Christian Blum

List of Publications by Citations

169 papers	**7,209** citations	**26** h-index	**84** g-index
197 ext. papers	**8,505** ext. citations	**3.9** avg, IF	**6.55** L-index

#	Paper	IF	Citations
169	Metaheuristics in combinatorial optimization. *ACM Computing Surveys*, **2003**, 35, 268-308	13.4	1969
168	Ant colony optimization theory: A survey. *Theoretical Computer Science*, **2005**, 344, 243-278	1.1	1400
167	Ant colony optimization: Introduction and recent trends. *Physics of Life Reviews*, **2005**, 2, 353-373	2.1	613
166	Hybrid metaheuristics in combinatorial optimization: A survey. *Applied Soft Computing Journal*, **2011**, 11, 4135-4151	7.5	479
165	Beam-ACO Hybridizing ant colony optimization with beam search: an application to open shop scheduling. *Computers and Operations Research*, **2005**, 32, 1565-1591	4.6	266
164	The hyper-cube framework for ant colony optimization. *IEEE Transactions on Systems, Man, and Cybernetics*, **2004**, 34, 1161-72		235
163	An ant colony optimization algorithm for continuous optimization: application to feed-forward neural network training. *Neural Computing and Applications*, **2007**, 16, 235-247	4.8	186
162	Swarm Intelligence in Optimization. *Natural Computing Series*, **2008**, 43-85	2.5	171
161	An Ant Colony Optimization Algorithm for Shop Scheduling Problems. *Mathematical Modelling and Algorithms*, **2004**, 3, 285-308		164
160	Automated reconstruction of dendritic and axonal trees by global optimization with geometric priors. *Neuroinformatics*, **2011**, 9, 279-302	3.2	95
159	Beam-ACO for the travelling salesman problem with time windows. *Computers and Operations Research*, **2010**, 37, 1570-1583	4.6	84
158	Training feed-forward neural networks with ant colony optimization: an application to pattern classification **2005**,		78
157	On solving the assembly line worker assignment and balancing problem via beam search. *Computers and Operations Research*, **2011**, 38, 328-339	4.6	72
156	Beam-ACO for Simple Assembly Line Balancing. *INFORMS Journal on Computing*, **2008**, 20, 618-627	2.4	59
155	An iterated greedy algorithm for the large-scale unrelated parallel machines scheduling problem. *Computers and Operations Research*, **2013**, 40, 1829-1841	4.6	56
154	Search bias in ant colony optimization: on the role of competition-balanced systems. *IEEE Transactions on Evolutionary Computation*, **2005**, 9, 159-174	15.6	55
153	Hybrid Metaheuristics: An Introduction. *Studies in Computational Intelligence*, **2008**, 1-30	0.8	53

152	A population-based iterated greedy algorithm for the minimum weight vertex cover problem. *Applied Soft Computing Journal*, **2012**, 12, 1632-1639	7.5	51
151	New metaheuristic approaches for the edge-weighted k-cardinality tree problem. *Computers and Operations Research*, **2005**, 32, 1355-1377	4.6	48
150	Construct, Merge, Solve & Adapt A new general algorithm for combinatorial optimization. *Computers and Operations Research*, **2016**, 68, 75-88	4.6	46
149	The travelling salesman problem with time windows: Adapting algorithms from travel-time to makespan optimization. *Applied Soft Computing Journal*, **2013**, 13, 3806-3815	7.5	46
148	Beam search for the longest common subsequence problem. *Computers and Operations Research*, **2009**, 36, 3178-3186	4.6	41
147	Distributed graph coloring: an approach based on the calling behavior of Japanese tree frogs. *Swarm Intelligence*, **2012**, 6, 117-150	3	38
146	An ant colony optimization algorithm for DNA sequencing by hybridization. *Computers and Operations Research*, **2008**, 35, 3620-3635	4.6	33
145	ACO vs EAs for solving a real-world frequency assignment problem in GSM networks **2007**,		31
144	**2016**,		30
143	Variable neighbourhood search for the variable sized bin packing problem. *Computers and Operations Research*, **2012**, 39, 1097-1108	4.6	26
142	Ant colony optimization for FOP shop scheduling: a case study on different pheromone representations		26
141	Revisiting dynamic programming for finding optimal subtrees in trees. *European Journal of Operational Research*, **2007**, 177, 102-115	5.6	22
140	An algorithm based on ant colony optimization for the minimum connected dominating set problem. *Applied Soft Computing Journal*, **2019**, 80, 672-686	7.5	18
139	Ant colony optimization for multicasting in static wireless ad-hoc networks. *Swarm Intelligence*, **2009**, 3, 125-148	3	18
138	An Artificial Bee Colony Algorithm for the Unrelated Parallel Machines Scheduling Problem. *Lecture Notes in Computer Science*, **2012**, 143-152	0.9	18
137	**2009**,		17
136	Local search algorithms for the k-cardinality tree problem. *Discrete Applied Mathematics*, **2003**, 128, 511-540		17
135	Large neighbourhood search applied to the efficient solution of spatially explicit strategic supply chain management problems. *Computers and Chemical Engineering*, **2013**, 49, 114-126	4	16

