Benjamin Doerr

List of Publications by Year
in descending order

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108 papers	2,739 citations	304602 22 h-index	265120 42 g-index
111 all docs	111 docs citations	111 times ranked	409 citing authors

#	Article	IF	Citations
1	Multiplicative Drift Analysis. Algorithmica, 2012, 64, 673-697.	1.0	187
2	Theory of Randomized Search Heuristics. Theoretical Computer Science, 2011, , .	1.2	175
3	From black-box complexity to designing new genetic algorithms. Theoretical Computer Science, 2015, 567, 87-104.	0.5	166
4	Fast genetic algorithms. , 2017, , .		143
5	Optimal Static and Self-Adjusting Parameter Choices for the $$(1+(lambda ,lambda))$$ (1 + (Î» , Î»)) Genetic Algorithm. Algorithmica, 2018, 80, 1658-1709.	1.0	96
6	Crossover can provably be useful in evolutionary computation. Theoretical Computer Science, 2012, 425, 17-33.	0.5	81
7	Adaptive Drift Analysis. Algorithmica, 2013, 65, 224-250.	1.0	80
8	Mutation Rate Matters Even When Optimizing Monotonic Functions. Evolutionary Computation, 2013, 21, 1-27.	2.3	67
9	Optimizing linear functions with the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:mo stretchy="false">(</mml:mo><mml:mn>1</mml:mn><mml:mo>+</mml:mo><mml:mi>Î»</mml:mi><mml:mo) Tj ETQq1 1 0.784314 rgB different instances. Theoretical Computer Science, 2015, 561, 3-23.	0.5	64
10	Optimal Fixed and Adaptive Mutation Rates for the LeadingOnes Problem. , 2010, , 1-10.		54
11	Probabilistic Tools for the Analysis of Randomized Optimization Heuristics. Natural Computing Series, 2020, , 1-87.	2.2	50
12	Faster black-box algorithms through higher arity operators. , 2011, , .		47
13	Runtime analysis of the (1 + (Î», Î»)) genetic algorithm on random satisfiable 3-CNF formulas. , 2017, , .		46
14	Analyzing randomized search heuristics via stochastic domination. Theoretical Computer Science, 2019, 773, 115-137.	0.5	45
15	Analyzing Randomized Search Heuristics: Tools from Probability Theory. Theoretical Computer Science, 2011, , 1-20.	1.2	42
16	The ($$1+lambda $$ 1 + Î»)ÂEvolutionary Algorithm with Self-Adjusting Mutation Rate. Algorithmica, 2019, 81, 593-631.	1.0	40
17	Speeding Up Evolutionary Algorithms through Asymmetric Mutation Operators. Evolutionary Computation, 2007, 15, 401-410.	2.3	39
18	Static and Self-Adjusting Mutation Strengths for Multi-valued Decision Variables. Algorithmica, 2018, 80, 1732-1768.	1.0	39

#	Article	IF	Citations
19	On the runtime analysis of selection hyper-heuristics with adaptive learning periods. , 2018, , .		38
20	Ranking-Based Black-Box Complexity. Algorithmica, 2014, 68, 571-609.	1.0	35
21	Optimal parameter choices via precise black-box analysis. Theoretical Computer Science, 2020, 801, 1-34.	0.5	35
22	More effective crossover operators for the all-pairs shortest path problem. Theoretical Computer Science, 2013, 471, 12-26.	0.5	31
23	A tight runtime analysis for the cGA on jump functions. , 2019, , .		31
24	Does comma selection help to cope with local optima?. , 2020, , .		30
25	Fast mutation in crossover-based algorithms. , 2020, , .		30
26	Improved analysis methods for crossover-based algorithms. , 2009, , .		27
27	Drift analysis and linear functions revisited. , 2010, , .		27
28	Tight Analysis of the (1+1)-EA for the Single Source Shortest Path Problem. Evolutionary Computation, 2011, 19, 673-691.	2.3	27
29	Sharp Bounds for Genetic Drift in Estimation of Distribution Algorithms. IEEE Transactions on Evolutionary Computation, 2020, 24, 1140-1149.	7.5	27
30	Lazy parameter tuning and control. , 2021, , .		27
31	Runtime analysis for self-adaptive mutation rates. , 2018, , .		26
32	Money for Nothing. , 2015, , .		25
33	The Impact of Random Initialization on the Runtime of Randomized Search Heuristics. Algorithmica, 2016, 75, 529-553.	1.0	25
34	Significance-Based Estimation-of-Distribution Algorithms. IEEE Transactions on Evolutionary Computation, 2020, 24, 1025-1034.	7.5	25
35	Theoretical analyses of multi-objective evolutionary algorithms on multi-modal objectives. , 2021, , .		25
36	Black-box complexities of combinatorial problems. Theoretical Computer Science, 2013, 471, 84-106.	0.5	24

