

RYAN O'DONNELL

Curriculum vitae

March, 2016

- CURRENT POSITION: Associate Professor with Tenure
Computer Science Department, School of Computer Science
Carnegie Mellon University
- CITIZENSHIP: Canadian, US permanent resident
- RESEARCH INTERESTS: Analysis of Boolean functions, Approximability of optimization problems,
Complexity theory, Property testing, Probability, Learning theory,
Quantum computation and information theory
- EDUCATION: **Ph.D., Massachusetts Institute of Technology**, 1999 – 2003
Department of Applied Mathematics
Thesis: *Computational applications of noise sensitivity*
Advisor: Madhu Sudan
B.Sc., University of Toronto, 1995 – 1999
Joint Specialist degree in Mathematics and Computer Science
- PROFESSIONAL EXPERIENCE: **Assoc. Professor with Tenure, Carnegie Mellon Comp. Sci. Dept.**, 2014–present
Visiting Professor, Boğaziçi University Comp. Eng. Dept., 2014
Associate Professor, Carnegie Mellon Comp. Sci. Dept., 2011–2014
Member, Sch. of Mathematics, Institute for Advanced Study, 2010–2011
Assistant Professor, Carnegie Mellon Comp. Sci. Dept., 2006–2011
Lecturer (unofficial), University of Washington, fall 2005
Postdoctoral researcher, Microsoft Theory Group, 2004–2006
Postdoctoral researcher, Institute for Advanced Study, 2003–2004

PH.D. STUDENTS SUPERVISED:	Karl Wimmer:	graduated 2009	(now Duquesne University)
	Yi Wu:	graduated 2010	(now Google)
	Eric Blais	graduated 2012	(now University of Waterloo)
	Yuan Zhou:	graduated 2014	(joint w/ V. Guruswami, now IU Bloomington)
	Aaron Roth:	2006 – 2008	(joint w/ A. Blum, now Penn)
	Ali Kemal Sinop:	2008 – 2011	(joint w/ V. Guruswami)
	John Wright:	2010 – present	(soon to be MIT postdoc)
	David Witmer:	2011 – present	(joint w/ A. Gupta)
	Srivatsan Narayanan:	2013	
	Sarah Allen:	2013 – present	
	Yu Zhao:	2014 – present	

PH.D. THESIS COMMITTEES:	R. Ryan Williams:	August 2007, Carnegie Mellon University
	Per Austrin:	November 2008, Royal Inst. Tech., Sweden
	Andrew Wan	April 2010, Columbia University
	Daniel Kane	June 2011, Harvard University (Math Dept)
	Ali K. Sinop	July 2012, Carnegie Mellon University
	Dvir Falik	August 2012, Hebrew University
	Pranjal Awasthi	July 2013, Carnegie Mellon University
	Amit Weinstein	November 2013, Tel Aviv University
	Li-Yang Tan	May 2014, Columbia University
	Chenggang Wu	June 2014, Tsinghua University
	Carol Wang	August 2015, Carnegie Mellon University
	Girish Varma	December 2015, Tata Inst. of Fundamental Research
Ziling Jiang	April 2016, Carnegie Mellon University (Math Dept)	

GRANTS, AWARDS, AND HONORS:	Eur. Research Council Marie Curie Incoming International Fellow, 2014
	NSF Grant in Algorithmic Foundations, 2013 – 2016 for “CSPs – Approximability versus Time”
	Binational Science Foundation (BSF) US-Israel Grant, 2013 – 2017 for “Influence of fuzzy Boolean functions”
	Microsoft Research–CMU Computational Thinking Grant, 2012 – 2013 for “Proof Complexity and Optimization”
	NSF Grant in Algorithmic Foundations, 2011 – 2014 for “Analysis of Boolean Functions”
	Microsoft Research–CMU Computational Thinking Grant, 2011 – 2012 for “Constraint Satisfaction Problems: Trichotomies”
	Microsoft Research–CMU Computational Thinking Grant, 2010 – 2011 for “The Dichotomy Conjecture”
	Von Neumann Fellowship (IAS School of Mathematics, 2010 – 2011)

