

# Kaisa Miettinen

## List of Publications by Year in descending order

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158  
papers

7,876  
citations

61984

43  
h-index

54911

84  
g-index

162  
all docs

162  
docs citations

162  
times ranked

5068  
citing authors

#	ARTICLE	IF	CITATIONS
1	Nonlinear Multiobjective Optimization. Profiles in Operations Research, 1998, , .	0.4	1,332
2	A Preference-Based Evolutionary Algorithm for Multi-Objective Optimization. Evolutionary Computation, 2009, 17, 411-436.	3.0	385
3	A Surrogate-Assisted Reference Vector Guided Evolutionary Algorithm for Computationally Expensive Many-Objective Optimization. IEEE Transactions on Evolutionary Computation, 2018, 22, 129-142.	10.0	368
4	Data-Driven Evolutionary Optimization: An Overview and Case Studies. IEEE Transactions on Evolutionary Computation, 2019, 23, 442-458.	10.0	348
5	A Hybrid Framework for Evolutionary Multi-Objective Optimization. IEEE Transactions on Evolutionary Computation, 2013, 17, 495-511.	10.0	333
6	On scalarizing functions in multiobjective optimization. OR Spectrum, 2002, 24, 193-213.	3.4	270
7	A survey on handling computationally expensive multiobjective optimization problems with evolutionary algorithms. Soft Computing, 2019, 23, 3137-3166.	3.6	186
8	Synchronous approach in interactive multiobjective optimization. European Journal of Operational Research, 2006, 170, 909-922.	5.7	174
9	Ordinal criteria in stochastic multicriteria acceptability analysis (SMAA). European Journal of Operational Research, 2003, 147, 117-127.	5.7	169
10	Survey of methods to visualize alternatives in multiple criteria decision making problems. OR Spectrum, 2014, 36, 3-37.	3.4	164
11	Toward an Estimation of Nadir Objective Vector Using a Hybrid of Evolutionary and Local Search Approaches. IEEE Transactions on Evolutionary Computation, 2010, 14, 821-841.	10.0	153
12	Spatially dynamic forest management to sustain biodiversity and economic returns. Journal of Environmental Management, 2014, 134, 80-89.	7.8	140
13	Quasi-random initial population for genetic algorithms. Computers and Mathematics With Applications, 2004, 47, 1885-1895.	2.7	134
14	On initial populations of a genetic algorithm for continuous optimization problems. Journal of Global Optimization, 2007, 37, 405-436.	1.8	134
15	Introduction to Multiobjective Optimization: Interactive Approaches. Lecture Notes in Computer Science, 2008, , 27-57.	1.3	134
16	Interactive bundle-based method for nondifferentiable multiobjective optimization: nimbus <sup>AS</sup> . Optimization, 1995, 34, 231-246.	1.7	116
17	Incorporating preference information in interactive reference point methods for multiobjective optimization. Omega, 2009, 37, 450-462.	5.9	106
18	A Multiple Surrogate Assisted Decomposition-Based Evolutionary Algorithm for Expensive Multi/Many-Objective Optimization. IEEE Transactions on Evolutionary Computation, 2019, 23, 1000-1014.	10.0	97

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19	Interactive multiobjective optimization system WWW-NIMBUS on the Internet. Computers and Operations Research, 2000, 27, 709-723.	4.0	94
20	Numerical Comparison of Some Penalty-Based Constraint Handling Techniques in Genetic Algorithms. Journal of Global Optimization, 2003, 27, 427-446.	1.8	94
21	A survey on handling computationally expensive multiobjective optimization problems using surrogates: non-nature inspired methods. Structural and Multidisciplinary Optimization, 2015, 52, 1-25.	3.5	91
22	New limited memory bundle method for large-scale nonsmooth optimization. Optimization Methods and Software, 2004, 19, 673-692.	2.4	86
23	Globally convergent limited memory bundle method for large-scale nonsmooth optimization. Mathematical Programming, 2007, 109, 181-205.	2.4	83
24	Managing a boreal forest landscape for providing timber, storing and sequestering carbon. Ecosystem Services, 2015, 14, 179-189.	5.4	81
25	Introduction to Multiobjective Optimization: Noninteractive Approaches. Lecture Notes in Computer Science, 2008, , 1-26.	1.3	80
26	Visualizing the Pareto Frontier. Lecture Notes in Computer Science, 2008, , 213-243.	1.3	80
27	Genetic programming through bi-objective genetic algorithms with a study of a simulated moving bed process involving multiple objectives. Applied Soft Computing Journal, 2013, 13, 2613-2623.	7.2	80
28	Decision-aid for discrete multiple criteria decision making problems with imprecise data. European Journal of Operational Research, 1999, 119, 50-60.	5.7	68
29	Determining the implementation order of a general plan by using a multicriteria method. Journal of Multi-Criteria Decision Analysis, 1998, 7, 273-284.	1.9	66
30	Wastewater treatment: New insight provided by interactive multiobjective optimization. Decision Support Systems, 2011, 51, 328-337.	5.9	61
31	Some Methods for Nonlinear Multi-objective Optimization. Lecture Notes in Computer Science, 2001, , 1-20.	1.3	54
32	NAUTILUS method: An interactive technique in multiobjective optimization based on the nadir point. European Journal of Operational Research, 2010, 206, 426-434.	5.7	54
33	Comparative evaluation of some interactive reference point-based methods for multi-objective optimisation. Journal of the Operational Research Society, 1999, 50, 949-959.	3.4	52
34	Pareto navigator for interactive nonlinear multiobjective optimization. OR Spectrum, 2010, 32, 211-227.	3.4	52
35	PAINT: Pareto front interpolation for nonlinear multiobjective optimization. Computational Optimization and Applications, 2012, 52, 845-867.	1.6	52
36	Wastewater treatment plant design and operation under multiple conflicting objective functions. Environmental Modelling and Software, 2013, 46, 240-249.	4.5	52

