Christian Blum

List of Publications by Year
in descending order

174 papers	9,542 citations	218381 26 h-index	39575 94 g-index
197 all docs	197 docs citations	197 times ranked	6859 citing authors

#	Article	IF	Citations
1	Metaheuristics in combinatorial optimization. ACM Computing Surveys, 2003, 35, 268-308.	16.1	2,445
2	Ant colony optimization theory: A survey. Theoretical Computer Science, 2005, 344, 243-278.	0.5	1,830
3	Ant colony optimization: Introduction and recent trends. Physics of Life Reviews, 2005, 2, 353-373.	1.5	866
4	Hybrid metaheuristics in combinatorial optimization: A survey. Applied Soft Computing Journal, 2011, 11, 4135-4151.	4.1	611
5	Beam-ACOâ€"hybridizing ant colony optimization with beam search: an application to open shop scheduling. Computers and Operations Research, 2005, 32, 1565-1591.	2.4	337
6	The Hyper-Cube Framework for Ant Colony Optimization. IEEE Transactions on Systems, Man, and Cybernetics, 2004, 34, 1161-1172.	5.5	329
7	Swarm Intelligence in Optimization. Natural Computing Series, 2008, , 43-85.	2.2	238
8	An ant colony optimization algorithm for continuous optimization: application to feed-forward neural network training. Neural Computing and Applications, 2007, 16, 235-247.	3.2	229
9	An Ant Colony Optimization Algorithm for Shop Scheduling Problems. Mathematical Modelling and Algorithms, 2004, 3, 285-308.	0.5	213
10	Automated Reconstruction of Dendritic and Axonal Trees by Global Optimization with Geometric Priors. Neuroinformatics, 2011, 9, 279-302.	1.5	119
11	Beam-ACO for the travelling salesman problem with time windows. Computers and Operations Research, 2010, 37, 1570-1583.	2.4	106
12	Training feed-forward neural networks with ant colony optimization: an application to pattern classification. , 2005, , .		100
13	Search Bias in Ant Colony Optimization: On the Role of Competition-Balanced Systems. IEEE Transactions on Evolutionary Computation, 2005, 9, 159-174.	7.5	87
14	On solving the assembly line worker assignment and balancing problem via beam search. Computers and Operations Research, 2011, 38, 328-339.	2.4	86
15	The travelling salesman problem with time windows: Adapting algorithms from travel-time to makespan optimization. Applied Soft Computing Journal, 2013, 13, 3806-3815.	4.1	82
16	Beam-ACO for Simple Assembly Line Balancing. INFORMS Journal on Computing, 2008, 20, 618-627.	1.0	68
17	Construct, Merge, Solve & Adapt A new general algorithm for combinatorial optimization. Computers and Operations Research, 2016, 68, 75-88.	2.4	67
18	An iterated greedy algorithm for the large-scale unrelated parallel machines scheduling problem. Computers and Operations Research, 2013, 40, 1829-1841.	2.4	66