NSF Grant in Algorithmic Foundations, 2009 – 2012
for “The Polynomial Method in Learning”
Alfred P. Sloan Research Fellowship, 2009
Pazy Memorial Award, 2009 (best BSF math/CS grant)
Binational Science Foundation (BSF) US-Israel Grant, 2008 – 2012
for “Fourier-Analytic Methods for Boolean Functions”
CyLab Grant for “Fault-Tolerant Voting”, 2008 – 2009
Okawa Foundation Research Grant, 2008
NSF Faculty Early Career Development (CAREER) Award, 2008 – 2013
for “Optimal Approximability”
Best Paper Award, Conference on Computational Complexity, 2003
for the paper *Extremal properties of polynomial threshold functions*
Best Student Paper Award, Conf. on Computational Complexity, 2002
and Best Student Paper Award, MIT Mathematics Department, 2003
for the paper *Hardness amplification within NP*
NSERC (“Canadian NSF”) Graduate Fellowship, 1999 – 2001
Rosenblith Fellowship, MIT Mathematics Department, 1999 – 2000

SERVICE AND
EDITORIAL
WORK:

SIGACT Committee for the Advancement of Theoretical Comp. Sci.,
member, 2015 – present
Theory of Computing, editor, 2006 – present
SIAM Journal on Discrete Mathematics, editor, 2012 – present
Electronic Colloquium on Computational Complexity,
scientific board 2009 – present
SIAM Journal of Computing, guest editor,
special issues for STOC 2005, FOCS 2010

CONFERENCE
COMMITTEES:

RANDOM 2016, **ICML** 2016, **ITCS** 2015, **CCC** 2013, **RANDOM** 2012,
SODA 2012, **FOCS** 2010, **COLT** 2010, **CCC** 2009, **ICALP** 2008, **NIPS** 2008,
STOC 2007, **STOC** 2005, **CCC** 2005

CONFERENCE
ORGANIZATION:

Simons Symposium. Co-organizer, 2016 symposium on
Analysis of Boolean Functions: new directions and applications.
2015 Canadian Discrete and Algorithmic Mathematics Conference
(CanaDAM), program committee member
Banff International Research Station. Co-organizer, 2014 workshop on
approximation algorithms and the hardness of approximation
Simons Symposium. Co-organizer, 2014 symposium on
Analysis of Boolean Functions: new directions and applications.
Simons Symposium. Co-organizer, 2012 symposium on
Analysis of Boolean Functions: new directions and applications.
Banff International Research Station. Co-organizer, 2011 workshop on
approximation algorithms and the hardness of approximation

Centre Emile Borel (Institute Henri Poincaré). Co-organizer, 2011 special semester on metric geometry, algorithms, groups
Center for Computational Intractability. Co-organizer, 2010 workshop on analysis and geometry of threshold functions.

JOURNAL REFERENCEING: Annales de l'Institut Henri Poincaré; Annals of Mathematics; Annals of Probability; Combinatorica; Combinatorics, Probability and Computing; Computational Complexity; Discrete Applied Mathematics; Encyclopedia of Algorithms; Information Processing Letters; Journal of the ACM; Journal of Computer and System Sciences; Journal of Global Optimization; Journal of Machine Learning Research; Journal of Physics A: Mathematical and Theoretical; Journal of Theoretical Computer Science; Mathematics of Operations Research; SIAM Journal of Computing ; SIAM Journal of Discrete Mathematics; Theory Of Computing; Transactions on Information Theory

CONFERENCE REFERENCEING: FOCS, STOC, SODA, CCC, ICALP, COLT, NIPS, ICML, ITCS, RANDOM, STACS, LATIN, MFCS

GRANT REFERENCEING: National Science Foundation
Israel Science Foundation
European Research Council

INVITED SYMPOSIUM TALKS: **St. Petersburg Low-Depth Complexity Workshop:** invited tutorial speaker, 2016
NUS Workshop on Semidefinite and Matrix Methods for Optimization: invited speaker, 2016
TCS+: invited speaker, 2015
Charles River Lectures on Probability: invited speaker, 2015
Random Structures & Algorithms: invited speaker, 2015
Santa Fe Institute workshop on Algebra, Geometry, Pseudorandomness, and Complexity 2015
Magic 77 (Manuel Blum Birthday Conference): invited speaker, 2015
International Congress of Mathematicians (ICM): 2014 invited section lecturer
Swedish Summer School in Computer Science 2014: lecturer
Bertinoro Workshop on Sublinear Algorithms 2014
Simons Institute: 2013 workshop on real analysis in testing, learning, and inapproximability
ELC Tokyo Complexity Workshop 2013
Bellairs Institute (Barbados) Workshop on Computational Complexity: 2012's invited speaker (10 lectures)