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37	The Runtime of the Compact Genetic Algorithm on Jump Functions. Algorithmica, 2021, 83, 3059-3107.	1.0	24
38	Edge-based representation beats vertex-based representation in shortest path problems. , 2010, , .		23
39	A lower bound for the discrepancy of a random point set. Journal of Complexity, 2014, 30, 16-20.	0.7	23
40	A tight runtime analysis for the (Î¼ + Î») EA. , 2018, , .		23
41	Playing Mastermind with Constant-Size Memory. Theory of Computing Systems, 2014, 55, 658-684.	0.7	22
42	The efficiency threshold for the offspring population size of the (Âµ, Î») EA. , 2019, , .		22
43	Runtime Analysis for Self-adaptive Mutation Rates. Algorithmica, 2021, 83, 1012-1053.	1.0	21
44	Multiplicative up-drift. , 2019, , .		20
45	Reducing the arity in unbiased black-box complexity. Theoretical Computer Science, 2014, 545, 108-121.	0.5	19
46	An elementary analysis of the probability that a binomial random variable exceeds its expectation. Statistics and Probability Letters, 2018, 139, 67-74.	0.4	19
47	A tight runtime analysis for the (1 + (Î», Î»)) GA on leadingones. , 2019, , .		19
48	Runtime Analysis of a Heavy-Tailed $$(1+(lambda ,lambda))$$ Genetic Algorithm on Jump Functions. Lecture Notes in Computer Science, 2020, , 545-559.	1.0	19
49	Working principles of binary differential evolution. Theoretical Computer Science, 2020, 801, 110-142.	0.5	18
50	Generalized jump functions. , 2021, , .		18
51	Evolutionary algorithms and dynamic programming. Theoretical Computer Science, 2011, 412, 6020-6035.	0.5	17
52	Detecting structural breaks in time series via genetic algorithms. Soft Computing, 2017, 21, 4707-4720.	2.1	17
53	The (1 + (Î»,Î»)) GA is even faster on multimodal problems. , 2020, , .		17
54	Playing Mastermind With Many Colors. Journal of the ACM, 2016, 63, 1-23.	1.8	16

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55	The Unrestricted Black-Box Complexity of Jump Functions. Evolutionary Computation, 2016, 24, 719-744.	2.3	16
56	The unbiased black-box complexity of partition is polynomial. Artificial Intelligence, 2014, 216, 275-286.	3.9	15
57	The query complexity of a permutation-based variant of Mastermind. Discrete Applied Mathematics, 2019, 260, 28-50.	0.5	15
58	Multiplicative Up-Drift. Algorithmica, 2021, 83, 3017-3058.	1.0	15
59	Lower bounds from fitness levels made easy. , 2021, , .		15
60	Unbiased black-box complexities of jump functions. , 2014, , .		14
61	An exponential lower bound for the runtime of the compact genetic algorithm on jump functions. , 2019, , .		13
62	A rigorous runtime analysis of the 2-MMAS _{ib} on jump functions. , 2021, , .		13
63	Self-Adjusting Mutation Rates with Provably Optimal Success Rules. Algorithmica, 2021, 83, 3108-3147.	1.0	13
64	First Steps Towards a Runtime Analysis When Starting with a Good Solution. Lecture Notes in Computer Science, 2020, , 560-573.	1.0	13
65	The Query Complexity of Finding a Hidden Permutation. Lecture Notes in Computer Science, 2013, , 1-11.	1.0	13
66	From understanding genetic drift to a smart-restart parameter-less compact genetic algorithm. , 2020, , .		13
67	A Survey on Recent Progress in the Theory of Evolutionary Algorithms for Discrete Optimization. ACM Transactions on Evolutionary Learning, 2021, 1, 1-43.	2.7	13
68	Fast Mutation in Crossover-Based Algorithms. Algorithmica, 2022, 84, 1724-1761.	1.0	13
69	Monotonic functions in EC. , 2014, , .		12
70	Unbiased Black-Box Complexities of Jump Functions. Evolutionary Computation, 2015, 23, 641-670.	2.3	12
71	A Rigorous Runtime Analysis of the $$(1 + (lambda , lambda))$$ GA on Jump Functions. Algorithmica, 2022, 84, 1573-1602.	1.0	12
72	Lower bounds for the runtime of a global multi-objective evolutionary algorithm. , 2013, , .		11