#	ARTICLE	IF	CITATIONS
19	Hybrid Metaheuristics: An Introduction. Studies in Computational Intelligence, 2008, , 1-30.	0.7	65
20	A population-based iterated greedy algorithm for the minimum weight vertex cover problem. Applied Soft Computing Journal, 2012, 12, 1632-1639.	4.1	65
21	New metaheuristic approaches for the edge-weighted k-cardinality tree problem. Computers and Operations Research, 2005, 32, 1355-1377.	2.4	62
22	Beam search for the longest common subsequence problem. Computers and Operations Research, 2009, 36, 3178-3186.	2.4	54
23	An ant colony optimization algorithm for DNA sequencing by hybridization. Computers and Operations Research, 2008, 35, 3620-3635.	2.4	50
24	Distributed graph coloring: an approach based on the calling behavior of Japanese tree frogs. Swarm Intelligence, 2012, 6, 117-150.	1.3	46
25	Ant colony optimization for FOP shop scheduling: a case study on different pheromone representations. , 0, , .		45
26	ACO vs EAs for solving a real-world frequency assignment problem in GSM networks. , 2007, , .		43
27	Variable neighbourhood search for the variable sized bin packing problem. Computers and Operations Research, 2012, 39, 1097-1108.	2.4	37
28	Search trajectory networks: A tool for analysing and visualising the behaviour of metaheuristics. Applied Soft Computing Journal, 2021, 109, 107492.	4.1	37
29	An algorithm based on ant colony optimization for the minimum connected dominating set problem. Applied Soft Computing Journal, 2019, 80, 672-686.	4.1	32
30	ACO Applied to Group Shop Scheduling: A Case Study on Intensification and Diversification. Lecture Notes in Computer Science, 2002, , 14-27.	1.0	27
31	Revisiting dynamic programming for finding optimal subtrees in trees. European Journal of Operational Research, 2007, 177, 102-115.	3.5	24
32	Deception in Ant Colony Optimization. Lecture Notes in Computer Science, 2004, , 118-129.	1.0	24
33	Solving the 2D Bin Packing Problem by Means of a Hybrid Evolutionary Algorithm. Procedia Computer Science, 2013, 18, 899-908.	1.2	23
34	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.	4.1	21
35	A hybrid algorithmic model for the minimum weight dominating set problem. Simulation Modelling Practice and Theory, 2016, 64, 57-68.	2.2	21
36	An Artificial Bee Colony Algorithm for the Unrelated Parallel Machines Scheduling Problem. Lecture Notes in Computer Science, 2012, , 143-152.	1.0	20

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37	Search Trajectory Networks of Population-Based Algorithms in Continuous Spaces. Lecture Notes in Computer Science, 2020, , 70-85.	1.0	20
38	Ant colony optimization for multicasting in static wireless ad-hoc networks. Swarm Intelligence, 2009, 3, 125-148.	1.3	19
39	Metaheuristic Hybrids. Profiles in Operations Research, 2010, , 469-496.	0.3	19
40	When Model Bias Is Stronger than Selection Pressure. Lecture Notes in Computer Science, 2002, , 893-902.	1.0	19
41	Local search algorithms for the k-cardinality tree problem. Discrete Applied Mathematics, 2003, 128, 511-540.	0.5	18
42	Beam-ACO Applied to Assembly Line Balancing. Lecture Notes in Computer Science, 2006, , 96-107.	1.0	18
43	Finding Edge-disjoint Paths in Networks: An Ant Colony Optimization Algorithm. Mathematical Modelling and Algorithms, 2007, 6, 361-391.	0.5	18
44	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.	2.6	18
45	Swarm Intelligence in Optimization and Robotics. , 2015, , 1291-1309.		18
46	An Introduction to Metaheuristic Techniques. , 2005, , 1-42.		17
47	Large neighbourhood search applied to the efficient solution of spatially explicit strategic supply chain management problems. Computers and Chemical Engineering, 2013, 49, 114-126.	2.0	17
48	Synergistic team composition: A computational approach to foster diversity in teams. Knowledge-Based Systems, 2019, 182, 104799.	4.0	17
49	Ant Colony Optimization for the Maximum Edge-Disjoint Paths Problem. Lecture Notes in Computer Science, 2004, , 160-169.	1.0	16
50	The firefighter problem: Empirical results on random graphs. Computers and Operations Research, 2015, 60, 55-66.	2.4	16
51	Hybrid Metaheuristics. The Artificial Intelligence: Foundationsory, and Algorithms, 2016, , .	0.2	16
52	Adding Negative Learning to Ant Colony Optimization: A Comprehensive Study. Mathematics, 2021, 9, 361.	1.1	16
53	Hybridizations of Metaheuristics With Branch & Bound Derivates. Studies in Computational Intelligence, 2008, , 85-116.	0.7	16
54	Evolutionary Optimization. , 2012, , 1-29.		16

