

Russell Impagliazzo

List of Publications by Year in descending order

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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	A Pseudorandom Generator from any One-way Function. SIAM Journal on Computing, 1999, 28, 1364-1396.	0.8	1,090
2	Which Problems Have Strongly Exponential Complexity?. Journal of Computer and System Sciences, 2001, 63, 512-530.	0.9	936
3	On the Complexity of k-SAT. Journal of Computer and System Sciences, 2001, 62, 367-375.	0.9	690
4	P = BPP if E requires exponential circuits. , 1997, , .		359
5	On the (im)possibility of obfuscating programs. Journal of the ACM, 2012, 59, 1-48.	1.8	334
6	Derandomizing Polynomial Identity Tests Means Proving Circuit Lower Bounds. Computational Complexity, 2004, 13, 1-46.	0.2	260
7	Using the Groebner basis algorithm to find proofs of unsatisfiability. , 1996, , .		190
8	Exponential lower bounds for the pigeonhole principle. Computational Complexity, 1993, 3, 97-140.	0.2	156
9	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
10	The Relative Complexity of NP Search Problems. Journal of Computer and System Sciences, 1998, 57, 3-19.	0.9	143
11	Efficient Cryptographic Schemes Provably as Secure as Subset Sum. Journal of Cryptology, 1996, 9, 199.	2.1	125
12	Efficient cryptographic schemes provably as secure as subset sum. Journal of Cryptology, 1996, 9, 199-216.	2.1	119
13	Generic oracles and oracle classes. , 1987, , .		107
14	Lower Bounds on Hilbert's Nullstellensatz and Propositional Proofs. Proceedings of the London Mathematical Society, 1996, s3-73, 1-26.	0.6	90
15	The Complexity of Satisfiability of Small Depth Circuits. Lecture Notes in Computer Science, 2009, , 75-85.	1.0	78
16	Extracting Randomness Using Few Independent Sources. SIAM Journal on Computing, 2006, 36, 1095-1118.	0.8	76
17	Nondeterministic Extensions of the Strong Exponential Time Hypothesis and Consequences for Non-reducibility. , 2016, , .		64
18	Randomness vs Time: Derandomization under a Uniform Assumption. Journal of Computer and System Sciences, 2001, 63, 672-688.	0.9	60

#	ARTICLE	IF	CITATIONS
19	Near Optimal Separation Of Tree-Like And General Resolution. <i>Combinatorica</i> , 2004, 24, 585-603.	0.6	59
20	Linear Gaps between Degrees for the Polynomial Calculus Modulo Distinct Primes. <i>Journal of Computer and System Sciences</i> , 2001, 62, 267-289.	0.9	53
21	Size-Depth Tradeoffs for Threshold Circuits. <i>SIAM Journal on Computing</i> , 1997, 26, 693-707.	0.8	50
22	A Switching Lemma for Small Restrictions and Lower Bounds for k -DNF Resolution. <i>SIAM Journal on Computing</i> , 2004, 33, 1171-1200.	0.8	49
23	Exponential lower bounds for the pigeonhole principle. , 1992, , .		47
24	Derandomizing polynomial identity tests means proving circuit lower bounds. , 2003, , .		44
25	A Satisfiability Algorithm for $AC^{sup>0</sup>}$. , 2012, , .		41
26	The complexity of Unique k -SAT: An Isolation Lemma for k -CNFs. <i>Journal of Computer and System Sciences</i> , 2008, 74, 386-393.	0.9	40
27	Random Cnf TM s are Hard for the Polynomial Calculus. <i>Computational Complexity</i> , 2010, 19, 501-519.	0.2	40
28	Uniform Direct Product Theorems: Simplified, Optimized, and Derandomized. <i>SIAM Journal on Computing</i> , 2010, 39, 1637-1665.	0.8	39
29	A Note on Conservativity Relations among Bounded Arithmetic Theories. <i>Mathematical Logic Quarterly</i> , 2002, 48, 375-377.	0.2	37
30	The effect of random restrictions on formula size. <i>Random Structures and Algorithms</i> , 1993, 4, 121-133.	0.6	34
31	Pseudorandomness from Shrinkage. , 2012, , .		32
32	Constructive Proofs of Concentration Bounds. <i>Lecture Notes in Computer Science</i> , 2010, , 617-631.	1.0	32
33	Constant-depth Frege systems with counting axioms polynomially simulate Nullstellensatz refutations. <i>ACM Transactions on Computational Logic</i> , 2006, 7, 199-218.	0.7	31
34	On the Complexity of Succinct Zero-Sum Games. <i>Computational Complexity</i> , 2008, 17, 353-376.	0.2	31
35	Time-space tradeoffs in resolution. , 2012, , .		25
36	A Satisfiability Algorithm for Sparse Depth Two Threshold Circuits. , 2013, , .		24