#	ARTICLE	IF	CITATIONS
37	Global formulation for interactive multiobjective optimization. OR Spectrum, 2011, 33, 27-48.	3.4	51
38	Local search based evolutionary multi-objective optimization algorithm for constrained and unconstrained problems. , 2009, , .		50
39	A new hybrid mutation operator for multiobjective optimization with differential evolution. Soft Computing, 2011, 15, 2041-2055.	3.6	49
40	Reference point approach for multiple decision makers. European Journal of Operational Research, 2005, 164, 785-791.	5.7	48
41	Integrating Approximation and Interactive Decision Making in Multicriteria Optimization. Operations Research, 2008, 56, 222-234.	1.9	48
42	Optimal control of cooling process in continuous casting of steel using a visualization-based multi-criteria approach. Applied Mathematical Modelling, 2005, 29, 653-672.	4.2	47
43	Interactive Nonlinear Multiobjective Optimization Methods. Profiles in Operations Research, 2016, , 927-976.	0.4	45
44	A Local Search Based Evolutionary Multi-objective Optimization Approach for Fast and Accurate Convergence. Lecture Notes in Computer Science, 2008, , 815-824.	1.3	44
45	Experiments with classification-based scalarizing functions in interactive multiobjective optimization. European Journal of Operational Research, 2006, 175, 931-947.	5.7	43
46	Using Interactive Multiobjective Optimization in Continuous Casting of Steel. Materials and Manufacturing Processes, 2007, 22, 585-593.	4.7	43
47	Optimal Control of Continuous Casting by Nondifferentiable Multiobjective Optimization. Computational Optimization and Applications, 1998, 11, 177-194.	1.6	40
48	Multiobjective optimization of an ultrasonic transducer using NIMBUS. Ultrasonics, 2006, 44, 368-380.	3.9	38
49	Efficient evolutionary approach to approximate the Pareto-optimal set in multiobjective optimization, UPS-EMOA. Optimization Methods and Software, 2010, 25, 841-858.	2.4	38
50	A Preference Based Interactive Evolutionary Algorithm for Multi-objective Optimization: PIE. Lecture Notes in Computer Science, 2011, , 212-225.	1.3	31
51	Improving convergence of evolutionary multi-objective optimization with local search: a concurrent-hybrid algorithm. Natural Computing, 2011, 10, 1407-1430.	3.0	31
52	Connections Between Single-Level and Bilevel Multiobjective Optimization. Journal of Optimization Theory and Applications, 2012, 153, 60-74.	1.5	30
53	Interactive Solution Approach to a Multiobjective Optimization Problem in a Paper Machine Headbox Design. Journal of Optimization Theory and Applications, 2003, 116, 265-281.	1.5	28
54	Design of a Permanent Magnet Synchronous Generator Using Interactive Multiobjective Optimization. IEEE Transactions on Industrial Electronics, 2017, 64, 9776-9783.	7.9	28

