

Paul M B Vitányi

List of Publications by Year in descending order

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142
papers

8,038
citations

201385

27
h-index

82410

72
g-index

152
all docs

152
docs citations

152
times ranked

3488
citing authors

#	ARTICLE	IF	CITATIONS
1	The Google Similarity Distance. IEEE Transactions on Knowledge and Data Engineering, 2007, 19, 370-383.	4.0	1,373
2	An Introduction to Kolmogorov Complexity and Its Applications. , 1997, , .		1,072
3	An Introduction to Kolmogorov Complexity and Its Applications. Texts in Computer Science, 2019, , .	0.5	795
4	The Similarity Metric. IEEE Transactions on Information Theory, 2004, 50, 3250-3264.	1.5	766
5	An Introduction to Kolmogorov Complexity and Its Applications. Texts in Computer Science, 2008, , .	0.5	682
6	An Introduction to Kolmogorov Complexity and Its Applications. , 1993, , .		439
7	Simplicity: a unifying principle in cognitive science?. Trends in Cognitive Sciences, 2003, 7, 19-22.	4.0	274
8	Algorithmic Clustering of Music Based on String Compression. Computer Music Journal, 2004, 28, 49-67.	0.3	196
9	Minimum description length induction, Bayesianism, and Kolmogorov complexity. IEEE Transactions on Information Theory, 2000, 46, 446-464.	1.5	170
10	â€œIdeal learningâ€™ of natural language: Positive results about learning from positive evidence. Journal of Mathematical Psychology, 2007, 51, 135-163.	1.0	165
11	Atomic shared register access by asynchronous hardware. , 1986, , .		107
12	Distributed match-making. Algorithmica, 1988, 3, 367-391.	1.0	92
13	Kolmogorov's Structure Functions and Model Selection. IEEE Transactions on Information Theory, 2004, 50, 3265-3290.	1.5	91
14	Algorithmic statistics. IEEE Transactions on Information Theory, 2001, 47, 2443-2463.	1.5	84
15	Locality, Communication, and Interconnect Length in Multicomputers. SIAM Journal on Computing, 1988, 17, 659-672.	0.8	72
16	The probabilistic analysis of language acquisition: Theoretical, computational, and experimental analysis. Cognition, 2011, 120, 380-390.	1.1	59
17	Learning Simple Concepts under Simple Distributions. SIAM Journal on Computing, 1991, 20, 911-935.	0.8	58
18	The miraculous universal distribution. Mathematical Intelligencer, 1997, 19, 7-15.	0.1	58

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19	The generalized universal law of generalization. Journal of Mathematical Psychology, 2003, 47, 346-369.	1.0	56
20	Kolmogorov Complexity and its Applications. , 1990, , 187-254.		53
21	Title is missing!. Journal of Logic, Language and Information, 2003, 12, 497-529.	0.4	53
22	Inductive reasoning and kolmogorov complexity. Journal of Computer and System Sciences, 1992, 44, 343-384.	0.9	48
23	How to share concurrent wait-free variables. Journal of the ACM, 1996, 43, 723-746.	1.8	47
24	Average case complexity under the universal distribution equals worst-case complexity. Information Processing Letters, 1992, 42, 145-149.	0.4	46
25	Applying MDL to learn best model granularity. Artificial Intelligence, 2000, 121, 1-29.	3.9	46
26	Normalized Information Distance. , 2009, , 45-82.		42
27	Tape versus queue and stacks: The lower bounds. Information and Computation, 1988, 78, 56-85.	0.5	39
28	Sexually reproducing cellular automata. Mathematical Biosciences, 1973, 18, 23-54.	0.9	34
29	On the importance of having an identity or, is consensus really universal?. Distributed Computing, 2006, 18, 167-176.	0.7	33
30	Randomized naming using wait-free shared variables. Distributed Computing, 1998, 11, 113-124.	0.7	29
31	Kolmogorov Random Graphs and the Incompressibility Method. SIAM Journal on Computing, 1999, 29, 590-599.	0.8	28
32	Bounded concurrent timestamp systems using vector clocks. Journal of the ACM, 2002, 49, 101-126.	1.8	28
33	Information Distance in Multiples. IEEE Transactions on Information Theory, 2011, 57, 2451-2456.	1.5	28
34	A Fast Quartet tree heuristic for hierarchical clustering. Pattern Recognition, 2011, 44, 662-677.	5.1	28
35	Normalized Compression Distance of Multisets with Applications. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2015, 37, 1602-1614.	9.7	28
36	Wait-free test-and-set. Lecture Notes in Computer Science, 1992, , 85-94.	1.0	26

