Alexander Vardy

List of Publications by Year
in descending order

152 papers	8,802 citations	87888 38 h-index	56724 83 g-index
152 all docs	152 docs citations	152 times ranked	2872 citing authors

#	Article	IF	Citations
1	List Decoding of Polar Codes. IEEE Transactions on Information Theory, 2015, 61, 2213-2226.	2.4	1,185
2	Closest point search in lattices. IEEE Transactions on Information Theory, 2002, 48, 2201-2214.	2.4	1,095
3	How to Construct Polar Codes. IEEE Transactions on Information Theory, 2013, 59, 6562-6582.	2.4	537
4	Algebraic soft-decision decoding of reed-solomon codes. IEEE Transactions on Information Theory, 2003, 49, 2809-2825.	2.4	455
5	List decoding of polar codes. , 2011, , .		390
6	Achieving the Secrecy Capacity of Wiretap Channels Using Polar Codes. IEEE Transactions on Information Theory, 2011, 57, 6428-6443.	2.4	349
7	Fast Polar Decoders: Algorithm and Implementation. IEEE Journal on Selected Areas in Communications, 2014, 32, 946-957.	14.0	290
8	The intractability of computing the minimum distance of a code. IEEE Transactions on Information Theory, 1997, 43, 1757-1766.	2.4	262
9	MDS array codes with independent parity symbols. IEEE Transactions on Information Theory, 1996, 42, 529-542.	2.4	177
10	Hardware architectures for successive cancellation decoding of polar codes. , 2011, , .		164
11	Error-Correcting Codes in Projective Space. IEEE Transactions on Information Theory, 2011, 57, 1165-1173.	2.4	163
12	Minimal tail-biting trellises: the Golay code and more. IEEE Transactions on Information Theory, 1999, 45, 1435-1455.	2.4	128
13	Fast List Decoders for Polar Codes. IEEE Journal on Selected Areas in Communications, 2016, 34, 318-328.	14.0	127
14	Upper bounds for constant-weight codes. IEEE Transactions on Information Theory, 2000, 46, 2373-2395.	2.4	126
15	On the stopping distance and the stopping redundancy of codes. IEEE Transactions on Information Theory, 2006, 52, 922-932.	2.4	125
16	Semantic Security for the Wiretap Channel. Lecture Notes in Computer Science, 2012, , 294-311.	1.3	114
17	Maximum-likelihood soft decision decoding of BCH codes. IEEE Transactions on Information Theory, 1994, 40, 546-554.	2.4	107
18	Perfect binary codes: constructions, properties, and enumeration. IEEE Transactions on Information Theory, 1994, 40, 754-763.	2.4	94

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19	Codes for distributed PIR with low storage overhead. , 2015, , .		88
20	Interleaving schemes for multidimensional cluster errors. IEEE Transactions on Information Theory, 1998, 44, 730-743.	2.4	77
21	Bit-level soft-decision decoding of Reed-Solomon codes. IEEE Transactions on Communications, 1991, 39, 440-444.	7.8	69
22	On Perfect Codes and Tilings: Problems and Solutions. SIAM Journal on Discrete Mathematics, 1998, 11, 205-223.	0.8	68
23	Algorithmic complexity in coding theory and the minimum distance problem. , 1997, , .		67
24	Flexible and Low-Complexity Encoding and Decoding of Systematic Polar Codes. IEEE Transactions on Communications, 2016, 64, 2732-2745.	7.8	67
25	Minimum Storage Regenerating Codes for All Parameters. IEEE Transactions on Information Theory, 2017, 63, 6318-6328.	2.4	65
26	Generalized minimum-distance decoding of Euclidean-space codes and lattices. IEEE Transactions on Information Theory, 1996, 42, 1992-2026.	2.4	60
27	Universal bound on the performance of lattice codes. IEEE Transactions on Information Theory, 1999, 45, 670-681.	2.4	59
28	Optimal sectionalization of a trellis. IEEE Transactions on Information Theory, 1996, 42, 689-703.	2.4	57
29	Coding for Racetrack Memories. IEEE Transactions on Information Theory, 2018, 64, 7094-7112.	2.4	56
30	More efficient soft decoding of the Golay codes. IEEE Transactions on Information Theory, 1991, 37, 667-672.	2.4	54
31	The Parametrized Complexity of Some Fundamental Problems in Coding Theory. SIAM Journal on Computing, 1999, 29, 545-570.	1.0	54
32	Codes for Write-Once Memories. IEEE Transactions on Information Theory, 2012, 58, 5985-5999.	2.4	54
33	Hardware Implementation of Successive-Cancellation Decoders for Polar Codes. Journal of Signal Processing Systems, 2012, 69, 305-315.	2.1	54
34	A new polar coding scheme for strong security on wiretap channels. , 2013, , .		54
35	Signal-space characterization of iterative decoding. IEEE Transactions on Information Theory, 2001, 47, 766-781.	2.4	52
36	Lower bounds on trellis complexity of block codes. IEEE Transactions on Information Theory, 1995, 41, 1938-1954.	2.4	51

