

# Madhu Sudan

## List of Publications by Year in descending order

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69  
papers

5,373  
citations

331670  
21  
h-index

223800  
46  
g-index

73  
all docs

73  
docs citations

73  
times ranked

1197  
citing authors

#	ARTICLE	IF	CITATIONS
1	Proof verification and the hardness of approximation problems. Journal of the ACM, 1998, 45, 501-555.	2.2	1,079
2	Robust Characterizations of Polynomials with Applications to Program Testing. SIAM Journal on Computing, 1996, 25, 252-271.	1.0	614
3	Decoding of Reed Solomon Codes beyond the Error-Correction Bound. Journal of Complexity, 1997, 13, 180-193.	1.3	556
4	Free Bits, PCPs, and Nonapproximability--Towards Tight Results. SIAM Journal on Computing, 1998, 27, 804-915.	1.0	354
5	Approximate graph coloring by semidefinite programming. Journal of the ACM, 1998, 45, 246-265.	2.2	294
6	Pseudorandom Generators without the XOR Lemma. Journal of Computer and System Sciences, 2001, 62, 236-266.	1.2	243
7	The Approximability of Constraint Satisfaction Problems. SIAM Journal on Computing, 2001, 30, 1863-1920.	1.0	148
8	Robust PCPs of Proximity, Shorter PCPs, and Applications to Coding. SIAM Journal on Computing, 2006, 36, 889-974.	1.0	144
9	Gadgets, Approximation, and Linear Programming. SIAM Journal on Computing, 2000, 29, 2074-2097.	1.0	133
10	On Syntactic versus Computational Views of Approximability. SIAM Journal on Computing, 1998, 28, 164-191.	1.0	125
11	Highly resilient correctors for polynomials. Information Processing Letters, 1992, 43, 169-174.	0.6	123
12	Improved Low-Degree Testing and its Applications. Combinatorica, 2003, 23, 365-426.	1.2	122
13	Self-testing/correcting for polynomials and for approximate functions. , 1991, , .		116
14	Short PCPs with Polylog Query Complexity. SIAM Journal on Computing, 2008, 38, 551-607.	1.0	104
15	Locally testable codes and PCPs of almost-linear length. Journal of the ACM, 2006, 53, 558-655.	2.2	96
16	Improved low-degree testing and its applications. , 1997, , .		89
17	Algebraic property testing. , 2008, , .		84
18	Learning Polynomials with Queries: The Highly Noisy Case. SIAM Journal on Discrete Mathematics, 2000, 13, 535-570.	0.8	82

#	ARTICLE	IF	CITATIONS
19	Chinese remaindering with errors. , 1999, , .		53
20	New affine-invariant codes from lifting. , 2013, , .		53
21	Extensions to the Method of Multiplicities, with Applications to Kakeya Sets and Mergers. SIAM Journal on Computing, 2013, 42, 2305-2328.	1.0	50
22	Optimal Testing of Reed-Muller Codes. , 2010, , .		48
23	Extensions to the Method of Multiplicities, with Applications to Kakeya Sets and Mergers. , 2009, , .		47
24	Optimal error rates for interactive coding I. , 2014, , .		42
25	Pseudorandom generators without the XOR Lemma (extended abstract). , 1999, , .		37
26	Simple PCPs with poly-log rate and query complexity. , 2005, , .		37
27	Robust locally testable codes and products of codes. Random Structures and Algorithms, 2006, 28, 387-402.	1.1	36
28	Reconstructing Algebraic Functions from Mixed Data. SIAM Journal on Computing, 1998, 28, 487-510.	1.0	35
29	Hardness of Approximate Hypergraph Coloring. SIAM Journal on Computing, 2002, 31, 1663-1686.	1.0	35
30	Reconstructing curves in three (and higher) dimensional space from noisy data. , 2003, , .		32
31	Improved lower bound on the size of Kakeya sets over finite fields. Analysis and PDE, 2008, 1, 375-379.	1.4	30
32	2-Transitivity Is Insufficient for Local Testability. , 2008, , .		24
33	Invariance in Property Testing. Lecture Notes in Computer Science, 2010, , 211-227.	1.3	19
34	Symmetric LDPC Codes are not Necessarily Locally Testable. , 2011, , .		18
35	Bounds on 2-Query Codeword Testing. Lecture Notes in Computer Science, 2003, , 216-227.	1.3	15
36	Succinct Representation of Codes with Applications to Testing. Lecture Notes in Computer Science, 2009, , 534-547.	1.3	15