134	Minimum energy broadcasting in wireless sensor networks: An ant colony optimization approach for a realistic antenna model. *Applied Soft Computing Journal*, **2011**, 11, 5684-5694	7.5	16
133	ACO Applied to Group Shop Scheduling: A Case Study on Intensification and Diversification. *Lecture Notes in Computer Science*, **2002**, 14-27	0.9	16
132	Deception in Ant Colony Optimization. *Lecture Notes in Computer Science*, **2004**, 118-129	0.9	16
131	When Model Bias Is Stronger than Selection Pressure. *Lecture Notes in Computer Science*, **2002**, 893-902	0.9	16
130	A hybrid algorithmic model for the minimum weight dominating set problem. *Simulation Modelling Practice and Theory*, **2016**, 64, 57-68	3.9	15
129	GRASP with path-relinking for the non-identical parallel machine scheduling problem with minimising total weighted completion times. *Annals of Operations Research*, **2012**, 201, 383-401	3.2	15
128	Metaheuristic Hybrids. *Profiles in Operations Research*, **2010**, 469-496	1	15
127	Beam-ACO Applied to Assembly Line Balancing. *Lecture Notes in Computer Science*, **2006**, 96-107	0.9	15
126	Hybridizations of Metaheuristics With Branch & Bound Derivates. *Studies in Computational Intelligence*, **2008**, 85-116	0.8	15
125	Swarm Intelligence in Optimization and Robotics **2015**, 1291-1309		14
124	Finding Edge-disjoint Paths in Networks: An Ant Colony Optimization Algorithm. *Mathematical Modelling and Algorithms*, **2007**, 6, 361-391		14
123	Solving the 2D Bin Packing Problem by Means of a Hybrid Evolutionary Algorithm. *Procedia Computer Science*, **2013**, 18, 899-908	1.6	13
122	Search trajectory networks: A tool for analysing and visualising the behaviour of metaheuristics. *Applied Soft Computing Journal*, **2021**, 109, 107492	7.5	13
121	Hybrid Metaheuristics. *Computers and Operations Research*, **2010**, 37, 430-431	4.6	12
120	Search Trajectory Networks of Population-Based Algorithms in Continuous Spaces. *Lecture Notes in Computer Science*, **2020**, 70-85	0.9	12
119	Hybrid Metaheuristics. *The Artificial Intelligence: Foundationsory, and Algorithms*, **2016**,	43	12
118	Mathematical programming strategies for solving the minimum common string partition problem. *European Journal of Operational Research*, **2015**, 242, 769-777	5.6	11
117	Ant Colony Optimization for the Maximum Edge-Disjoint Paths Problem. *Lecture Notes in Computer Science*, **2004**, 160-169	0.9	11