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55	Integration of Two Multiobjective Optimization Methods for Nonlinear Problems. Optimization Methods and Software, 2003, 18, 63-80.	2.4	27
56	A new achievement scalarizing function based on parameterization in multiobjective optimization. OR Spectrum, 2012, 34, 69-87.	3.4	27
57	Interactive multiobjective optimization for anatomy-based three-dimensional HDR brachytherapy. Physics in Medicine and Biology, 2010, 55, 4703-4719.	3.0	26
58	Constructing a Pareto front approximation for decision making. Mathematical Methods of Operations Research, 2011, 73, 209-234.	1.0	26
59	Trade-off analysis approach for interactive nonlinear multiobjective optimization. OR Spectrum, 2012, 34, 803-816.	3.4	25
60	Bilevel heat exchanger network synthesis with an interactive multi-objective optimization method. Applied Thermal Engineering, 2012, 48, 301-316.	6.0	24
61	On Constraint Handling in Surrogate-Assisted Evolutionary Many-Objective Optimization. Lecture Notes in Computer Science, 2016, , 214-224.	1.3	24
62	Improving the computational efficiency in a global formulation (GLIDE) for interactive multiobjective optimization. Annals of Operations Research, 2012, 197, 47-70.	4.1	23
63	Connections of reference vectors and different types of preference information in interactive multiobjective evolutionary algorithms. , 2016, , .		23
64	Assessing the Performance of Interactive Multiobjective Optimization Methods. ACM Computing Surveys, 2022, 54, 1-27.	23.0	23
65	An interactive multi-objective approach to heat exchanger network synthesis. Computers and Chemical Engineering, 2010, 34, 943-952.	3.8	22
66	E-NAUTILUS: A decision support system for complex multiobjective optimization problems based on the NAUTILUS method. European Journal of Operational Research, 2015, 246, 218-231.	5.7	22
67	A two-slope achievement scalarizing function for interactive multiobjective optimization. Computers and Operations Research, 2012, 39, 1673-1681.	4.0	21
68	An Interactive Evolutionary Multiobjective Optimization Method: Interactive WASF-GA. Lecture Notes in Computer Science, 2015, , 249-263.	1.3	21
69	An interactive method for nonsmooth multiobjective optimization with an application to optimal control. Optimization Methods and Software, 1993, 2, 31-44.	2.4	20
70	On interactive multiobjective optimization with NIMBUSÂ® in chemical process design. Journal of Multi-Criteria Decision Analysis, 2005, 13, 125-134.	1.9	19
71	Efficient hybrid methods for global continuous optimization based on simulated annealing. Computers and Operations Research, 2006, 33, 1102-1116.	4.0	19
72	A solution process for simulation-based multiobjective design optimization with an application in the paper industry. CAD Computer Aided Design, 2014, 47, 45-58.	2.7	19

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73	Decision making in multiobjective optimization problems under uncertainty: balancing between robustness and quality. <i>OR Spectrum</i> , 2019, 41, 391-413.	3.4	19
74	Nadir Point Estimation Using Evolutionary Approaches: Better Accuracy and Computational Speed Through Focused Search. <i>Lecture Notes in Economics and Mathematical Systems</i> , 2010, , 339-354.	0.3	19
75	Interactive multiobjective optimization with NIMBUS for decision making under uncertainty. <i>OR Spectrum</i> , 2014, 36, 39-56.	3.4	18
76	Coupling dynamic simulation and interactive multiobjective optimization for complex problems: An APROS-NIMBUS case study. <i>Expert Systems With Applications</i> , 2014, 41, 2546-2558.	7.6	18
77	An Interactive Simple Indicator-Based Evolutionary Algorithm (I-SIBEA) for Multiobjective Optimization Problems. <i>Lecture Notes in Computer Science</i> , 2015, , 277-291.	1.3	18
78	On cone characterizations of weak, proper and Pareto optimality in multiobjective optimization. <i>Mathematical Methods of Operations Research</i> , 2001, 53, 233-245.	1.0	17
79	Implementation aspects of interactive multiobjective optimization for modeling environments: the case of GAMS-NIMBUS. <i>Computational Optimization and Applications</i> , 2014, 58, 757-779.	1.6	17
80	A feature rich distance-based many-objective visualisable test problem generator. , 2019, , .		17
81	New Perspective to Continuous Casting of Steel with a Hybrid Evolutionary Multiobjective Algorithm. <i>Materials and Manufacturing Processes</i> , 2011, 26, 481-492.	4.7	16
82	Graphical Illustration of Pareto Optimal Solutions. , 2003, , 197-202.		16
83	Simultaneous optimization of harvest schedule and measurement strategy. <i>Scandinavian Journal of Forest Research</i> , 2014, 29, 224-233.	1.4	15
84	Surrogate-assisted evolutionary biobjective optimization for objectives with non-uniform latencies. , 2018, , .		15
85	Visualizations for decision support in scenario-based multiobjective optimization. <i>Information Sciences</i> , 2021, 578, 1-21.	6.9	15
86	Interactive Method NIMBUS for Nondifferentiable Multiobjective Optimization Problems. , 1997, , 310-319.		15
87	DESDEO: The Modular and Open Source Framework for Interactive Multiobjective Optimization. <i>IEEE Access</i> , 2021, 9, 148277-148295.	4.2	15
88	Best compromise solution for a new multiobjective scheduling problem. <i>Computers and Operations Research</i> , 2006, 33, 2353-2368.	4.0	14
89	Incremental user-interface development for interactive multiobjective optimization. <i>Expert Systems With Applications</i> , 2013, 40, 3220-3232.	7.6	13
90	Projections onto the Pareto surface in multicriteria radiation therapy optimization. <i>Medical Physics</i> , 2015, 42, 5862-5870.	3.0	13

