

Aaron Potechin

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POSITIONS

Joint postdoc between the Simons Collaboration on Algorithms and Geometry at Cornell and the Institute for Advanced Study 2015-2017

Future positions:

(Kungliga Tekniska Hogskolan) KTH postdoc 2017-2018

Assistant Professor in Computer Science at the University of Chicago 2018 onwards

EDUCATION

Massachusetts Institute of Technology 2015

Ph.D. in Mathematics

Dissertation: "Analyzing Monotone Space Complexity Via the Switching Network Model"

University of Cambridge (Part III of the Math Tripos) 2010

Master of Advanced Study

Princeton 2009

B.A. in Mathematics (summa cum laude with high honors)

Dissertation: "Bounds on Monotone Switching Networks for Directed Connectivity"

HONORS/AWARDS

Machtey award for best student paper at FOCS 2010 2010

NSF Graduate Research Fellowship 2010

George B. Covington Prize (Outstanding Senior Research in Mathematics) 2009

Churchill Scholarship 2009

Barry M. Goldwater Scholarship 2008

Class of 1861 Prize (highest scoring sophomore on the Putnam examination) 2007

JOURNAL PAPERS

S. Chan, A. Potechin. Tight Bounds for Monotone Switching Networks Via Fourier Analysis. Theory of Computing Vol. 10 Article 15 (2014) p. 389-419

A. Berget, A. Manion, M. Maxwell, A. Potechin, V. Reiner. The Critical Group of a Line Graph. Annals of Combinatorics Volume 16, Issue 3 (2012) p.449-488

A Potechin. Maximal Caps in AG(6,3). Designs, Codes, and Cryptography, Volume 36, Issue 3 (2008) p.243-259

CONFERENCE PAPERS

S. Hopkins, P. Kothari, A. Potechin, P. Raghavendra, T. Schramm, D. Steurer. The Power of Sum-of-Squares for Detecting Hidden Structures. FOCS 2017

A. Potechin, D. Steurer. Exact Tensor Completion with Sum of Squares. COLT 2017

A. Potechin. A Note on Amortized Branching Program Complexity. CCC 2017

B. Barak, S. Hopkins, J. Kelner, P. Kothari, A. Moitra, A. Potechin. A Nearly Tight Sum-of-Squares Lower Bound for the Planted Clique Problem. FOCS 2016
D. Medarametla, A. Potechin. Bounds on the Norms of Uniform Low Degree Graph Matrices. RANDOM 2016
S. Hopkins. P. Kothari. A. Potechin. P. Raghavendra. T. Schramm. On the Integrality Gap of Degree-4 Sum of Squares for Planted Clique. SODA 2016
R. Meka, A. Potechin, A. Wigderson. Sum of Squares Lower Bounds for Planted Clique. STOC 2015
A Potechin. Bounds on Monotone Switching Networks for Directed Connectivity. FOCS 2010

PREPRINTS

A. Potechin. A Note on a Problem of Erdős and Rothschild (2014) arXiv:1412.1838
A. Potechin. Improved Upper and Lower Bound Techniques for Monotone Switching Networks for Directed Connectivity (2013) arXiv:1302.3726
J Brakensiek, A Potechin. Bounds on the Size of Sound Monotone Switching Networks Accepting Permutation Sets of Directed Trees. (2013) arXiv:1301.3780
K Carde, J Loubert, A Potechin, A Sanborn. Proof of Han's Hook Expansion Conjecture (2008) arXiv:0808.0928

RESEARCH MENTORING

PRIMES student: Dhruv Medarametla (Intel semifinalist)
RSI students: Joshua Brakensiek (won a Davidson fellowship), Gil Goldshlager (Intel semifinalist), Eric Mannes (Intel semifinalist), Jessica Ohrlein

OTHER MENTORING

MITxplore mentor

2012-2015