

Madhu Sudan

List of Publications by Year in descending order

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Version: 2024-02-01

69
papers

5,373
citations

331538

21
h-index

223716

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. | 1.8 | 1,079 |
| 2 | Robust Characterizations of Polynomials with Applications to Program Testing. SIAM Journal on Computing, 1996, 25, 252-271. | 0.8 | 614 |
| 3 | Decoding of Reed Solomon Codes beyond the Error-Correction Bound. Journal of Complexity, 1997, 13, 180-193. | 0.7 | 556 |
| 4 | Free Bits, PCPs, and Nonapproximability--Towards Tight Results. SIAM Journal on Computing, 1998, 27, 804-915. | 0.8 | 354 |
| 5 | Approximate graph coloring by semidefinite programming. Journal of the ACM, 1998, 45, 246-265. | 1.8 | 294 |
| 6 | Pseudorandom Generators without the XOR Lemma. Journal of Computer and System Sciences, 2001, 62, 236-266. | 0.9 | 243 |
| 7 | The Approximability of Constraint Satisfaction Problems. SIAM Journal on Computing, 2001, 30, 1863-1920. | 0.8 | 148 |
| 8 | Robust PCPs of Proximity, Shorter PCPs, and Applications to Coding. SIAM Journal on Computing, 2006, 36, 889-974. | 0.8 | 144 |
| 9 | Gadgets, Approximation, and Linear Programming. SIAM Journal on Computing, 2000, 29, 2074-2097. | 0.8 | 133 |
| 10 | On Syntactic versus Computational Views of Approximability. SIAM Journal on Computing, 1998, 28, 164-191. | 0.8 | 125 |
| 11 | Highly resilient correctors for polynomials. Information Processing Letters, 1992, 43, 169-174. | 0.4 | 123 |
| 12 | Improved Low-Degree Testing and its Applications. Combinatorica, 2003, 23, 365-426. | 0.6 | 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. | 0.8 | 104 |
| 15 | Locally testable codes and PCPs of almost-linear length. Journal of the ACM, 2006, 53, 558-655. | 1.8 | 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. | 0.4 | 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. | 0.8 | 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. | 0.6 | 36 |
| 28 | Reconstructing Algebraic Functions from Mixed Data. SIAM Journal on Computing, 1998, 28, 487-510. | 0.8 | 35 |
| 29 | Hardness of Approximate Hypergraph Coloring. SIAM Journal on Computing, 2002, 31, 1663-1686. | 0.8 | 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. | 0.6 | 30 |
| 32 | 2-Transitivity Is Insufficient for Local Testability. , 2008, , . | | 24 |
| 33 | Invariance in Property Testing. Lecture Notes in Computer Science, 2010, , 211-227. | 1.0 | 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. | 1.0 | 15 |
| 36 | Succinct Representation of Codes with Applications to Testing. Lecture Notes in Computer Science, 2009, , 534-547. | 1.0 | 15 |

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 37 | Optimal Error Correction for Computationally Bounded Noise. IEEE Transactions on Information Theory, 2010, 56, 5673-5680. | 1.5 | 14 |
| 38 | Ideal Error-Correcting Codes: Unifying Algebraic and Number-Theoretic Algorithms. Lecture Notes in Computer Science, 2001, , 36-45. | 1.0 | 14 |
| 39 | Locally Testable Codes Require Redundant Testers. SIAM Journal on Computing, 2010, 39, 3230-3247. | 0.8 | 13 |
| 40 | Robust Locally Testable Codes and Products of Codes. Lecture Notes in Computer Science, 2004, , 286-297. | 1.0 | 13 |
| 41 | Linear-Consistency Testing. Journal of Computer and System Sciences, 2001, 62, 589-607. | 0.9 | 12 |
| 42 | List Decoding: Algorithms and Applications. Lecture Notes in Computer Science, 2000, , 25-41. | 1.0 | 12 |
| 43 | Probabilistically checkable proofs. Communications of the ACM, 2009, 52, 76-84. | 3.3 | 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. | 0.8 | 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. | 0.8 | 9 |
| 49 | Succinct Representation of Codes with Applications to Testing. SIAM Journal on Discrete Mathematics, 2012, 26, 1618-1634. | 0.4 | 6 |
| 50 | Keakeya-type sets in finite vector spaces. Journal of Algebraic Combinatorics, 2011, 34, 337-355. | 0.4 | 5 |
| 51 | Algorithmic issues in coding theory. Lecture Notes in Computer Science, 1997, , 184-199. | 1.0 | 4 |
| 52 | Local Decoding and Testing for Homomorphisms. Lecture Notes in Computer Science, 2006, , 375-385. | 1.0 | 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. | 1.0 | 4 |

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 55 | Testing Linear-Invariant Non-linear Properties: A Short Report. Lecture Notes in Computer Science, 2010, , 260-268. | 1.0 | 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. | 0.2 | 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. | 0.6 | 1 |
| 61 | Decoding multivariate multiplicity codes on product sets. , 2021, , . | | 1 |
| 62 | Linear Consistency Testing. Lecture Notes in Computer Science, 1999, , 109-120. | 1.0 | 1 |
| 63 | MacWilliams identities. Resonance, 2005, 10, 74-82. | 0.2 | 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. | 1.0 | 0 |
| 67 | Sparse affine-invariant linear codes are locally testable. Computational Complexity, 2017, 26, 37-77. | 0.2 | 0 |
| 68 | On Representations of Algebraic-Geometric Codes for List Decoding. Lecture Notes in Computer Science, 2000, , 244-255. | 1.0 | 0 |
| 69 | Small PCPs with Low Query Complexity. Lecture Notes in Computer Science, 2001, , 327-338. | 1.0 | 0 |