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55	Hybrid Metaheuristics. Computers and Operations Research, 2010, 37, 430-431.	2.4	14
56	Mathematical programming strategies for solving the minimum common string partition problem. European Journal of Operational Research, 2015, 242, 769-777.	3.5	14
57	Solving longest common subsequence problems via a transformation to the maximum clique problem. Computers and Operations Research, 2021, 125, 105089.	2.4	14
58	FrogSim: distributed graph coloring in wireless ad hoc networks. Telecommunication Systems, 2014, 55, 211-223.	1.6	13
59	Finding Longest Common Subsequences: New anytime A* search results. Applied Soft Computing Journal, 2020, 95, 106483.	4.1	13
60	Solution Merging in Matheuristics for Resource Constrained Job Scheduling. Algorithms, 2020, 13, 256.	1.2	13
61	A Computational Approach to Quantify the Benefits of Ridesharing for Policy Makers and Travellers. IEEE Transactions on Intelligent Transportation Systems, 2021, 22, 119-130.	4.7	13
62	Ant Colony Optimization for Energy-Efficient Broadcasting in Ad-Hoc Networks. Lecture Notes in Computer Science, 2008, , 25-36.	1.0	13
63	Hybridizing Beam-ACO with Constraint Programming for Single Machine Job Scheduling. Lecture Notes in Computer Science, 2009, , 30-44.	1.0	13
64	Construct, Merge, Solve and Adapt: Application to the Repetition-Free Longest Common Subsequence Problem. Lecture Notes in Computer Science, 2016, , 46-57.	1.0	12
65	An Improved Greedy Heuristic for the Minimum Positive Influence Dominating Set Problem in Social Networks. Algorithms, 2021, 14, 79.	1.2	12
66	Probabilistic Beam Search for the Longest Common Subsequence Problem. , 2007, , 150-161.		12
67	A comprehensive comparison of metaheuristics for the repetition-free longest common subsequence problem. Journal of Heuristics, 2018, 24, 551-579.	1.1	11
68	Application of CMSA to the minimum capacitated dominating set problem. , 2019, , .		11
69	Metaheuristics for Group Shop Scheduling. Lecture Notes in Computer Science, 2002, , 631-640.	1.0	11
70	Combining Ant Colony Optimization with Dynamic Programming for Solving the k-Cardinality Tree Problem. Lecture Notes in Computer Science, 2005, , 25-33.	1.0	10
71	Self-synchronized duty-cycling for mobile sensor networks with energy harvesting capabilities: A swarm intelligence study. , 2009, , .		10
72	The weighted independent domination problem: Integer linear programming models and metaheuristic approaches. European Journal of Operational Research, 2018, 265, 860-871.	3.5	10

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73	Iterative Probabilistic Tree Search for the Minimum Common String Partition Problem. Lecture Notes in Computer Science, 2014, , 145-154.	1.0	10
74	Distributed graph coloring in wireless ad hoc networks: A light-weight algorithm based on Japanese tree frogs' calling behaviour. , 2011, , .		9
75	Hybrid techniques based on solving reduced problem instances for a longest common subsequence problem. Applied Soft Computing Journal, 2018, 62, 15-28.	4.1	9
76	A Beam Search for the Longest Common Subsequence Problem Guided by a Novel Approximate Expected Length Calculation. Lecture Notes in Computer Science, 2019, , 154-167.	1.0	9
77	Large neighbourhood search algorithms for the founder sequence reconstruction problem. Computers and Operations Research, 2012, 39, 213-224.	2.4	8
78	The Firefighter Problem: Application of Hybrid Ant Colony Optimization Algorithms. Lecture Notes in Computer Science, 2014, , 218-229.	1.0	8
79	A matheuristic for the minimum weight rooted arborescence problem. Journal of Heuristics, 2015, 21, 479-499.	1.1	8
80	Metaheuristic Hybrids. Profiles in Operations Research, 2019, , 385-417.	0.3	8
81	A Probabilistic Beam Search Approach to the Shortest Common Supersequence Problem. Lecture Notes in Computer Science, 2007, , 36-47.	1.0	8
82	Ant Colony Optimization: Introduction and Hybridizations. , 2007, , .		7
83	On the use of different types of knowledge in metaheuristics based on constructing solutions. Engineering Applications of Artificial Intelligence, 2010, 23, 650-659.	4.3	7
84	Beam-ACO for the longest common subsequence problem. , 2010, , .		7
85	FlockOpt: A new swarm optimization algorithm based on collective behavior of starling birds. , 2011, , .		7
86	Hybrid Metaheuristics in Combinatorial Optimization: A Tutorial. Lecture Notes in Computer Science, 2012, , 1-10.	1.0	7
87	Beam-ACO for the Repetition-Free Longest Common Subsequence Problem. Lecture Notes in Computer Science, 2014, , 79-90.	1.0	7
88	Tabu Search for the Founder Sequence Reconstruction Problem: A Preliminary Study. Lecture Notes in Computer Science, 2009, , 1035-1042.	1.0	7
89	Variable Neighborhood Search for the Two-Echelon Electric Vehicle Routing Problem with Time Windows. Applied Sciences (Switzerland), 2022, 12, 1014.	1.3	7
90	A Hybrid Ant Colony Optimization Algorithm for the Far From Most String Problem. Lecture Notes in Computer Science, 2014, , 1-12.	1.0	6