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37	The turbo decoding algorithm and its phase trajectories. IEEE Transactions on Information Theory, 2001, 47, 699-722.	2.4	51
38	Generalized minimum distance decoding in Euclidean space: performance analysis. IEEE Transactions on Information Theory, 2000, 46, 60-83.	2.4	50
39	Maximum likelihood decoding of the Leech lattice. IEEE Transactions on Information Theory, 1993, 39, 1435-1444.	2.4	49
40	EXISTENCE OF -ANALOGS OF STEINERÂSYSTEMS. Forum of Mathematics, Pi, 2016, 4, .	2.0	48
41	Conservative arrays: multidimensional modulation codes for holographic recording. IEEE Transactions on Information Theory, 1996, 42, 227-230.	2.4	47
42	High-order spectral-null codes-constructions and bounds. IEEE Transactions on Information Theory, 1994, 40, 1826-1840.	2.4	46
43	Achieving the secrecy capacity of wiretap channels using Polar codes. , 2010, , .		46
44	The Leech lattice and the Golay code: bounded-distance decoding and multilevel constructions. IEEE Transactions on Information Theory, 1994, 40, 1030-1043.	2.4	43
45	The structure of tail-biting trellises: Minimality and basic principles. IEEE Transactions on Information Theory, 2003, 49, 2081-2105.	2.4	43
46	On the scaling exponent of binary polarization kernels. , 2014, , .		41
47	Tilings of Binary Spaces. SIAM Journal on Discrete Mathematics, 1996, 9, 393-412.	0.8	38
48	The Re-Encoding Transformation in Algebraic List-Decoding of Reedâ€“Solomon Codes. IEEE Transactions on Information Theory, 2011, 57, 633-647.	2.4	38
49	Binary Polarization Kernels From Code Decompositions. IEEE Transactions on Information Theory, 2015, 61, 2227-2239.	2.4	37
50	Efficient two-write WOM-codes. , 2010, , .		36
51	Two-dimensional interleaving schemes with repetitions: constructions and bounds. IEEE Transactions on Information Theory, 2002, 48, 428-457.	2.4	34
52	A nearly optimal construction of flash codes. , 2009, , .		33
53	Error-Correcting Codes in Projective Space. , 2008, , .		32
54	Proof of a conjecture of McEliece regarding the expansion index of the minimal trellis. IEEE Transactions on Information Theory, 1996, 42, 2027-2033.	2.4	30

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55	Universal Hashing for Information-Theoretic Security. Proceedings of the IEEE, 2015, 103, 1781-1795.	21.3	30
56	Multiple-write WOM-codes. , 2010, , .		29
57	Multidimensional flash codes. , 2008, , .		28
58	Polar Coding for the Binary Erasure Channel With Deletions. IEEE Communications Letters, 2017, 21, 710-713.	4.1	28
59	Nonlinear dynamics of iterative decoding systems: analysis and applications. IEEE Transactions on Information Theory, 2006, 52, 1366-1384.	2.4	26
60	Constructing polar codes for non-binary alphabets and MACs. , 2012, , .		26
61	Multiple Error-Correcting WOM-Codes. IEEE Transactions on Information Theory, 2012, 58, 2220-2230.	2.4	25
62	Algebraic list-decoding on the operator channel. , 2010, , .		24
63	Resolving the Existence of Full-Rank Tilings of Binary Hamming Spaces. SIAM Journal on Discrete Mathematics, 2004, 18, 382-387.	0.8	23
64	Generalized Sphere Packing Bound. IEEE Transactions on Information Theory, 2015, 61, 2313-2334.	2.4	23
65	On q-analogs of Steiner systems and covering designs. Advances in Mathematics of Communications, 2011, 5, 161-176.	0.7	23
66	Joint equalization and coding for intersymbol interference channels. IEEE Transactions on Information Theory, 1997, 43, 409-425.	2.4	22
67	Improved Probabilistic Bounds on Stopping Redundancy. IEEE Transactions on Information Theory, 2008, 54, 1749-1753.	2.4	22
68	Explicit capacity-achieving coding scheme for the Gaussian wiretap channel. , 2014, , .		22
69	Binary Linear Codes with Optimal Scaling: Polar Codes with Large Kernels. , 2018, , .		22
70	Non-binary WOM-codes for multilevel flash memories. , 2011, , .		21
71	Increasing the speed of polar list decoders. , 2014, , .		21
72	Asymptotically optimal sticky-insertion-correcting codes with efficient encoding and decoding. , 2017, , .		21