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37	Reversible simulation of irreversible computation. <i>Physica D: Nonlinear Phenomena</i> , 1998, 120, 168-176.	1.3	25
38	Nonapproximability of the normalized information distance. <i>Journal of Computer and System Sciences</i> , 2011, 77, 738-742.	0.9	25
39	How well can a graph be n-colored?. <i>Discrete Mathematics</i> , 1981, 34, 69-80.	0.4	24
40	ALGORITHMIC INFORMATION THEORY. , 2008, , 281-317.		24
41	Rate Distortion and Denoising of Individual Data Using Kolmogorov Complexity. <i>IEEE Transactions on Information Theory</i> , 2010, 56, 3438-3454.	1.5	24
42	A New Approach to Formal Language Theory by Kolmogorov Complexity. <i>SIAM Journal on Computing</i> , 1995, 24, 398-410.	0.8	23
43	Structure of growth in Lindenmayer systems. <i>Proceedings of the Koninklijke Nederlandse Akademie Van Wetenschappen Series A, Indagationes Mathematicae</i> , 1973, 76, 247-253.	0.3	20
44	Automatic Extraction of Meaning from the Web. , 2006, , .		20
45	Atomic multireader register. <i>Lecture Notes in Computer Science</i> , 1988, , 278-296.	1.0	19
46	The average-case area of Heilbronn-type triangles*. <i>Random Structures and Algorithms</i> , 2002, 20, 206-219.	0.6	19
47	The Power of the Queue. <i>SIAM Journal on Computing</i> , 1992, 21, 697-712.	0.8	18
48	Language Learning From Positive Evidence, Reconsidered: A Simplicity-Based Approach. <i>Topics in Cognitive Science</i> , 2013, 5, 35-55.	1.1	18
49	Applications of Kolmogorov Complexity in the Theory of Computation. , 1990, , 147-203.		17
50	Thermodynamics of computation and information distance. , 1993, , .		17
51	Time and space bounds for reversible simulation. <i>Journal of Physics A</i> , 2001, 34, 6821-6830.	1.6	16
52	Similarity of Objects and the Meaning of Words. <i>Lecture Notes in Computer Science</i> , 2006, , 21-45.	1.0	16
53	How to share concurrent asynchronous wait-free variables. <i>Lecture Notes in Computer Science</i> , 1989, , 488-505.	1.0	15
54	Space-efficient Routing Tables for Almost All Networks and the Incompressibility Method. <i>SIAM Journal on Computing</i> , 1999, 28, 1414-1432.	0.8	15

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55	New applications of the incompressibility method: Part II. Theoretical Computer Science, 2000, 235, 59-70.	0.5	15
56	A lower bound on the average-case complexity of shellsort. Journal of the ACM, 2000, 47, 905-911.	1.8	15
57	Sharpening Occam's razor. Information Processing Letters, 2003, 85, 267-274.	0.4	15
58	Distributed match-making for processes in computer networks (preliminary version). , 1985, , .		14
59	How Incomputable Is Kolmogorov Complexity?. Entropy, 2020, 22, 408.	1.1	14
60	A discipline of evolutionary programming. Theoretical Computer Science, 2000, 241, 3-23.	0.5	13
61	Similarity and denoising. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2013, 371, 20120091.	1.6	13
62	Randomized two-process wait-free test-and-set. Distributed Computing, 2002, 15, 127-135.	0.7	12
63	An $n^{1.618}$ lower bound on the time to simulate one queue or two pushdown stores by one tape. Information Processing Letters, 1985, 21, 147-152.	0.4	11
64	Square time is optimal for simulation of one pushdown store or one queue by an oblivious one-head tape unit. Information Processing Letters, 1985, 21, 87-91.	0.4	11
65	An Optimal Simulation of Counter Machines. SIAM Journal on Computing, 1985, 14, 1-33.	0.8	11
66	Optimality of wait-free atomic multiwriter variables. Information Processing Letters, 1992, 43, 107-112.	0.4	11
67	The power of the queue. Lecture Notes in Computer Science, 1986, , 219-233.	1.0	11
68	Depth as Randomness Deficiency. Theory of Computing Systems, 2009, 45, 724-739.	0.7	10
69	Approximating Rate-Distortion Graphs of Individual Data: Experiments in Lossy Compression and Denoising. IEEE Transactions on Computers, 2012, 61, 395-407.	2.4	10
70	Optimal routing tables. , 1996, , .		9
71	Average-case analysis of algorithms using Kolmogorov complexity. Journal of Computer Science and Technology, 2000, 15, 402-408.	0.9	9
72	Conditional Kolmogorov complexity and universal probability. Theoretical Computer Science, 2013, 501, 93-100.	0.5	9