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91	FrogCOL and FrogMIS: new decentralized algorithms for finding large independent sets in graphs. Swarm Intelligence, 2015, 9, 205-227.	1.3	6
92	An Artificial Bioindicator System for Network Intrusion Detection. Artificial Life, 2015, 21, 93-118.	1.0	6
93	Maximising the Net Present Value of Project Schedules Using CMSA and Parallel ACO. Lecture Notes in Computer Science, 2019, , 16-30.	1.0	6
94	Anytime algorithms for the longest common palindromic subsequence problem. Computers and Operations Research, 2020, 114, 104827.	2.4	6
95	An Extended Beam-ACO Approach to the Time and Space Constrained Simple Assembly Line Balancing Problem. Lecture Notes in Computer Science, 2008, , 85-96.	1.0	6
96	Distributed ant colony optimization for minimum energy broadcasting in sensor networks with realistic antennas. Computers and Mathematics With Applications, 2012, 64, 3683-3700.	1.4	5
97	Computational performance evaluation of two integer linear programming models for the minimum common string partition problem. Optimization Letters, 2016, 10, 189-205.	0.9	5
98	Large neighborhood search for the most strings with few bad columns problem. Soft Computing, 2017, 21, 4901-4915.	2.1	5
99	A comparative analysis of two matheuristics by means of merged local optima networks. European Journal of Operational Research, 2021, 290, 36-56.	3.5	5
100	A Greedy Heuristic for Maximizing the Lifetime of Wireless Sensor Networks Based on Disjoint Weighted Dominating Sets. Algorithms, 2021, 14, 170.	1.2	5
101	Solving the Longest Common Subsequence Problem Concerning Non-Uniform Distributions of Letters in Input Strings. Mathematics, 2021, 9, 1515.	1.1	5
102	Construct, Merge, Solve and Adapt: Application to Unbalanced Minimum Common String Partition. Lecture Notes in Computer Science, 2016, , 17-31.	1.0	5
103	Reconstructing Geometrically Consistent Tree Structures from Noisy Images. Lecture Notes in Computer Science, 2010, 13, 291-299.	1.0	5
104	A Biased Random Key Genetic Algorithm with Rollout Evaluations for the Resource Constraint Job Scheduling Problem. Lecture Notes in Computer Science, 2019, , 549-560.	1.0	5
105	A new hybrid evolutionary algorithm for the huge k-cardinality tree problem. , 2006, , .		4
106	Implementing a model of Japanese tree frogs' calling behavior in sensor networks. , 2011, , .		4
107	Iterated Greedy Algorithms for the Maximal Covering Location Problem. Lecture Notes in Computer Science, 2012, , 172-181.	1.0	4
108	Mining k-reachable sets in real-world networks using domination in shortcut graphs. Journal of Computational Science, 2017, 22, 1-14.	1.5	4