98	Metaheuristic Hybrids. *Profiles in Operations Research*, **2019**, 385-417	1	7
97	Adding Negative Learning to Ant Colony Optimization: A Comprehensive Study. *Mathematics*, **2021**, 9, 361	2.3	7
96	FrogCOL and FrogMIS: new decentralized algorithms for finding large independent sets in graphs. *Swarm Intelligence*, **2015**, 9, 205-227	3	6
95	Hybrid techniques based on solving reduced problem instances for a longest common subsequence problem. *Applied Soft Computing Journal*, **2018**, 62, 15-28	7.5	6
94	The weighted independent domination problem: Integer linear programming models and metaheuristic approaches. *European Journal of Operational Research*, **2018**, 265, 860-871	5.6	6
93	A matheuristic for the minimum weight rooted arborescence problem. *Journal of Heuristics*, **2015**, 21, 479-499	1.9	6
92	Hybrid Metaheuristics in Combinatorial Optimization: A Tutorial. *Lecture Notes in Computer Science*, **2012**, 1-10	0.9	6
91	Self-synchronized duty-cycling for mobile sensor networks with energy harvesting capabilities: A swarm intelligence study **2009**,		6
90	Application of CMSA to the minimum capacitated dominating set problem **2019**,		5
89	Distributed ant colony optimization for minimum energy broadcasting in sensor networks with realistic antennas. *Computers and Mathematics With Applications*, **2012**, 64, 3683-3700	2.7	5
88	Iterative Probabilistic Tree Search for the Minimum Common String Partition Problem. *Lecture Notes in Computer Science*, **2014**, 145-154	0.9	5
87	An Extended Beam-ACO Approach to the Time and Space Constrained Simple Assembly Line Balancing Problem. *Lecture Notes in Computer Science*, **2008**, 85-96	0.9	5
86	Maximising the Net Present Value of Project Schedules Using CMSA and Parallel ACO. *Lecture Notes in Computer Science*, **2019**, 16-30	0.9	5
85	Anytime algorithms for the longest common palindromic subsequence problem. *Computers and Operations Research*, **2020**, 114, 104827	4.6	5
84	Solving longest common subsequence problems via a transformation to the maximum clique problem. *Computers and Operations Research*, **2021**, 125, 105089	4.6	5
83	. *IEEE Transactions on Intelligent Transportation Systems*, **2021**, 22, 119-130	6.1	5
82	Hybrid Metaheuristics. *Springer Optimization and Its Applications*, **2011**, 305-335	0.4	5
81	An artificial bioindicator system for network intrusion detection. *Artificial Life*, **2015**, 21, 93-118	1.4	4

80	Large neighbourhood search algorithms for the founder sequence reconstruction problem. *Computers and Operations Research*, **2012**, 39, 213-224	4.6	4
79	Mining k-reachable sets in real-world networks using domination in shortcut graphs. *Journal of Computational Science*, **2017**, 22, 1-14	3.4	4
78	FlockOpt: A new swarm optimization algorithm based on collective behavior of starling birds **2011**,		4
77	A new hybrid evolutionary algorithm for the huge k-cardinality tree problem **2006**,		4
76	A Biased Random Key Genetic Algorithm with Rollout Evaluations for the Resource Constraint Job Scheduling Problem. *Lecture Notes in Computer Science*, **2019**, 549-560	0.9	4
75	Reconstructing geometrically consistent tree structures from noisy images. *Lecture Notes in Computer Science*, **2010**, 13, 291-9	0.9	4
74	Finding Longest Common Subsequences: New anytime A* search results. *Applied Soft Computing Journal*, **2020**, 95, 106499	7.5	4
73	An A? search algorithm for the constrained longest common subsequence problem. *Information Processing Letters*, **2021**, 166, 106041	0.8	4
72	Multi-level Ant Colony Optimization for DNA Sequencing by Hybridization. *Lecture Notes in Computer Science*, **2006**, 94-109	0.9	4
71	A Hybrid Ant Colony Optimization Algorithm for the Far From Most String Problem. *Lecture Notes in Computer Science*, **2014**, 1-12	0.9	3
70	A hybrid evolutionary algorithm based on solution merging for the longest arc-preserving common subsequence problem **2017**,		3
69	Iterated Greedy Algorithms for the Maximal Covering Location Problem. *Lecture Notes in Computer Science*, **2012**, 172-181	0.9	3
68	Distributed graph coloring in wireless ad hoc networks: A light-weight algorithm based on Japanese tree frogsℕalling behaviour **2011**,		3
67	Beam-ACO for the longest common subsequence problem **2010**,		3
66	Implementing a model of Japanese tree frogsℕalling behavior in sensor networks **2011**,		3
65	Ant Colony Optimization **2006**, 153-180		3
64	Beam-ACO for the Repetition-Free Longest Common Subsequence Problem. *Lecture Notes in Computer Science*, **2014**, 79-90	0.9	3
63	Construct, Merge, Solve and Adapt: Application to Unbalanced Minimum Common String Partition. *Lecture Notes in Computer Science*, **2016**, 17-31	0.9	3