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37	Optimal Error Correction for Computationally Bounded Noise. IEEE Transactions on Information Theory, 2010, 56, 5673-5680.	2.4	14
38	Ideal Error-Correcting Codes: Unifying Algebraic and Number-Theoretic Algorithms. Lecture Notes in Computer Science, 2001, , 36-45.	1.3	14
39	Locally Testable Codes Require Redundant Testers. SIAM Journal on Computing, 2010, 39, 3230-3247.	1.0	13
40	Robust Locally Testable Codes and Products of Codes. Lecture Notes in Computer Science, 2004, , 286-297.	1.3	13
41	Linear-Consistency Testing. Journal of Computer and System Sciences, 2001, 62, 589-607.	1.2	12
42	List Decoding: Algorithms and Applications. Lecture Notes in Computer Science, 2000, , 25-41.	1.3	12
43	Probabilistically checkable proofs. Communications of the ACM, 2009, 52, 76-84.	4.5	11
44	Optimal Testing of Multivariate Polynomials over Small Prime Fields. , 2011, , .		11
45	On Dinur's proof of the PCP theorem. Bulletin of the American Mathematical Society, 2006, 44, 19-62.	1.5	10
46	Decodability of group homomorphisms beyond the johnson bound. , 2008, , .		10
47	Locally Testable Codes Require Redundant Testers. , 2009, , .		9
48	Optimal Testing of Multivariate Polynomials over Small Prime Fields. SIAM Journal on Computing, 2013, 42, 536-562.	1.0	9
49	Succinct Representation of Codes with Applications to Testing. SIAM Journal on Discrete Mathematics, 2012, 26, 1618-1634.	0.8	6
50	Keakeya-type sets in finite vector spaces. Journal of Algebraic Combinatorics, 2011, 34, 337-355.	0.8	5
51	Algorithmic issues in coding theory. Lecture Notes in Computer Science, 1997, , 184-199.	1.3	4
52	Local Decoding and Testing for Homomorphisms. Lecture Notes in Computer Science, 2006, , 375-385.	1.3	4
53	Guest column: testing linear properties. ACM SIGACT News, 2011, 42, 59-80.	0.1	4
54	A New Upper Bound on the Query Complexity for Testing Generalized Reed-Muller codes. Lecture Notes in Computer Science, 2012, , 639-650.	1.3	4

#	ARTICLE	IF	CITATIONS
55	Testing Linear-Invariant Non-linear Properties: A Short Report. Lecture Notes in Computer Science, 2010, , 260-268.	1.3	4
56	Sparse Affine-Invariant Linear Codes Are Locally Testable. , 2012, , .		3
57	2-Transitivity is Insufficient for Local Testability. Computational Complexity, 2013, 22, 137-158.	0.3	3
58	Limitations on Testable Affine-Invariant Codes in the High-Rate Regime. , 2015, , .		1
59	Robust Testing of Lifted Codes with Applications to Low-Degree Testing. , 2015, , .		1
60	Local decoding and testing of polynomials over grids. Random Structures and Algorithms, 2020, 57, 658-694.	1.1	1
61	Decoding multivariate multiplicity codes on product sets. , 2021, , .		1
62	Linear Consistency Testing. Lecture Notes in Computer Science, 1999, , 109-120.	1.3	1
63	MacWilliams identities. Resonance, 2005, 10, 74-82.	0.3	0
64	Complexity Theory. Oberwolfach Reports, 2006, 2, 1431-1504.	0.0	0
65	Algebraic algorithms and coding theory. , 2008, , .		0
66	Optimal Testing of Reed-Muller Codes. Lecture Notes in Computer Science, 2010, , 269-275.	1.3	0
67	Sparse affine-invariant linear codes are locally testable. Computational Complexity, 2017, 26, 37-77.	0.3	0
68	On Representations of Algebraic-Geometric Codes for List Decoding. Lecture Notes in Computer Science, 2000, , 244-255.	1.3	0
69	Small PCPs with Low Query Complexity. Lecture Notes in Computer Science, 2001, , 327-338.	1.3	0