

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](#)
- 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 Jeremy 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	