Mathematical Sciences Research Institute (MSRI):

fall 2011 workshop on Quantitative Geometry in Computer Science

4th Ann. Eastern Great Lakes (EaGL) Theory of Computation Workshop

Fields Institute: summer 2011 workshop on Approximability of CSPs

Isaac Newton Institute for Mathematical Sciences:

spring 2011 semester on discrete analysis

Centre Emile Borel (Institute Henri Poincaré):

spring 2011 trimester on approximation algorithms (4 lectures)

14th Semiannual New York Area Theory Day: fall 2010

China Theory Week 2010: Keynote talk

Institute for Advanced Study:

summer 2010 workshop on Pseudorandomness in Mathematical Structures

Toyota Technological Institute – Chicago (TTI-C):

spring 2009 workshop on Approximation Algorithms and their Limitations

Mathematical Sciences Research Institute (MSRI):

fall 2008 workshop on Discrete Rigidity Phenomena in Additive Combinatorics

Banff International Research Station (BIRS):

summer 2008 workshop on Analytic Tools in Computational Complexity.

STOC 2008: Invited tutorial speaker.

Cornell Workshop on Probability Theory and Computer Science:

spring 2008 workshop on discrete harmonic analysis and its applications

American Institute for Mathematics (AIM) Research Workshop:

fall 2007 seminar on Algorithmic Convex Geometry

Schloss-Dagstuhl Seminar:

fall 2007 seminar on Algebraic Methods in Computational Complexity

International Center for Mathematical Sciences (ICMS):

spring 2007 workshop on Geometry and Algorithms

Banff International Research Station (BIRS):

summer 2006 workshop on Recent Advances in Computational Complexity

American Mathematical Society (AMS) Central Section Meeting:

fall 2005 special session on Randomness in Computation

2nd Annual Pacific Northwest Theory Day: spring 2005

Mathematical Sciences Research Institute (MSRI):

spring 2005 workshop on Phase Transitions in Computation and Reconstruction

Yale Workshop on Discrete Mathematics and Theoretical Computer Sci.:

fall 2004 workshop on Harmonic Analysis of Boolean Functions

Schloss-Dagstuhl Seminar:

fall 2004 seminar on Algebraic Methods in Comp. Complexity

INVITED
ACADEMIC
TALKS:

Center for Quantum Technologies, NUS: Colloquium, 2016
Harvard University: Theory seminar 2015
Harvard University: Theory seminar 2015 (again)
Columbia University: Theory seminar 2015
Kent State: Mathematics seminar 2015
Microsoft New England Research: Theory Colloquium 2013
Microsoft New England Research: Theory Colloquium 2013 (again)
Cornell University: Probability seminar 2013
Purdue University: CS Theory seminar 2012
Istanbul Center for Mathematical Sciences (IMBM): Math seminar 2011
Microsoft Redmond Theory Group: CS Theory seminar 2011
Institute for Advanced Study: Discrete mathematics seminar 2011
Institute for Advanced Study: Discrete mathematics seminar 2010
Microsoft Redmond Theory Group: CS Theory seminar 2010
University of Washington: Probability seminar 2010
Microsoft Silicon Valley Theory Group: CS Theory seminar 2009
Institute for Advanced Study (IAS): CS Theory seminar 2009
Microsoft New England Theory Group: CS Theory seminar 2009
MIT: CS Theory colloquium 2009
SUNY Buffalo: CS Theory seminar 2008
University of Toronto: CS Theory seminar 2008
MIT: CS Theory colloquium 2007
Carnegie Mellon: ACO seminar 2007
Penn State: CS Theory seminar 2007
Carnegie Mellon: CS Theory seminar 2006
Carnegie Mellon: CS Theory seminar 2006 (again)
UT Austin: CS Theory seminar 2006
MIT: Applied Mathematics seminar 2006
University of Pennsylvania: CS Theory seminar 2006
University of Chicago: CS Theory seminar 2006
Georgia Tech: CS Theory seminar 2006
Georgia Tech: CS Theory seminar 2006 (again)
Dartmouth College: Mathematics seminar 2006
University of British Columbia: Math Colloquium 2006
University of British Columbia: Discrete Math seminar 2006
UC Berkeley: CS Theory seminar 2005
UC Berkeley: CS Theory seminar 2005 (again)
Simon Fraser University: CS Theory seminar 2005