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109	On solving large-scale instances of the knapsack problem with setup by means of an iterated greedy algorithm. , 2017, , .		4
110	Route planning for cooperative air-ground robots with fuel constraints. , 2019, , .		4
111	Barrakuda: A Hybrid Evolutionary Algorithm for Minimum Capacitated Dominating Set Problem. Mathematics, 2020, 8, 1858.	1.1	4
112	An AâŽ search algorithm for the constrained longest common subsequence problem. Information Processing Letters, 2021, 166, 106041.	0.4	4
113	Multi-level Ant Colony Optimization for DNA Sequencing by Hybridization. Lecture Notes in Computer Science, 2006, , 94-109.	1.0	4
114	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.	1.0	4
115	Using Branch & Bound Concepts in Construction-Based Metaheuristics: Exploiting the Dual Problem Knowledge. Lecture Notes in Computer Science, 2007, , 123-139.	1.0	4
116	Ant Colony Optimization. , 2006, , 153-180.		3
117	Energy-efficient multicasting in wireless ad-hoc networks: An ant colony optimization approach. , 2008, , .		3
118	On solving the most strings with few bad columns problem: An ILP model and heuristics. , 2015, , .		3
119	A randomized population-based iterated greedy algorithm for the minimum weight dominating set problem. , 2015, , .		3
120	Extension of the CMSA Algorithm. , 2016, , .		3
121	A hybrid evolutionary algorithm based on solution merging for the longest arc-preserving common subsequence problem. , 2017, , .		3
122	Minimum common string partition: on solving largeâ€scale problem instances. International Transactions in Operational Research, 2020, 27, 91-111.	1.8	3
123	Optimization Techniques and Formal Verification for the Software Design of Boolean Algebra Based Safety-Critical Systems. IEEE Transactions on Industrial Informatics, 2022, 18, 620-630.	7.2	3
124	Critical Parallelization of Local Search for MAX-SAT. Lecture Notes in Computer Science, 2001, , 147-158.	1.0	3
125	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.	1.0	3
126	A Hybrid Metaheuristic for the Longest Common Subsequence Problem. Lecture Notes in Computer Science, 2010, , 1-15.	1.0	3

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127	New Constructive Heuristics for DNA Sequencing by Hybridization. Lecture Notes in Computer Science, 2006, , 355-365.	1.0	3
128	A Randomized Iterated Greedy Algorithm for the Founder Sequence Reconstruction Problem. Lecture Notes in Computer Science, 2010, , 37-51.	1.0	3
129	NuCDS: An Efficient Local Search Algorithm for Minimum Connected Dominating Set. , 2020, , .		3
130	On Solving a Generalized Constrained Longest Common Subsequence Problem. Lecture Notes in Computer Science, 2020, , 55-70.	1.0	3
131	A New Approach for Making Use of Negative Learning in Ant Colony Optimization. Lecture Notes in Computer Science, 2020, , 16-28.	1.0	3
132	A Population-Based Iterated Greedy Algorithm for Maximizing Sensor Network Lifetime. Sensors, 2022, 22, 1804.	2.1	3
133	A Self-Adaptive Variant of CMSA: Application to the Minimum Positive Influence Dominating Set Problem. International Journal of Computational Intelligence Systems, 2022, 15, .	1.6	3
134	Self-synchronized duty-cycling in sensor networks with energy harvesting capabilities. , 2009, , .		2
135	Hybrid Algorithms for the Variable Sized Bin Packing Problem. Lecture Notes in Computer Science, 2010, , 16-30.	1.0	2
136	A Protocol for Self-Synchronized Duty-Cycling in Sensor Networks: Generic Implementation in Wiselib. , 2010, , .		2
137	Hybrid Algorithms for the Minimum-Weight Rooted Arborescence Problem. Lecture Notes in Computer Science, 2012, , 61-72.	1.0	2
138	The Weighted Independent Domination Problem: ILP Model and Algorithmic Approaches. Lecture Notes in Computer Science, 2017, , 201-214.	1.0	2
139	A new optimization model for wastewater treatment planning with a temporal component. Chemical Engineering Research and Design, 2020, 136, 157-168.	2.7	2
140	Negative learning ant colony optimization for the minimum positive influence dominating set problem. , 2021, , .		2
141	Solving the Two-Dimensional Bin Packing Problem with a Probabilistic Multi-start Heuristic. Lecture Notes in Computer Science, 2011, , 76-90.	1.0	2
142	Graph search and variable neighborhood search for finding constrained longest common subsequences in artificial and real gene sequences. Applied Soft Computing Journal, 2022, 122, 108844.	4.1	2
143	Iterated local search and constructive heuristics for error correcting code design. International Journal of Innovative Computing and Applications, 2007, 1, 14.	0.2	1
144	Ant Colony Optimization: Introduction and Hybridizations. , 2007, , .		1

