the “Berlin Mathematical School” and associated member of the graduate research training group “Methods for Discrete Structures”, Berlin
- 9/2008 – 3/2010 PhD fellowship of the “Studienstiftung des Deutschen Volkes” (German National Merit Foundation)
- 11/2004 Placed 3rd in the Pacific Northwest Regional Contest of the ACM International Collegiate Programming Contest
- 5/2004 Received overseas study award from the Studienstiftung
- 11/2003 – 9/2006 Fellowship of the “Studienstiftung des Deutschen Volkes”

- 11/1999 – 04/2000 Tied for first place in the Fall 1999 and US Open 2000 internet competition of the “USA Computing Olympiad” (USACO)
- 9/1999 Gold medalist of the “National Olympiad in Informatics” in Iran

Research Interests

Graph Theory esp. Graph Minor Theory; Parameterized Complexity Theory; Planar Graphs and Graphs on Surfaces; Steiner Trees; Discrete and Combinatorial Optimization; Design and Analysis of Algorithms esp. Approximation Algorithms; Algorithmic Game Theory; Algorithm Engineering

Academic Service

Refereed papers for Journal of the ACM, Journal on Computer and System Sciences, SIAM Journal on Discrete Mathematics, Algorithmica, and the conferences STOC, FOCS, SODA, ESA, MFCS, APPROX, and ISAAC

Selection of Given Talks

- 11/2010 Research Seminar, Goethe-Universität Frankfurt am Main, Germany
- 8/2010 MFCS 2010, Brno, Czech Republic
- 7/2010 LICS 2010, Edinburgh, Scotland, UK
- 6/2010 Seminar of the Graduate Research Training Group “Methods for Discrete Structures”, Berlin, Germany
- 2/2010 Algorithmic Model Theory Meeting 2010, Frankfurt, Germany
- 1/2010 SODA 2010, Austin, TX, USA
- 12/2009 Dagstuhl Seminar on “Parameterized complexity and approximation algorithms”, Schloss Dagstuhl, Germany
- 6/2009 Seminar of the Graduate Research Training Group “Methods for Discrete Structures”, Berlin, Germany
- 3/2009 STACS 2009, Freiburg, Germany
- 1/2009 ALLENEX 2009, New York, NY, USA
- 6/2008 WG 2008, Durham, England, UK
- 1/2008 Research Seminar, Albert-Ludwigs-Universität Freiburg, Germany
- 11/2007 Colloquium on Combinatorics 2007, Magdeburg, Germany
- 8/2007 WADS 2007, Halifax, Nova Scotia, Canada
- 5/2006 WEA 2006, Cala Galdana, Menorca, Spain
- 3/2003 Assembléon Netherlands B.V., Eindhoven, The Netherlands

Languages

Farsi (native), German (native), English (fluent), French (basic), Arabic (basic)

Academic References

Martin Grohe, Stephan Kreutzer, Erik D. Demaine, Philip N. Klein, Michael R. Fellows

Publications

Recent Online Publications

- [**Directed Nowhere Dense Classes of Graphs**](#)
with Stephan Kreutzer. Available at *CoRR arXiv:abs/1104.3808*, 2011.
- [**Computing Hypergraph Width Measures Exactly**](#)
with Lukas Moll and Marc Thurley. Available at *CoRR arXiv:abs/1106.4719*, 2011.