62	Job Sequencing with One Common and Multiple Secondary Resources: A Problem Motivated from Particle Therapy for Cancer Treatment. *Lecture Notes in Computer Science*, **2018**, 506-518	0.9	3
61	Using Branch & Bound Concepts in Construction-Based Metaheuristics: Exploiting the Dual Problem Knowledge. *Lecture Notes in Computer Science*, **2007**, 123-139	0.9	3
60	An Improved Greedy Heuristic for the Minimum Positive Influence Dominating Set Problem in Social Networks. *Algorithms*, **2021**, 14, 79	1.8	3
59	Critical Parallelization of Local Search for MAX-SAT. *Lecture Notes in Computer Science*, **2001**, 147-158	0.9	3
58	Extension of the CMSA Algorithm **2016**,		2
57	Computational performance evaluation of two integer linear programming models for the minimum common string partition problem. *Optimization Letters*, **2016**, 10, 189-205	1.1	2
56	A Protocol for Self-Synchronized Duty-Cycling in Sensor Networks: Generic Implementation in Wiselib **2010**,		2
55	Metaheuristics in Bioinformatics: DNA Sequencing and Reconstruction **2009**, 265-286		2
54	Solving the KCT Problem: Large-Scale Neighborhood Search and Solution Merging **2009**, 407-421		2
53	Ant Colony Optimization: Introduction and Hybridizations **2007**,		2
52	On Solving a Generalized Constrained Longest Common Subsequence Problem. *Lecture Notes in Computer Science*, **2020**, 55-70	0.9	2
51	Construct, Merge, Solve and Adapt Versus Large Neighborhood Search for Solving the Multi-dimensional Knapsack Problem: Which One Works Better When?. *Lecture Notes in Computer Science*, **2017**, 60-74	0.9	2
50	Tabu Search for the Founder Sequence Reconstruction Problem: A Preliminary Study. *Lecture Notes in Computer Science*, **2009**, 1035-1042	0.9	2
49	A Greedy Heuristic for Maximizing the Lifetime of Wireless Sensor Networks Based on Disjoint Weighted Dominating Sets. *Algorithms*, **2021**, 14, 170	1.8	2
48	A comparative analysis of two matheuristics by means of merged local optima networks. *European Journal of Operational Research*, **2021**, 290, 36-56	5.6	2
47	The Weighted Independent Domination Problem: ILP Model and Algorithmic Approaches. *Lecture Notes in Computer Science*, **2017**, 201-214	0.9	1
46	A randomized population-based iterated greedy algorithm for the minimum weight dominating set problem **2015**,		1
45	Barrakuda: A Hybrid Evolutionary Algorithm for Minimum Capacitated Dominating Set Problem. *Mathematics*, **2020**, 8, 1858	2.3	1

44	Job sequencing with one common and multiple secondary resources: An A?/Beam Search based anytime algorithm. *Artificial Intelligence*, **2019**, 277, 103173	3.6	1
43	Large neighborhood search for the most strings with few bad columns problem. *Soft Computing*, **2017**, 21, 4901-4915	3.5	1
42	On solving the most strings with few bad columns problem: An ILP model and heuristics **2015**,		1
41	Hybrid Algorithms for the Minimum-Weight Rooted Arborescence Problem. *Lecture Notes in Computer Science*, **2012**, 61-72	0.9	1
40	Hybrid Algorithms for the Variable Sized Bin Packing Problem. *Lecture Notes in Computer Science*, **2010**, 16-30	0.9	1
39	Self-synchronized duty-cycling in sensor networks with energy harvesting capabilities **2009**,		1
38	Energy-efficient multicasting in wireless ad-hoc networks: An ant colony optimization approach **2008**,		1
37	Iterated local search and constructive heuristics for error correcting code design. *International Journal of Innovative Computing and Applications*, **2007**, 1, 14	0.4	1
36	Ant Colony Optimization: Introduction and Hybridizations **2007**,		1
35	Variable Neighborhood Search for the Two-Echelon Electric Vehicle Routing Problem with Time Windows. *Applied Sciences (Switzerland)*, **2022**, 12, 1014	2.6	1
34	A Heuristic Approach for Solving the Longest Common Square Subsequence Problem. *Lecture Notes in Computer Science*, **2020**, 429-437	0.9	1
33	Can Frogs Find Large Independent Sets in a Decentralized Way? Yes They Can!. *Lecture Notes in Computer Science*, **2014**, 74-85	0.9	1
32	A Hybrid Metaheuristic for the Longest Common Subsequence Problem. *Lecture Notes in Computer Science*, **2010**, 1-15	0.9	1
31	Application of Large Neighborhood Search to Strategic Supply Chain Management in the Chemical Industry. *Studies in Computational Intelligence*, **2013**, 335-352	0.8	1
30	A Randomized Iterated Greedy Algorithm for the Founder Sequence Reconstruction Problem. *Lecture Notes in Computer Science*, **2010**, 37-51	0.9	1
29	Solving the Two-Dimensional Bin Packing Problem with a Probabilistic Multi-start Heuristic. *Lecture Notes in Computer Science*, **2011**, 76-90	0.9	1
28	Minimum common string partition: on solving large-scale problem instances. *International Transactions in Operational Research*, **2020**, 27, 91-111	2.9	1
27	ILP-Based Reduced Variable Neighborhood Search for Large-Scale Minimum Common String Partition. *Electronic Notes in Discrete Mathematics*, **2018**, 66, 15-22	0.3	1