University of Washington: Probability seminar 2005
UC Berkeley: CS Theory seminar 2004
University of Washington: CS Theory seminar 2004
University of Washington: CS Theory seminar 2004 (again)
Microsoft Redmond Theory Group: CS Theory seminar 2004
Columbia University: CS Theory seminar, 2004
Yale University: CS Theory seminar 2004
Institute for Advanced Study (IAS): CS Theory seminar 2004
Institute for Advanced Study (IAS): CS Theory seminar 2003
Institute for Advanced Study (IAS): CS Theory seminar 2003 (again)
University of Washington: CS Theory seminar 2002
Microsoft Redmond Theory Group: CS Theory seminar 2002
University of Toronto: CS Theory seminar 2002

CONFERENCE
TALKS:

FSTTCS 2014, ICALP 2009, STOC 2008, FOCS 2006, LATIN 2006, FOCS
2005, STOC 2005, FOCS 2003, CCC 2003, STOC 2003, FOCS 2002, STOC
2002, Mathematics and Computer Science II 2003, SODA 2002.

JOURNAL
ARTICLES:

1. I. Benjamini, S.-O. Chan, R. O'Donnell, O. Tamuz, L.-Y. Tan.
Convergence, unanimity and disagreement in majority dynamics on unimodular graphs and random graphs.
Stochastic Processes and their Applications, to appear.
2. M. Kauers, R. O'Donnell, L.-Y. Tan, Y. Zhou.
Hypercontractive inequalities via SOS, and the Frankl-Rödl graph.
Discrete Analysis 4 (2016).
3. P. Austrin, R. O'Donnell, L.-Y. Tan, J. Wright.
New NP-hardness results for 3-Coloring and 2-to-1 Label Cover.
Transactions on Computation Theory 6(1), pp. 2:1-20 (2014).
4. R. O'Donnell, Y. Wu, Y. Zhou.
Optimal lower bounds for locality sensitive hashing (except when q is tiny).
Transactions on Computation Theory 6(1), pp. 5:1-13 (2014).
5. R. O'Donnell, K. Wimmer.
Sharpness of KKL on Schreier graphs.
Electronic Communications in Probability 18(8), pp. 1-12 (2013).
6. G. Kindler, R. O'Donnell, A. Rao, A. Wigderson.
Spherical cubes: optimal foams from computational hardness amplification.
Communications of the ACM 55(10), pp. 90-97 (2012).
7. Joint with "D.H.J. Polymath" (a mathematical collective, see <http://michaelnielsen.org/polymath1/>)
A new proof of the density Hales-Jewett theorem.
Annals of Mathematics 175(3), pp. 1283-1327 (2012).
8. R. O'Donnell, R. Servedio.
The Chow parameters problem.
SIAM Journal of Computing 40(1), pp. 165-199 (2011).
9. P. Gopalan, R. O'Donnell, R. Servedio, A. Shpilka, K. Wimmer.
Testing Fourier dimensionality and sparsity.
SIAM Journal on Computing 40(4), pp. 1075-1100 (2011).
10. E. Blais, R. O'Donnell, K. Wimmer.
Polynomial regression under arbitrary product distributions.
Machine Learning 80(2-3), pp. 273-294 (2010).
11. R. O'Donnell, R. Servedio.
New degree bounds for polynomial threshold functions.
Combinatorica 30(3), pp. 327-358 (2010).
12. E. Mossel, R. O'Donnell, K. Oleszkiewicz.
Noise stability of functions with low influences: invariance and optimality
Annals of Mathematics 171(1), pp. 295-341 (2010).