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73	Identification of probabilities. Journal of Mathematical Psychology, 2017, 76, 13-24.	1.0	9
74	A proof technique for register atomicity. Lecture Notes in Computer Science, 1988, , 286-303.	1.0	9
75	On two-tape real-time computation and queues. Journal of Computer and System Sciences, 1984, 29, 303-311.	0.9	8
76	Kolmogorov complexity arguments in combinatorics. Journal of Combinatorial Theory - Series A, 1994, 66, 226-236.	0.5	8
77	Mutual search. Journal of the ACM, 1999, 46, 517-536.	1.8	8
78	Growth Functions Associated with Biological Development. American Mathematical Monthly, 1976, 83, 1.	0.2	7
79	The Power and Perils of MDL. , 2007, , .		7
80	Philosophical issues in Kolmogorov complexity. Lecture Notes in Computer Science, 1992, , 1-15.	1.0	7
81	Algorithmic probability. Scholarpedia Journal, 2007, 2, 2572.	0.3	7
82	Average-Case Complexity of Shellsort (Preliminary Version). Lecture Notes in Computer Science, 1999, , 453-462.	1.0	7
83	Deterministic Lindenmayer languages, nonterminals and homomorphisms. Theoretical Computer Science, 1976, 2, 49-71.	0.5	6
84	Stable string languages of lindenmayer systems. Information and Control, 1978, 37, 134-149.	1.3	6
85	On the simulation of many storage heads by one. Theoretical Computer Science, 1984, 34, 157-168.	0.5	6
86	Two heads are better than two tapes. Journal of the ACM, 1997, 44, 237-256.	1.8	6
87	Individual communication complexity. Journal of Computer and System Sciences, 2007, 73, 973-985.	0.9	6
88	Meaningful Information. Lecture Notes in Computer Science, 2002, , 588-599.	1.0	6
89	Analysis of Sorting Algorithms by Kolmogorov Complexity (A Survey). , 2007, , 209-232.		6
90	Growth Functions Associated with Biological Development. American Mathematical Monthly, 1976, 83, 1-15.	0.2	5

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91	Area penalty for sublinear signal propagation delay on chip. , 1985, , .		5
92	On inverse deterministic pushdown transductions. Journal of Computer and System Sciences, 1978, 16, 423-444.	0.9	4
93	An Optimal Simulation of Counter Machines: The ACM Case. SIAM Journal on Computing, 1985, 14, 34-40.	0.8	4
94	Counting is easy. Journal of the ACM, 1988, 35, 985-1000.	1.8	4
95	A new approach to formal language theory by kolmogorov complexity. Lecture Notes in Computer Science, 1989, , 506-520.	1.0	4
96	New Applications of the Incompressibility Method. Computer Journal, 1999, 42, 287-293.	1.5	4
97	On Algorithmic Rate-Distortion Function. , 2006, , .		4
98	On a problem in the collective behavior of automata. Discrete Mathematics, 1976, 14, 99-101.	0.4	3
99	Context sensitive table linden mayer languages and a relation to the LBA problem. Information and Control, 1977, 33, 217-226.	1.3	3
100	Weighted distributed match-making. Lecture Notes in Computer Science, 1988, , 361-368.	1.0	3
101	A note on weighted distributed match-making. Mathematical Systems Theory, 1992, 25, 123-140.	0.5	3
102	Tolstoyâ€™s Mathematics in War and Peace. Mathematical Intelligencer, 2013, 35, 71-75.	0.1	3
103	Exact Expression For Information Distance. IEEE Transactions on Information Theory, 2017, 63, 4725-4728.	1.5	3
104	Simple Wait-Free Multireader Registers. Lecture Notes in Computer Science, 2002, , 118-132.	1.0	3
105	On prediction by data compression. Lecture Notes in Computer Science, 1997, , 14-30.	1.0	3
106	About the Lifespan of Peer to Peer Networks. Lecture Notes in Computer Science, 2006, , 290-304.	1.0	3
107	Development, Growth and Time. , 1986, , 431-444.		3
108	On the power of real-time two-way multihead finite automata with jumps. Information Processing Letters, 1984, 19, 31-35.	0.4	2