Conference Papers

- [**Lower Bounds for the Complexity of Monadic Second-Order Logic**](#)
with Stephan Kreutzer. *Proceedings of the 25th IEEE symposium on Logic in Computer Science (LICS'10)*, Edinburgh, Scotland, UK, pp. 189-198, 2010. ([long version](#))
- [**On Brambles, Grid-Like Minors, and Parameterized Intractability of Monadic Second-Order Logic**](#)
with Stephan Kreutzer. *Proceedings of the 21st ACM-SIAM Symposium on Discrete Algorithms (SODA'10)*, Austin, Texas, USA, pp. 354-364, 2010. ([long version](#))
- [**Faster Approximation Schemes and Parameterized Algorithms on H-Minor-Free and Odd-Minor-Free Graphs**](#)
Proceedings of the 35th international symposium on Mathematical Foundations of Computer Science (MFCS'10), Brno, Czech Republic, LNCS 6281, pp. 641-652, 2010. ([long version](#))
- [**Polynomial-Time Approximation Schemes for Subset-Connectivity Problems in Bounded-Genus Graphs**](#)
with Glencora Borradaile and Erik D. Demaine. *Proceedings of the 26th International Symposium on Theoretical Aspects of Computer Science (STACS'09)*, Freiburg, Germany, pp. 171-182, 2009. ([long version](#))
- [**Dealing with Large Hidden Constants: Engineering a Planar Steiner Tree PTAS**](#)
with Matthias Müller-Hannemann. *Proceedings of the 11th Workshop on Algorithm Engineering and Experiments (ALENEX'09)*, New York, USA, pp. 120-131, SIAM, 2009. ([journal version](#))
- [**A Faster Shortest-Paths Algorithm for Minor-Closed Graph Classes**](#)
with Matthias Müller-Hannemann. *Proceedings of the 34th Workshop on Graph Theoretic Concepts in Computer Science (WG'08)*, Durham, UK, LNCS 5344, pp. 360-371, Springer, 2008. ([journal version](#))
- [**A Near Linear Time Approximation Scheme for Steiner Tree among Obstacles in the Plane**](#)
with Matthias Müller-Hannemann. *Proceedings of the 10th Workshop on Algorithms and Data Structures (WADS'07)*, Halifax, Canada, LNCS 4619, pp. 151-162, 2007. ([journal version](#))
- [**Workload Balancing in Multi-Stage Production Processes**](#)
with Matthias Müller-Hannemann and Karsten Weihe. *Proceedings of the 5th Int. Workshop on Experimental Algorithms (WEA'06)*, Menorca, Spain, LNCS 4007, pp. 49-60, 2006. (see [Diploma thesis](#))

Journal Articles

- **Dealing with Large Hidden Constants: Engineering a Planar Steiner Tree PTAS**
with Matthias Müller-Hannemann. *ACM Journal on Experimental Algorithmics*, special issue on ALENEX'09, accepted for publication, 2011.
- **[A Near Linear Time Approximation Scheme for Steiner Tree among Obstacles in the Plane](#)**
with Matthias Müller-Hannemann. *Computational Geometry: Theory and Applications 43 (4)*, special issue on WADS'07, pp. 395-409, doi:10.1016/j.comgeo.2009.01.011, 2010.
- **[Shortest Paths in Linear Time on Minor-Closed Graph Classes, with an Application to Steiner Tree Approximation](#)**
with Matthias Müller-Hannemann. *Discrete Applied Mathematics 157*, pp. 673-684, doi:10.1016/j.dam.2008.08.002, 2009.

Academic Theses and Manuscripts

- **[Algorithmic Graph Minor Theory: Approximation, Parameterized Complexity, and Practical Aspects](#)**
Doctoral Dissertation, Humboldt-Universität zu Berlin, Berlin, Germany, July 2010.
- **[Bidimensionality Theory and Algorithmic Graph Minor Theory](#)**
with Mareike Massow, Jens Schmidt, and Daria Schymura. Lecture Notes of MohammadTaghi Hajiaghayi's Tutorial in the Fall School on Algorithmic Graph Structure Theory, Schloss Blankensee, Germany, 2007.
- **[Algorithmic Approaches for Two Fundamental Optimization Problems: Workload-Balancing and Planar Steiner Trees](#)**
Diploma Thesis, Technische Universität Darmstadt, Darmstadt, Germany, August 2006.
- **[Cross-Monotonic Cost-Sharing Schemes for Combinatorial Optimization Games: A Survey](#)**
Course Project, CPSC 532A Multiagent Systems, University of British Columbia, Vancouver, Canada, 2005.
- **[Applying, Improving and Analyzing Some Heuristics for Binary Codes in Combinatorial DNA Design](#)**
with Lyndon Hiew. Course Project, CPSC 545 Mini-Workshop Algorithms for Bioinformatics, University of British Columbia, Vancouver, Canada, 2005.
- **A Java Optimizer for the Fast Component Mounter (FCM 2)**
Technical Report, Technische Universität Darmstadt, Germany, May 2003.