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37	Uniform direct product theorems. , 2008, , .		23
38	The relative complexity of NP search problems. , 1995, , .		21
39	The Resolution Complexity of Independent Sets and Vertex Covers in Random Graphs. Computational Complexity, 2007, 16, 245-297.	0.2	20
40	Communication Complexity with Synchronized Clocks. , 2010, , .		20
41	Security Amplification for Interactive Cryptographic Primitives. Lecture Notes in Computer Science, 2009, , 128-145.	1.0	15
42	Homogenization and the polynomial calculus. Computational Complexity, 2002, 11, 91-108.	0.2	13
43	Reducing The Seed Length In The Nisan-Wigderson Generator*. Combinatorica, 2006, 26, 647-681.	0.6	13
44	New direct-product testers and 2-query PCPs. , 2009, , .		13
45	Chernoff-Type Direct Product Theorems. Journal of Cryptology, 2009, 22, 75-92.	2.1	13
46	Relativized Separations of Worst-Case and Average-Case Complexities for NP. , 2011, , .		13
47	Approximating AC^0 by Small Height Decision Trees and a Deterministic Algorithm for $\#AC^0SAT$. , 2012, , .		12
48	Approximate List-Decoding of Direct Product Codes and Uniform Hardness Amplification. SIAM Journal on Computing, 2009, 39, 564-605.	0.8	10
49	New Direct-Product Testers and 2-Query PCPs. SIAM Journal on Computing, 2012, 41, 1722-1768.	0.8	10
50	Time-Space Trade-offs in Resolution: Superpolynomial Lower Bounds for Superlinear Space. SIAM Journal on Computing, 2016, 45, 1612-1645.	0.8	10
51	A Tight Relationship between Generic Oracles and Type-2 Complexity Theory. Information and Computation, 1997, 137, 159-170.	0.5	9
52	Completeness for First-order Properties on Sparse Structures with Algorithmic Applications. ACM Transactions on Algorithms, 2019, 15, 1-35.	0.9	8
53	Pseudorandomness from Shrinkage. Journal of the ACM, 2019, 66, 1-16.	1.8	8
54	On the Exact Complexity of Evaluating Quantified k -CNF. Algorithmica, 2013, 65, 817-827.	1.0	6

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55	Completeness for First-Order Properties on Sparse Structures with Algorithmic Applications. , 2017, , .		5
56	The Surprising Power of Constant Depth Algebraic Proofs. , 2020, , .		4
57	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
58	Fourier Concentration from Shrinkage. , 2014, , .		3
59	Fourier Concentration from Shrinkage. Computational Complexity, 2017, 26, 275-321.	0.2	2
60	On the Exact Complexity of Evaluating Quantified k-CNF. Lecture Notes in Computer Science, 2010, , 50-59.	1.0	2
61	Computational Complexity Since 1980. Lecture Notes in Computer Science, 2005, , 19-47.	1.0	1
62	Exact Complexity and Satisfiability. Lecture Notes in Computer Science, 2013, , 1-3.	1.0	1