Russell Impagliazzo

List of Publications by Year
in descending order

62 papers	**5,999** citations	218381 **26** h-index	253896 **43** g-index
62 all docs	**62** docs citations	**62** times ranked	**1424** citing authors

#	Article	IF	Citations
1	The Surprising Power of Constant Depth Algebraic Proofs. , 2020, , .		4
2	Completeness for First-order Properties on Sparse Structures with Algorithmic Applications. ACM Transactions on Algorithms, 2019, 15, 1-35.	0.9	8
3	Pseudorandomness from Shrinkage. Journal of the ACM, 2019, 66, 1-16.	1.8	8
4	Completeness for First-Order Properties on Sparse Structures with Algorithmic Applications. , 2017, , .		5
5	Fourier Concentration from Shrinkage. Computational Complexity, 2017, 26, 275-321.	0.2	2
6	Time-Space Trade-offs in Resolution: Superpolynomial Lower Bounds for Superlinear Space. SIAM Journal on Computing, 2016, 45, 1612-1645.	0.8	10
7	Nondeterministic Extensions of the Strong Exponential Time Hypothesis and Consequences for Non-reducibility. , 2016, , .		64
8	Fourier Concentration from Shrinkage. , 2014, , .		3
9	On the Exact Complexity of Evaluating Quantified k -CNF. Algorithmica, 2013, 65, 817-827.	1.0	6
10	A Satisfiability Algorithm for Sparse Depth Two Threshold Circuits. , 2013, , .		24
11	Exact Complexity and Satisfiability. Lecture Notes in Computer Science, 2013, , 1-3.	1.0	1
12	Time-space tradeoffs in resolution. , 2012, , .		25
13	New Direct-Product Testers and 2-Query PCPs. SIAM Journal on Computing, 2012, 41, 1722-1768.	0.8	10
14	Approximating AC^0 by Small Height Decision Trees and a Deterministic Algorithm for #AC^0SAT. , 2012, , .		12
15	Pseudorandomness from Shrinkage. , 2012, , .		32
16	On the (im)possibility of obfuscating programs. Journal of the ACM, 2012, 59, 1-48.	1.8	334
17	A Satisfiability Algorithm for AC⁰. , 2012, , .		41
18	Relativized Separations of Worst-Case and Average-Case Complexities for NP. , 2011, , .		13

#	ARTICLE	IF	CITATIONS
19	Random Cnf's are Hard for the Polynomial Calculus. Computational Complexity, 2010, 19, 501-519.	0.2	40
20	Uniform Direct Product Theorems: Simplified, Optimized, and Derandomized. SIAM Journal on Computing, 2010, 39, 1637-1665.	0.8	39
21	Communication Complexity with Synchronized Clocks. , 2010, , .		20
22	Constructive Proofs of Concentration Bounds. Lecture Notes in Computer Science, 2010, , 617-631.	1.0	32
23	On the Exact Complexity of Evaluating Quantified k-CNF. Lecture Notes in Computer Science, 2010, , 50-59.	1.0	2
24	New direct-product testers and 2-query PCPs. , 2009, , .		13
25	A zero-one law for RP and derandomization of AM if NP is not small. Information and Computation, 2009, 207, 787-792.	0.5	3
26	Chernoff-Type Direct Product Theorems. Journal of Cryptology, 2009, 22, 75-92.	2.1	13
27	Approximate List-Decoding of Direct Product Codes and Uniform Hardness Amplification. SIAM Journal on Computing, 2009, 39, 564-605.	0.8	10
28	Security Amplification for Interactive Cryptographic Primitives. Lecture Notes in Computer Science, 2009, , 128-145.	1.0	15
29	The Complexity of Satisfiability of Small Depth Circuits. Lecture Notes in Computer Science, 2009, , 75-85.	1.0	78
30	On the Complexity of Succinct Zero-Sum Games. Computational Complexity, 2008, 17, 353-376.	0.2	31
31	The complexity of Unique k-SAT: An Isolation Lemma for k-CNFs. Journal of Computer and System Sciences, 2008, 74, 386-393.	0.9	40
32	Uniform direct product theorems. , 2008, , .		23
33	The Resolution Complexity of Independent Sets and Vertex Covers in Random Graphs. Computational Complexity, 2007, 16, 245-297.	0.2	20
34	Extracting Randomness Using Few Independent Sources. SIAM Journal on Computing, 2006, 36, 1095-1118.	0.8	76
35	Reducing The Seed Length In The Nisan-Wigderson Generator*. Combinatorica, 2006, 26, 647-681.	0.6	13
36	Constant-depth Frege systems with counting axioms polynomially simulate Nullstellensatz refutations. ACM Transactions on Computational Logic, 2006, 7, 199-218.	0.7	31