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73	List-decoding of subspace codes and rank-metric codes up to Singleton bound. , 2012, , .		20
74	Binary Linear Codes With Optimal Scaling: Polar Codes With Large Kernels. IEEE Transactions on Information Theory, 2021, 67, 5693-5710.	2.4	20
75	Channel upgrading for semantically-secure encryption on wiretap channels. , 2013, , .		19
76	Constructions of batch codes with near-optimal redundancy. , 2016, , .		19
77	Explicit Polar Codes with Small Scaling Exponent. , 2019, , .		19
78	Nontrivial t-designs over finite fields exist for all t. Journal of Combinatorial Theory - Series A, 2014, 127, 149-160.	0.8	18
79	Polar Coding for Deletion Channels: Theory and Implementation. , 2018, , .		18
80	Polar Codes for the Deletion Channel: Weak and Strong Polarization. , 2019, , .		18
81	The uniqueness of the Best code. IEEE Transactions on Information Theory, 1994, 40, 1693-1698.	2.4	16
82	A new sphere packing in 20 dimensions. Inventiones Mathematicae, 1995, 121, 119-133.	2.5	16
83	Permuted successive cancellation decoding for polar codes. , 2017, , .		16
84	List Decoding of ArÄ±kanâ€™s PAC Codes. , 2020, , .		16
85	On codes that correct asymmetric errors with graded magnitude distribution. , 2011, , .		15
86	Linearity and complements in projective space. Linear Algebra and Its Applications, 2013, 438, 57-70.	0.9	14
87	Improved schemes for asymptotically optimal repair of MDS codes. , 2017, , .		14
88	Codes Correcting Limited-Shift Errors in Racetrack Memories. , 2018, , .		14
89	List Decoding of ArÄ±kanâ€™s PAC Codes. Entropy, 2021, 23, 841.	2.2	14
90	Bounds on the dimension of codes and subcodes with prescribed contraction index. Linear Algebra and Its Applications, 1990, 142, 237-261.	0.9	13

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91	Low-Latency Factorization Architecture for Algebraic Soft-Decision Decoding of Reedâ€“Solomon Codes. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2007, 15, 1225-1238.	3.1	13
92	Codes correcting position errors in racetrack memories. , 2017, , .		13
93	A Complexity Reducing Transformation for the Lee-O'Sullivan Interpolation Algorithm. , 2007, , .		12
94	New Bounds on the Capacity of Multidimensional Run-Length Constraints. IEEE Transactions on Information Theory, 2011, 57, 4373-4382.	2.4	12
95	Coding for the Lee and Manhattan Metrics With Weighing Matrices. IEEE Transactions on Information Theory, 2013, 59, 6712-6723.	2.4	12
96	Algebraic List-Decoding of Subspace Codes. IEEE Transactions on Information Theory, 2013, 59, 7814-7828.	2.4	12
97	Polar codes for channels with deletions. , 2017, , .		12
98	Title is missing!. International Mathematics Research Notices, 2004, 2004, 2271.	1.0	11
99	Multiple error-correcting WOM-codes. , 2010, , .		10
100	On Efficient Decoding of Polar Codes with Large Kernels. , 2017, , .		10
101	Coding for racetrack memories. , 2017, , .		10
102	On the parallel programming of flash memory cells. , 2010, , .		9
103	Optimal tristance anticodes in certain graphs. Journal of Combinatorial Theory - Series A, 2006, 113, 189-224.	0.8	8
104	Multiplicity assignments for algebraic soft-decoding of Reed-Solomon codes using the method of types. , 2009, , .		8
105	Algebraic list-decoding of subspace codes with multiplicities. , 2011, , .		8
106	Minimum storage regenerating codes for all parameters. , 2016, , .		8
107	Cooling Codes: Thermal-Management Coding for High-Performance Interconnects. IEEE Transactions on Information Theory, 2018, 64, 3062-3085.	2.4	8
108	A Deterministic Algorithm for Computing the Weight Distribution of Polar Codes. , 2021, , .		8

