Sarah R. Allen

Computer Science Department
Carnegie Mellon University
5000 Forbes Ave
Pittsburgh, PA 15213

Phone: (650) 504-7231
srallen@cs.cmu.edu
http://www.cs.cmu.edu/~srallen

U.S. Citizen

EDUCATION

Carnegie Mellon University, Pittsburgh, PA — Sept. 2013 - Present
⋄ Ph.D. student in Computer Science
⋄ Advised by Ryan O'Donnell

Carnegie Mellon University, Pittsburgh, PA — Sept. 2013 - Dec 2016
⋄ M.S. in Computer Science

Polytechnic Institute of New York University, Brooklyn, NY — Sept. 2011 - May 2013
⋄ M.S. in Computer Science
⋄ Advised by Lisa Hellerstein
⋄ Thesis title: Approximately Optimal Testing Strategies for Systems of Boolean Functions

Polytechnic Institute of New York University, Brooklyn, NY — Sept. 2009 - May 2013
⋄ B.S. in Computer Engineering, *Summa Cum Laude*
⋄ Mathematics Minor
⋄ Honors Program

AWARDS

National Science Foundation Graduate Research Fellowship — 2013 - 2016

PUBLICATIONS

Incremental Voronoi Diagrams (pdf)
By Sarah R. Allen, Luis Barba, John Iacono, and Stefan Langerman
SoCG 2016: 32nd International Symposium on Computational Geometry, 2016

How to refute a random CSP (pdf)
By Sarah R. Allen, Ryan O'Donnell, and David Witmer
FOCS 2015: 56th IEEE Symposium on Foundations of Computer Science, 2015

Conditioning and covariance on caterpillars (pdf)
By Sarah R. Allen and Ryan O'Donnell
ITW 2015: IEEE Information Theory Workshop, 2015

Evaluation of Monotone DNF Formulas (pdf)
By Sarah R. Allen, Lisa Hellerstein, Devorah Kletenik, and Tonguç Ünlüyurt
ISAIM 2014: International Symposium on Artificial Intelligence and Mathematics, 2014
Algorithmica: November 2015

Approximation algorithms for reducing classification cost in ensembles of classifiers (pdf)
By Sarah R. Allen and Lisa Hellerstein
DISCML 2013: NIPS Workshop on Discrete and Combinatorial Problems in Machine Learning, 2013

Sum of Squared Edges for MST of a Point Set in a Unit Square (pdf)
By Oswin Aichholzer, Sarah R. Allen, Greg Aloupis, Luis Barba, Prosenjit Bose, Jean-Lou De Carufel,

John Iacono, Stefan Langerman, Diane L. Souvaine, Perouz Taslakian, Mark Yagnatinsky
JCDCGG 2013: Japan Conference on Discrete and Computational Geometry and Graphs, 2013
FWCG 2012: 22nd annual Fall Workshop on Computational Geometry 2012

Packing Simple Identical Polygons is NP-Hard
By Sarah R. Allen and John Iacono
FWCG 2012: 22nd annual Fall Workshop on Computational Geometry 2012

POSTERS
    Approximation algorithms for reducing classification cost in ensembles of classifiers
By Sarah R. Allen and Lisa Hellerstein
Carnegie Mellon University Open House 2014

upPIR: Private Information Retrieval for The Update Framework
By Geremy Condra, Sarah R. Allen, and Justin Cappos
CATT Research Review and Cyber Security Awareness Week Reception, 2011

Creating a Recommendation Engine Filter Using the Mahalanobis Taguchi Strategy
By Sarah R. Allen, Rachel Jacobovits, Michel Lobenberg, and Lindsey Van Wagenen
Polytechnic Institute of NYU Summer Research Seminar 2011

EMPLOYMENT
Undergraduate Research Assistant, Tufts University   June - Sept. 2012
⬦ Worked under the supervision of Diane L. Souvaine and Andrew Winslow
⬦ Worked on problems related to tile self-assembly and computational geometry

Undergraduate Researcher, Polytechnic Institute of New York University   May - Aug. 2011
⬦ Worked under the supervision of Lindsey Van Wagenen
⬦ Worked on recommendations for the Netflix data set by applying the Mahalanobis Taguchi approach

TEACHING
Teaching Assistant, Carnegie Mellon University
⬦ CS 10-806: Foundations of Machine Learning and Data Science   F15

Grader, Polytechnic Institute of New York University
⬦ CS 6923: Machine Learning   S13
⬦ CS 6753: Theory of Computation   F12
⬦ MA 2312, 2322: Discrete Mathematics   F11

Teaching Assistant, Polytechnic Institute of New York University
⬦ EG 1001: Innovation and Technology Forum   F10, S11, F11
⬦ EG 1003: Introduction to Engineering and Design   F10, S11

SCHOLARSHIPS
⬦ Thompson-Bartlett Fellowship, Polytechnic Institute of NYU (declined)   Jan. 2012

⬦ Polytechnic Institute of NYU Honors Scholarship   2009 - 2013

⬦ Polytechnic Institute of NYU Promise Scholarship   2009 - 2013

INVITED TALKS
⬦ NYU Tandon School of Engineering: How to refute a random CSP   Apr. 2016

⬦ Carnegie Mellon University: Incremental Voronoi Diagrams   Mar. 2016

⬦ Stanford Theory Seminar: How to refute a random CSP   Mar. 2016

◇ Carnegie Mellon University: How to refute a random CSP   Sept. 2015

◇ NYU School of Engineering: Conditioning and covariance on caterpillars   April 2015

◇ Carnegie Mellon University: Conditioning and covariance on caterpillars   April 2015

◇ Polytechnic Institute of NYU: Sum of Squared Edges for MST of Points in a Unit Square   Nov. 2012

◇ Polytechnic Institute of NYU: Packing Simple Identical Polygons is NP-Hard   Sept. 2012

◇ Tufts University Leadership Alliance Seminar: Tile self-assembly using few glues per tile   July 2012

◇ Polytechnic Institute of NYU: Creating a Recommendation Engine Filter Using the Mahalanobis
Taguchi Strategy   Nov. 2011

SERVICE   **Tau Beta Pi, Polytechnic Institute of New York University**   2011 - 2013
                 ◇ Served as Chapter president.

                 MSCHE Steering Committee, Polytechnic Institute of New York University 2010 - 2012
                 ◇ Served on the committee to prepare university report for regional accreditation.
                 ◇ Participated in sub-committee focused on Leadership, Governance, and Integrity.

                 Women in Science and Technology Recruiter, Polytechnic Institute of NYU 2010 - 2012
                 ◇ Invited Student Panelist and Speaker at numerous events for prospective and current undergraduates

                 FIRST Women in Science and Technology Conference, Manchester, NH   2011
                 ◇ Invited Student Panelist

WORKSHOPS   **Workshop on Algorithms and Computational Geometry**, Greece   Aug. 2014
                 ◇ One of ten invitees

                 Swedish Summer School in Computer Science, Djurönäset, Sweden   June 2014

                 Women in Theory Workshop, New York, USA   May 2014

                 Greek Workshop on Computational Geometry, Greece   Aug. 2012
                 ◇ One of twelve invitees

                 27th Bellairs Workshop on Computational Geometry, Holetown, Barbados   Aug. 2012
                 ◇ One of twenty invitees