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145	Asynchronous simulation of a self-synchronized duty-cycling mechanism for mobile sensor networks. , 2009, , .		1
146	Hybridization Based on Large Neighborhood Search. The Artificial Intelligence: Foundationsory, and Algorithms, 2016, , 63-82.	0.2	1
147	ILP-Based Reduced Variable Neighborhood Search for Large-Scale Minimum Common String Partition. Electronic Notes in Discrete Mathematics, 2018, 66, 15-22.	0.4	1
148	A biased random key genetic algorithm for the weighted independent domination problem. , 2019, , .		1
149	Job sequencing with one common and multiple secondary resources: An AâŽ/Beam Search based anytime algorithm. Artificial Intelligence, 2019, 277, 103173.	3.9	1
150	Negative Learning in Ant Colony Optimization: Application to the Multi Dimensional Knapsack Problem. , 2021, , .		1
151	Can Frogs Find Large Independent Sets in a Decentralized Way? Yes They Can!. Lecture Notes in Computer Science, 2014, , 74-85.	1.0	1
152	Application of Large Neighborhood Search to Strategic Supply Chain Management in the Chemical Industry. Studies in Computational Intelligence, 2013, , 335-352.	0.7	1
153	Beam-ACO Based on Stochastic Sampling: A Case Study on the TSP with Time Windows. Lecture Notes in Computer Science, 2009, , 59-73.	1.0	1
154	Interpretation of a hierarchical neural network. Lecture Notes in Computer Science, 1997, , 651-659.	1.0	0
155	Diagnosis of Finger Dysfunction Caused by Ulnar Nerve Lesion. Journal of Intelligent Systems, 1998, 8, .	1.2	0
156	A nature-inspired algorithm for the disjoint paths problem. , 2006, , .		0
157	Ant colony optimization. , 2011, , .		0
158	Guest editorial: Special issue based on the LION 4 conference. Annals of Mathematics and Artificial Intelligence, 2011, 61, 47-48.	0.9	0
159	Foundations of ANTCYCLE: Self-synchronized Duty-cycling in Mobile Sensor Networks. Computer Journal, 2011, 54, 1427-1448.	1.5	0
160	ANTS 2012 special issue. Swarm Intelligence, 2013, 7, 79-81.	1.3	0
161	Ant Colony Optimization for the Minimum-Weight Rooted Arborescence Problem. , 2015, , 1333-1343.		0
162	Editorial for the Special Issue on Combinatorial Optimization Problems. Evolutionary Computation, 2016, 24, 573-575.	2.3	0

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163	Incomplete Solution Representations and Decoders. The Artificial Intelligence: Foundationsory, and Algorithms, 2016, , 27-44.	0.2	0
164	Making Use of a Parallel, Non-independent, Construction of SolutionsWithin Metaheuristics. The Artificial Intelligence: Foundationsory, and Algorithms, 2016, , 83-99.	0.2	0
165	Heterogeneous Teams for Homogeneous Performance. Lecture Notes in Computer Science, 2018, , 89-105.	1.0	0
166	Selected String Problems. , 2018, , 1221-1240.		0
167	ANTS 2018 special issue: Editorial. Swarm Intelligence, 2019, 13, 169-172.	1.3	0
168	Exact and Heuristic Approaches for the Longest Common Palindromic Subsequence Problem. Lecture Notes in Computer Science, 2019, , 199-214.	1.0	0
169	Learning Maximum Weighted (k+1)-Order Decomposable Graphs by Integer Linear Programming. Lecture Notes in Computer Science, 2014, , 396-408.	1.0	0
170	The Workshops at PPSN 2016. Lecture Notes in Computer Science, 2016, , 1007-1011.	1.0	0
171	Generic CP-Supported CMSA for Binary Integer Linear Programs. Lecture Notes in Computer Science, 2019, , 1-15.	1.0	0
172	ANTS 2020 Special Issue: Editorial. Swarm Intelligence, 2021, 15, 311-313.	1.3	0
173	Negative learning Ant colony optimization for network alignment. , 2022, , .		0
174	A biased random key genetic algorithm applied to target set selection in viral marketing. , 2022, , .		0