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109	Two heads are better than two tapes. , 1994, , .		2
110	Universal generalization and universal inter-item confusability. Behavioral and Brain Sciences, 2001, 24, 659-660.	0.4	2
111	On a Generalized Ruin Problem. Lecture Notes in Computer Science, 2001, , 181-191.	1.0	2
112	Average-Case Analysis Using Kolmogorov Complexity. , 1997, , 157-169.		2
113	Physics and the new computation. Lecture Notes in Computer Science, 1995, , 106-128.	1.0	2
114	A note on the recursive enumerability of some classes of recursively enumerable languages. Information Sciences, 1978, 14, 89-91.	4.0	1
115	Time-bounded incompressibility of compressible strings and sequences. Information Processing Letters, 2009, 109, 1055-1059.	0.4	1
116	Registers. , 2008, , 761-764.		1
117	Applications of algorithmic information theory. Scholarpedia Journal, 2007, 2, 2658.	0.3	1
118	Turing machine. Scholarpedia Journal, 2009, 4, 6240.	0.3	1
119	Sharpening Occam's Razor. Lecture Notes in Computer Science, 2002, , 411-419.	1.0	1
120	Individual Communication Complexity. Lecture Notes in Computer Science, 2004, , 19-30.	1.0	1
121	Andrey Nikolaevich Kolmogorov. Scholarpedia Journal, 2007, 2, 2798.	0.3	1
122	The simple roots of real-time computation hierarchies. Lecture Notes in Computer Science, 1984, , 486-489.	1.0	1
123	Randomized wait-free naming. Lecture Notes in Computer Science, 1994, , 83-91.	1.0	1
124	Web Similarity in Sets of Search Terms Using Database Queries. SN Computer Science, 2020, 1, 1.	2.3	1
125	Fast Phylogeny of SARS-CoV-2 by Compression. Entropy, 2022, 24, 439.	1.1	1
126	Algorithmique et structures de données. European Journal of Operational Research, 1980, 5, 148-149.	3.5	0

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127	Achievable high scores of $\hat{\mu}$ -moves and running times in DPDA computations. Information Processing Letters, 1980, 10, 83-86.	0.4	0
128	Relativized obliviousness. , 1980, , 665-672.		0
129	Average-case analysis via incompressibility. Lecture Notes in Computer Science, 1997, , 38-50.	1.0	0
130	The erdős graph and the beast. Mathematical Intelligencer, 1999, 21, 54-63.	0.1	0
131	Registers. , 2016, , 1808-1812.		0
132	On the average-case complexity of Shellsort. Random Structures and Algorithms, 2018, 52, 354-363.	0.6	0
133	Logical depth for reversible Turing machines with an application to the rate of decrease in logical depth for general Turing machines. Theoretical Computer Science, 2019, 778, 78-80.	0.5	0
134	Towards an Algorithmic Statistics. Lecture Notes in Computer Science, 2000, , 41-55.	1.0	0
135	The Incompressibility Method. Lecture Notes in Computer Science, 2000, , 36-53.	1.0	0
136	The Quantum Computing Challenge. Lecture Notes in Computer Science, 2001, , 219-233.	1.0	0
137	Algorithmic arguments in physics of computation. Lecture Notes in Computer Science, 1995, , 315-333.	1.0	0
138	Genetic fitness optimization using rapidly mixing Markov chains. Lecture Notes in Computer Science, 1996, , 67-82.	1.0	0
139	Resource-Bounded Complexity. , 1997, , 459-520.		0
140	Algorithmic Probability. , 1997, , 239-314.		0
141	The Incompressibility Method. , 1997, , 379-457.		0
142	Inductive Reasoning. , 1997, , 315-377.		0