13. K. Matulef, R. O'Donnell, R. Rubinfeld, R. Servedio.
Testing halfspaces.
SIAM Journal of Computing 39(3), pp. 2004–2047 (2010).
14. S. Khot, R. O'Donnell.
SDP gaps and UGC-hardness for Max-Cut-Gain.
Theory of Computing 5, pp. 83–117 (2009).
15. J. Feldman, R. O'Donnell, R. Servedio.
Learning mixtures of product distributions over discrete domains.
SIAM Journal of Computing 37(5), pp. 1536–1564 (2008).
16. B. Bollobás, G. Kindler, I. Leader, R. O'Donnell.
Eliminating cycles in the discrete torus.
Algorithmica 50(4), pp. 446–454 (2008).
17. R. O'Donnell, R. Servedio.
Extremal properties of polynomial threshold functions.
Journal of Computer and System Sciences 74(3), pp. 298–312 (2008).
(Invited paper, special issue for CCC 2003.)
18. R. O'Donnell, R. Servedio.
Learning monotone decision trees in polynomial time.
SIAM Journal of Computing 37(3), pp. 827–844 (2007).
19. I. Dinur, E. Friedgut, G. Kindler, R. O'Donnell.
On the Fourier tails of bounded functions over the discrete cube.
Israel Journal of Mathematics 160(1), pp. 389–412 (2007).
20. S. Khot, G. Kindler, E. Mossel, R. O'Donnell.
Optimal inapproximability results for MAX-CUT and other two-variable CSPs?
SIAM Journal of Computing 37(1), pp. 319–357 (2007).
(Invited paper, special issue for FOCS 2004.)
21. E. Mossel, R. O'Donnell, O. Regev, J. Steif, B. Sudakov.
Non-interactive correlation distillation, inhomogeneous Markov chains, and the reverse Bonami-Beckner inequality.
Israel Journal of Mathematics 154(1), pp. 299–336 (2006).
22. N. Bshouty, E. Mossel, R. O'Donnell, R. Servedio.
Learning DNF from random walks.
Journal of Computer and System Sciences 71(3), pp. 250–265 (2005).
(Invited paper, special issue for FOCS, STOC, COLT 2003.)
23. E. Mossel, R. O'Donnell.
Coin flipping from a cosmic source: On error correction of truly random bits.
Random Structures & Algorithms 26(4), pp. 418–436 (2005).
24. E. Mossel, R. O'Donnell, R. Servedio.
Learning functions of k relevant variables.
Journal of Computer and System Sciences 69(3), pp. 421–434 (2004).
(Invited paper, special issue for STOC 2003.)

25. R. O'Donnell.
Hardness amplification within NP.
Journal of Computer and System Sciences 69(1) pp. 68–94 (2004).
(Invited paper, special issue for STOC 2002.)
26. A. Klivans, R. O'Donnell, R. Servedio.
Learning intersections and thresholds of halfspaces.
Journal of Computer and System Sciences 68(4), pp. 808–840 (2004).
(Invited paper, special issue for FOCS 2002.)
27. E. Mossel, R. O'Donnell.
On the noise sensitivity of monotone functions.
Random Structures & Algorithms 23(3), pp. 333–350 (2003).
28. A. Corduneanu, C. Hsia, R. O'Donnell.
A greedy algorithm for solving meeting mixing problems.
UMAP Journal 18(3), pp. 331–342 (1997).

REFEREED
CONFERENCE
PUBLICATIONS:

29. R. O'Donnell, Y. Zhao.
Polynomial bounds for decoupling, with applications.
CCC 2016.
30. R. O'Donnell, J. Wright.
Efficient quantum tomography.
STOC 2016, QIP 2016.
31. B. Barak, A. Moitra, R. O'Donnell, P. Raghavendra, O. Regev,
D. Steurer, L. Trevisan, A. Vijayaraghavan, D. Witmer, J. Wright.
Beating the random assignment on constraint satisfaction problems
of bounded degree.
APPROX 2015.
32. S. R. Allen, R. O'Donnell, D. Witmer.
How to refute a random CSP.
FOCS 2015.
33. C. Cafarov, B. Kaya, R. O'Donnell, A.C.C. Say.
Optimal lower bounds for estimating entropy with PMF queries.
MFCS 2015.
34. R. O'Donnell, J. Wright
Quantum spectrum testing
STOC 2015, QIP 2015.
35. S. R. Allen, R. O'Donnell
Conditioning and covariance on caterpillars
ITW 2015.
36. R. O'Donnell, A. C. C. Say
One time-traveling bit is as good as logarithmically many
FSTTCS 2014.