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37	Computational Complexity Since 1980. Lecture Notes in Computer Science, 2005, , 19-47.	1.0	1
38	Near Optimal Separation Of Tree-Like And General Resolution. Combinatorica, 2004, 24, 585-603.	0.6	59
39	Derandomizing Polynomial Identity Tests Means Proving Circuit Lower Bounds. Computational Complexity, 2004, 13, 1-46.	0.2	260
40	A Switching Lemma for Small Restrictions and Lower Bounds for k-DNF Resolution. SIAM Journal on Computing, 2004, 33, 1171-1200.	0.8	49
41	Derandomizing polynomial identity tests means proving circuit lower bounds. , 2003, , .		44
42	A Note on Conservativity Relations among Bounded Arithmetic Theories. Mathematical Logic Quarterly, 2002, 48, 375-377.	0.2	37
43	Homogenization and the polynomial calculus. Computational Complexity, 2002, 11, 91-108.	0.2	13
44	In search of an easy witness: exponential time vs. probabilistic polynomial time. Journal of Computer and System Sciences, 2002, 65, 672-694.	0.9	156
45	Linear Gaps between Degrees for the Polynomial Calculus Modulo Distinct Primes. Journal of Computer and System Sciences, 2001, 62, 267-289.	0.9	53
46	On the Complexity of k-SAT. Journal of Computer and System Sciences, 2001, 62, 367-375.	0.9	690
47	Which Problems Have Strongly Exponential Complexity?. Journal of Computer and System Sciences, 2001, 63, 512-530.	0.9	936
48	Randomness vs Time: Derandomization under a Uniform Assumption. Journal of Computer and System Sciences, 2001, 63, 672-688.	0.9	60
49	A Pseudorandom Generator from any One-way Function. SIAM Journal on Computing, 1999, 28, 1364-1396.	0.8	1,090
50	The Relative Complexity of NP Search Problems. Journal of Computer and System Sciences, 1998, 57, 3-19.	0.9	143
51	P = BPP if E requires exponential circuits. , 1997, , .		359
52	Size--Depth Tradeoffs for Threshold Circuits. SIAM Journal on Computing, 1997, 26, 693-707.	0.8	50
53	A Tight Relationship between Generic Oracles and Type-2 Complexity Theory. Information and Computation, 1997, 137, 159-170.	0.5	9
54	Efficient cryptographic schemes provably as secure as subset sum. Journal of Cryptology, 1996, 9, 199-216.	2.1	119

#	Article	IF	Citations
55	Using the Groebner basis algorithm to find proofs of unsatisfiability. , 1996, , .		190
56	Lower Bounds on Hilbert's Nullstellensatz and Propositional Proofs. Proceedings of the London Mathematical Society, 1996, s3-73, 1-26.	0.6	90
57	Efficient Cryptographic Schemes Provably as Secure as Subset Sum. Journal of Cryptology, 1996, 9, 199.	2.1	125
58	The relative complexity of NP search problems. , 1995, , .		21
59	The effect of random restrictions on formula size. Random Structures and Algorithms, 1993, 4, 121-133.	0.6	34
60	Exponential lower bounds for the pigeonhole principle. Computational Complexity, 1993, 3, 97-140.	0.2	156
61	Exponential lower bounds for the pigeonhole principle. , 1992, , .		47
62	Generic oracles and oracle classes. , 1987, , .		107