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109	Two new bounds on the size of binary codes with a minimum distance of three. Designs, Codes, and Cryptography, 1995, 6, 219-227.	1.6	7
110	Full-Rank Tilings of $mathbbF^8_!2$ Do Not Exist. SIAM Journal on Discrete Mathematics, 2003, 16, 390-392.	0.8	7
111	Storage coding for wear leveling in flash memories. , 2009, , .		7
112	Explicit capacity achieving codes for defective memories. , 2015, , .		7
113	New Constructions of MDS Codes with Asymptotically Optimal Repair. , 2018, , .		7
114	Dense error-correcting codes in the Lee metric. , 2010, , .		6
115	Locally-Constrained de Bruijn Codes: Properties, Enumeration, Code Constructions, and Applications. IEEE Transactions on Information Theory, 2021, 67, 7857-7875.	2.4	6
116	An Application of Ramsey Theory to Coding for the Optical Channel. SIAM Journal on Discrete Mathematics, 2005, 19, 921-937.	0.8	5
117	Generalized sphere packing bound: Applications. , 2014, , .		5
118	On the Number of Distinct k-Decks: Enumeration and Bounds. , 2019, , .		5
119	Convolutional Decoding of Polar Codes. , 2019, , .		5
120	Explicit and Efficient WOM Codes of Finite Length. IEEE Transactions on Information Theory, 2020, 66, 2669-2682.	2.4	5
121	Low-Power Cooling Codes With Efficient Encoding and Decoding. IEEE Transactions on Information Theory, 2020, 66, 4804-4818.	2.4	5
122	Polar Codes for the Deletion Channel: Weak and Strong Polarization. IEEE Transactions on Information Theory, 2022, 68, 2239-2265.	2.4	5
123	Density doubling, double-circulants, and new sphere packings. Transactions of the American Mathematical Society, 1999, 351, 271-283.	0.9	4
124	On the Performance of Multivariate Interpolation Decoding of Reed-Solomon Codes. , 2006, , .		4
125	Distributed storage with communication costs. , 2011, , .		4
126	Cooling codes: Thermal-management coding for high-performance interconnects. , 2017, , .		4

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127	Polar Coding for Channels With Deletions. IEEE Transactions on Information Theory, 2021, 67, 7081-7095.	2.4	4
128	Codes for Endurance-Limited Memories. , 2018, , .		4
129	Parallelism Versus Latency in Simplified Successive-Cancellation Decoding of Polar Codes. IEEE Transactions on Wireless Communications, 2022, 21, 3909-3920.	9.2	4
130	Generalized sphere packing bound: Basic principles. , 2014, , .		3
131	Algebraic List-Decoding in Projective Space: Decoding With Multiplicities and Rank-Metric Codes. IEEE Transactions on Information Theory, 2019, 65, 1085-1100.	2.4	3
132	Hardness of Successive-Cancellation Decoding of Linear Codes. , 2020, , .		3
133	Explicit Baranyai partitions for quadruples, Part I: Quadrupling constructions. Journal of Combinatorial Designs, 2021, 29, 447-481.	0.6	3
134	Improved Schemes for Asymptotically Optimal Repair of MDS Codes. IEEE Transactions on Information Theory, 2021, 67, 5051-5068.	2.4	3
135	New Bounds on the Capacity of Multi-dimensional RLL-Constrained Systems. Lecture Notes in Computer Science, 2006, , 225-234.	1.3	3
136	Factorization Architecture by Direct Root Computation for Algebraic Soft-Decision Decoding of Reed-Solomon Codes. , 2007, , .		2
137	Optimal interleaving algorithms for generalized concatenated codes. , 2009, , .		2
138	Rewriting Codes for Flash Memories. IEEE Transactions on Information Theory, 2014, 60, 964-975.	2.4	2
139	Coding for tag collision recovery. , 2015, , .		2
140	Codes for RAID solutions based upon SSDs. , 2015, , .		2
141	Low-Complexity Hybrid ARQ Scheme for Polar Codes with Higher-Order Modulation. , 2017, , .		2
142	Coding for the Lee and Manhattan metrics with weighing matrices. , 2013, , .		1
143	Low-Power Cooling Codes with Efficient Encoding and Decoding. , 2018, , .		1
144	Endurance-Limited Memories with Informed Decoder. , 2019, , .		1

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145	Domination mappings into the hamming ball: Existence, constructions, and algorithms. Advances in Mathematics of Communications, 2023, 17, 1027-1059.	0.7	1
146	Parallelism versus Latency in Simplified Successive-Cancellation Decoding of Polar Codes. , 2021, , .		1
147	List Decoding of Polar Codes: How Large Should the List Be to Achieve ML Decoding?. , 2021, , .		1
148	Endurance-Limited Memories: Capacity and Codes. IEEE Transactions on Information Theory, 2022, 68, 1599-1613.	2.4	1
149	Minimum Distance of Codes and Their Branching Program Complexity. , 2006, , .		0
150	Direct Root Computation Architecture for Algebraic Soft-Decision Decoding of Reed-Solomon Codes. , 2007, , .		0
151	The Scientific Legacy of Ralf Koetter. IEEE Transactions on Information Theory, 2011, 57, 589-592.	2.4	0
152	Polar Codes with Balanced Codewords. , 2020, , .		0