37. J. Håstad, S. Huang, R. Manokaran, R. O'Donnell, J. Wright.
Improved NP-inapproximability for 2-variable linear equations.
APPROX 2015.
38. S. Dughmi, N. Immerlica, R. O'Donnell, L.-Y. Tan.
Algorithmic signaling of features in auction design.
SAGT 2015.
39. R. O'Donnell, X. Sun, L.-Y. Tan, J. Wright, Y. Zhao
A composition theorem for parity kill number.
CCC 2014.
40. R. O'Donnell, D. Witmer
Goldreich's PRG: Evidence for near-optimal polynomial stretch
CCC 2014.
41. R. O'Donnell, J. Wright, C. Wu, Y. Zhou
Hardness of robust graph isomorphism, Lasserre gaps, and
asymmetry of random graphs.
SODA 2014.
42. P. Kothari, A. Nayyeri, R. O'Donnell, C. Wu
Testing surface area.
SODA 2014.
43. M. Kauters, R. O'Donnell, L.-Y. Tan, Y. Zhou.
Hypercontractive inequalities via SOS, and the Frankl–Rödl graph.
SODA 2014.
44. C. Daskalakis, I. Diakonikolas, R. O'Donnell, R. Servedio, L.-Y. Tan
Learning sums of independent integer random variables.
FOCS 2013
45. R. O'Donnell, L.-Y. Tan.
A composition theorem for the Fourier Entropy-Influence conjecture.
ICALP 2013.
46. R. O'Donnell, Y. Zhou.
Approximability and proof complexity.
SODA 2013.
47. P. Austrin, R. O'Donnell, J. Wright.
A new point of NP-hardness for 2-to-1 Label Cover.
APPROX 2012.
48. G. Kindler, R. O'Donnell.
Gaussian noise sensitivity and Fourier tails.
CCC 2012.
49. R. O'Donnell, J. Wright.
A new point of NP-hardness for Unique Games.
STOC 2012.
50. G. Kun, R. O'Donnell, S. Tamaki, Y. Yoshida, Y. Zhou.
Linear programming, width-1 CSPs, and robust satisfaction.
ITCS 2011.

51. R. O'Donnell, J. Wright, Y. Zhou.
The Fourier Entropy–Influence Conjecture for some classes of functions.
ICALP 2011.
52. R. O'Donnell, Y. Wu, Y. Zhou.
Hardness of Max-2Lin and Max-3Lin over integers, reals, and large cyclic groups.
CCC 2011.
53. A. Moitra, R. O'Donnell.
Pareto optimal solutions for smoothed analysts.
STOC 2011.
54. I. Diakonikolas, R. O'Donnell, R. Servedio, Y. Wu.
Hardness results for agnostic learning low degree polynomial threshold functions.
SODA 2011.
55. R. O'Donnell, Y. Wu, Y. Zhou.
Optimal lower bounds for locality sensitive hashing (except when q is tiny).
ITCS 2011.
56. V. Guruswami, S. Khot, R. O'Donnell, P. Popat, M. Tulsiani, Y. Wu.
SDP gaps for 2-to-1 and other Label-Cover variants.
ICALP 2010.
57. P. Gopalan, R. O'Donnell, Y. Wu, D. Zuckerman.
Fooling functions of halfspaces under product distributions.
CCC 2010.
58. E. Blais, R. O'Donnell.
Lower bounds for testing function isomorphism.
CCC 2010.
59. J. Aspnes, E. Blais, M. Demirbas, R. O'Donnell, A. Rudra, S. Uurtamo.
 k + decision trees.
ALGOSENSORS 2010.
60. R. O'Donnell, K. Wimmer.
KKL, Kruskal-Katona, and monotone nets.
FOCS 2009.
61. K. Matulef, R. O'Donnell, R. Rubinfeld, R. Servedio.
Testing $\{-1,1\}$ -weight halfspaces.
RANDOM 2009.
62. P. Gopalan, R. O'Donnell, R. Servedio, A. Shpilka, K. Wimmer.
Testing Fourier dimensionality and sparsity.
ICALP 2009.