26	A Population-Based Iterated Greedy Algorithm for Maximizing Sensor Network Lifetime.. *Sensors*, **2022**, 22,	3.8	1
25	Graph search and variable neighborhood search for finding constrained longest common subsequences in artificial and real gene sequences. *Applied Soft Computing Journal*, **2022**, 108844	7.5	1
24	A new optimization model for wastewater treatment planning with a temporal component. *Chemical Engineering Research and Design*, **2020**, 136, 157-168	5.5	0
23	A New Approach for Making Use of Negative Learning in Ant Colony Optimization. *Lecture Notes in Computer Science*, **2020**, 16-28	0.9	0
22	New Constructive Heuristics for DNA Sequencing by Hybridization. *Lecture Notes in Computer Science*, **2006**, 355-365	0.9	0
21	Solving the Longest Common Subsequence Problem Concerning Non-Uniform Distributions of Letters in Input Strings. *Mathematics*, **2021**, 9, 1515	2.3	0
20	ANTS 2018 special issue: Editorial. *Swarm Intelligence*, **2019**, 13, 169-172	3	
19	ANTS 2012 special issue. *Swarm Intelligence*, **2013**, 7, 79-81	3	
18	Ant Colony Optimization for the Minimum-Weight Rooted Arborescence Problem **2015**, 1333-1343		
17	Foundations of Antcycle: Self-synchronized Duty-cycling in Mobile Sensor Networks. *Computer Journal*, **2011**, 54, 1427-1448	1.3	
16	Evaluating New Advanced Multiobjective Metaheuristics **2009**, 63-82		
15	Interpretation of a hierarchical neural network. *Lecture Notes in Computer Science*, **1997**, 651-659	0.9	
14	Diagnosis and monitoring of ulnar nerve lesions. *Lecture Notes in Computer Science*, **1997**, 211-222	0.9	
13	Optimal Location of Antennas in Telecommunication Networks **2009**, 287-307		
12	Generating Automatic Projections by Means of Genetic Programming **2009**, 1-14		
11	Emergent Sorting in Networks of Router Agents. *Lecture Notes in Computer Science*, **2008**, 299-306	0.9	
10	ANTS 2020 Special Issue: Editorial. *Swarm Intelligence*, **2021**, 15, 311-313	3	
9	Generic CP-Supported CMSA for Binary Integer Linear Programs. *Lecture Notes in Computer Science*, **2019**, 1-15	0.9	

8	On the Use of Decision Diagrams for Finding Repetition-Free Longest Common Subsequences. *Lecture Notes in Computer Science*, **2020**, 134-149	0.9
7	Beam-ACO Based on Stochastic Sampling: A Case Study on the TSP with Time Windows. *Lecture Notes in Computer Science*, **2009**, 59-73	0.9
6	Learning Maximum Weighted (k+1)-Order Decomposable Graphs by Integer Linear Programming. *Lecture Notes in Computer Science*, **2014**, 396-408	0.9
5	Exact and Heuristic Approaches for the Longest Common Palindromic Subsequence Problem. *Lecture Notes in Computer Science*, **2019**, 199-214	0.9
4	Optimization Techniques and Formal Verification for the Software Design of Boolean Algebra Based Safety-Critical Systems. *IEEE Transactions on Industrial Informatics*, **2021**, 1-1	11.9
3	Heterogeneous Teams for Homogeneous Performance. *Lecture Notes in Computer Science*, **2018**, 89-105	0.9
2	Selected String Problems **2018**, 1221-1240	
1	Application of A$*$ to the Generalized Constrained Longest Common Subsequence Problem with Many Pattern Strings. *Lecture Notes in Computer Science*, **2022**, 53-64	0.9