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73	Does Comma Selection Help to Cope with Local Optima?. Algorithmica, 2022, 84, 1659-1693.	1.0	11
74	Improved approximation algorithms for the Minâ€“Max Selecting Items problem. Information Processing Letters, 2013, 113, 747-749.	0.4	10
75	Too fast unbiased black-box algorithms. , 2011, , .		9
76	Solving Problems with Unknown Solution Length at Almost No Extra Cost. Algorithmica, 2019, 81, 703-748.	1.0	9
77	The recovery of ridge functions on the hypercube suffers from the curse of dimensionality. Journal of Complexity, 2021, 63, 101521.	0.7	9
78	Choosing the Right Algorithm With Hints From Complexity Theory. , 2021, , .		9
79	Fixed-target runtime analysis. , 2020, , .		9
80	Working principles of binary differential evolution. , 2018, , .		8
81	A Tight Runtime Analysis for the $${(mu + lambda)}$$ÂEA. Algorithmica, 2021, 83, 1054-1095.	1.0	8
82	A simplified run time analysis of the univariate marginal distribution algorithm on LeadingOnes. Theoretical Computer Science, 2021, 851, 121-128.	0.5	8
83	Precise Runtime Analysis for Plateaus. Lecture Notes in Computer Science, 2018, , 117-128.	1.0	8
84	Stagnation Detection Meets Fast Mutation. Lecture Notes in Computer Science, 2022, , 191-207.	1.0	8
85	The Univariate Marginal Distribution Algorithm Copes Well with Deception and Epistasis. Evolutionary Computation, 2021, 29, 543-563.	2.3	7
86	Lower Bounds for Non-Elitist Evolutionary Algorithms via Negative Multiplicative Drift. Evolutionary Computation, 2021, 29, 305-329.	2.3	7
87	Precise Runtime Analysis for Plateau Functions. ACM Transactions on Evolutionary Learning, 2021, 1, 1-28.	2.7	7
88	Exponential upper bounds for the runtime of randomized search heuristics. Theoretical Computer Science, 2021, 851, 24-38.	0.5	6
89	Lower Bounds for Non-elitist Evolutionary Algorithms via Negative Multiplicative Drift. Lecture Notes in Computer Science, 2020, , 604-618.	1.0	6
90	Fixed-Target Runtime Analysis. Algorithmica, 2022, 84, 1762-1793.	1.0	4

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91	Black-box complexity. , 2014, , .		3
92	Runtime analysis of evolutionary algorithms via symmetry arguments. Information Processing Letters, 2021, 166, 106064.	0.4	3
93	Exponential Upper Bounds for the Runtime of Randomized Search Heuristics. Lecture Notes in Computer Science, 2020, , 619-633.	1.0	3
94	The univariate marginal distribution algorithm copes well with deception and epistasis. , 2020, , .		3
95	Simulated annealing is a polynomial-time approximation scheme for the minimum spanning tree problem. , 2022, , .		2
96	Towards a stronger theory for permutation-based evolutionary algorithms. , 2022, , .		2
97	Guest Editorial: Theory of Evolutionary Computation. Algorithmica, 2016, 75, 425-427.	1.0	1
98	Improved Protocols and Hardness Results for the Two-Player Cryptogenography Problem. IEEE Transactions on Information Theory, 2020, 66, 5729-5741.	1.5	1
99	Runtime analysis via symmetry arguments. , 2021, , .		1
100	On negative dependence properties of Latin hypercube samples and scrambled nets. Journal of Complexity, 2021, 67, 101589.	0.7	1
101	Sharp bounds for genetic drift in estimation of distribution algorithms (Hot-off-the-press track at) Tj ETQq1 1 0.784314 rgBT /Overloc		1
102	An Extended Jump Functions Benchmark for the Analysis of Randomized Search Heuristics. Algorithmica, 2024, 86, 1-32.	1.0	1
103	The unrestricted black-box complexity of jump functions. , 2017, , .		0
104	Theory for non-theoreticians. , 2018, , .		0
105	Theory for non-theoreticians. , 2019, , .		0
106	A gentle introduction to theory (for non-theoreticians). , 2021, , .		0
107	A gentle introduction to theory (for non-theoreticians). , 2020, , .		0
108	Lower Bounds from Fitness Levels Made Easy. Algorithmica, 2024, 86, 367-395.	1.0	0