63. R. O'Donnell, Y. Wu.
Conditional hardness for satisfiable 3-CSPs.
STOC 2009.
64. R. O'Donnell, Y. Wu.
3-Bit Dictator testing: 1 vs. 5/8.
SODA 2009.
65. K. Matulef, R. O'Donnell, R. Rubinfeld, R. Servedio.
Testing halfspaces.
SODA 2009.
66. G. Kindler, R. O'Donnell, A. Rao, A. Wigderson.
Spherical cubes and rounding in high dimensions.
FOCS 2008.
67. A. Klivans, R. O'Donnell, R. Servedio.
Learning geometric concepts via surface area.
FOCS 2008.
68. E. Blais, R. O'Donnell, K. Wimmer.
Polynomial regression in arbitrary product spaces.
COLT 2008.
(Invited to Machine Learning Journal, special issue for COLT 2008.)
69. R. O'Donnell, R. Servedio.
The Chow Parameters problem.
STOC 2008.
70. R. O'Donnell, Y. Wu.
An optimal SDP algorithm for Max-Cut, and equally optimal Long Code tests.
STOC 2008.
71. R. O'Donnell, K. Wimmer.
Approximation by DNF: examples and counterexamples.
ICALP 2007.
72. U. Feige, G. Kindler, R. O'Donnell.
Understanding parallel repetition requires understanding foams.
CCC 2007.
73. S. Khot, R. O'Donnell.
SDP gaps and UGC-hardness for Max-Cut-Gain.
FOCS 2006.
74. J. Feldman, R. O'Donnell, R. Servedio.
PAC learning mixtures of Gaussians with no separation assumption.
COLT 2006.
75. B. Bollobás, G. Kindler, I. Leader, R. O'Donnell.
Eliminating cycles in the discrete torus.
LATIN 2006.

76. I. Dinur, E. Friedgut, G. Kindler, R. O'Donnell.
On the Fourier tails of bounded functions over the discrete cube.
STOC 2006.
77. R. O'Donnell, R. Servedio.
Learning monotone decision trees in polynomial time.
CCC 2006.
78. E. Mossel, R. O'Donnell, K. Oleszkiewicz.
Noise stability of functions with low influences: invariance and optimality.
FOCS 2005.
79. R. O'Donnell, M. Saks, O. Schramm, R. Servedio.
Every decision tree has an influential variable.
FOCS 2005.
80. J. Feldman, R. O'Donnell, R. Servedio.
Learning mixtures of product distributions over discrete domains.
FOCS 2005.
81. S. Khot, G. Kindler, E. Mossel, R. O'Donnell.
Optimal inapproximability results for MAX-CUT and other two-variable CSPs?
FOCS 2004.
82. N. Bshouty, E. Mossel, R. O'Donnell, R. Servedio.
Learning DNF from random walks.
FOCS 2003.
83. R. O'Donnell, R. Servedio.
Extremal properties of polynomial threshold functions.
CCC 2003.
84. R. O'Donnell, R. Servedio.
New degree bounds for polynomial threshold functions.
STOC 2003.
85. E. Mossel, R. O'Donnell, R. Servedio.
Learning juntas.
STOC 2003.
86. A. Klivans, R. O'Donnell, R. Servedio.
Learning intersections and thresholds of halfspaces.
FOCS 2002.
87. E. Mossel, R. O'Donnell.
On the noise sensitivity of monotone functions.
Mathematics and Computer Science II 2002.
88. R. O'Donnell.
Hardness amplification within NP.
STOC 2002.

89. L. Engebretsen, P. Indyk, R. O'Donnell.
Derandomized dimensionality reduction with applications.
SODA 2002.
- MANUSCRIPTS:
90. R. O'Donnell, D. Witmer.
Markov chain methods for small-set expansion.
91. R. O'Donnell, A. C. C. Say
The weakness of CTC qubits and the power of approximate counting.
92. G. Kindler, R. O'Donnell, D. Witmer.
Remarks on the Most Informative Function Conjecture at fixed mean.
- INVITED
CONFERENCE
PAPERS:
93. R. O'Donnell.
Social choice, computational complexity, Gaussian geometry,
and Boolean functions
Article accompanying invited ICM 2014 talk
94. R. O'Donnell.
Some topics in analysis of boolean functions.
Survey accompanying STOC 2008 tutorial
- BOOKS/
LONG
DOCUMENTS:
95. R. O'Donnell.
Analysis of Boolean Functions.
Cambridge University Press.
96. R. O'Donnell.
Computational aspects of noise sensitivity.
MIT Ph.D. Thesis 2003.
- PATENT:
97. M. Aiken, R. O'Donnell.
Fair share dynamic resource allocation scheme with a safety buffer.
US Patent #6625709