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91	NAUTILUS framework: towards trade-off-free interaction in multiobjective optimization. Journal of Business Economics, 2016, 86, 5-21.	1.9	13
92	Integrating risk management tools for regional forest planning: an interactive multiobjective value-at-risk approach. Canadian Journal of Forest Research, 2018, 48, 766-773.	1.7	13
93	NAUTILUS Navigator: free search interactive multiobjective optimization without trading-off. Journal of Global Optimization, 2019, 74, 213-231.	1.8	13
94	Using box indices in supporting comparison in multiobjective optimization. European Journal of Operational Research, 2009, 197, 17-24.	5.7	12
95	Constructing evolutionary algorithms for bilevel multiobjective optimization. , 2012, , .		12
96	Interactive Nonconvex Pareto Navigator for multiobjective optimization. European Journal of Operational Research, 2019, 275, 238-251.	5.7	12
97	On Dealing with Uncertainties from Kriging Models in Offline Data-Driven Evolutionary Multiobjective Optimization. Lecture Notes in Computer Science, 2019, , 463-474.	1.3	12
98	Clustering aided approach for decision making in computationally expensive multiobjective optimization. Optimization Methods and Software, 2009, 24, 157-174.	2.4	11
99	Surrogate assisted interactive multiobjective optimization in energy system design of buildings. Optimization and Engineering, 2022, 23, 303-327.	2.4	11
100	A Visualizable Test Problem Generator for Many-Objective Optimization. IEEE Transactions on Evolutionary Computation, 2022, 26, 1-11.	10.0	11
101	Designing Paper Machine Headbox Using GA. Materials and Manufacturing Processes, 2003, 18, 533-541.	4.7	10
102	Issues related to the computer realization of a multidisciplinary and multiobjective optimization system. Engineering With Computers, 2006, 22, 33-46.	6.1	10
103	Cost effective simulation-based multiobjective optimization in the performance of an internal combustion engine. Engineering Optimization, 2008, 40, 593-612.	2.6	10
104	A new preference handling technique for interactive multiobjective optimization without trading-off. Journal of Global Optimization, 2015, 63, 633-652.	1.8	10
105	Towards Automatic Testing of Reference Point Based Interactive Methods. Lecture Notes in Computer Science, 2016, , 483-492.	1.3	10
106	Guest Editorial Evolutionary Many-Objective Optimization. IEEE Transactions on Evolutionary Computation, 2018, 22, 1-2.	10.0	10
107	Task-based visual analytics for interactive multiobjective optimization. Journal of the Operational Research Society, 2021, 72, 2073-2090.	3.4	10
108	A Hybrid Integrated Multi-Objective Optimization Procedure for Estimating Nadir Point. Lecture Notes in Computer Science, 2009, , 569-583.	1.3	10

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109	Heuristic for a new multiobjective scheduling problem. Optimization Letters, 2007, 1, 213-225.	1.6	9
110	Simultaneous optimization of harvest schedule and data quality. Canadian Journal of Forest Research, 2015, 45, 1034-1044.	1.7	9
111	Automatic surrogate modelling technique selection based on features of optimization problems. , 2019, , .		9
112	Future Challenges. Lecture Notes in Computer Science, 2008, , 435-461.	1.3	9
113	Agent assisted interactive algorithm for computationally demanding multiobjective optimization problems. Computers and Chemical Engineering, 2015, 77, 105-115.	3.8	8
114	Artificial Decision Maker Driven by PSO: An Approach for Testing Reference Point Based Interactive Methods. Lecture Notes in Computer Science, 2018, , 274-285.	1.3	8
115	An Artificial Decision Maker for Comparing Reference Point Based Interactive Evolutionary Multiobjective Optimization Methods. Lecture Notes in Computer Science, 2021, , 619-631.	1.3	8
116	Multi-scenario multi-objective robust optimization under deep uncertainty: A posteriori approach. Environmental Modelling and Software, 2021, 144, 105134.	4.5	8
117	Interactive Nonlinear Multiobjective Procedures. , 2003, , 227-276.		7
118	Interactive reference direction approach using implicit parametrization for nonlinear multiobjective optimization. Journal of Multi-Criteria Decision Analysis, 2005, 13, 115-123.	1.9	7
119	Multiobjective shape design in a ventilation system with a preference-driven surrogate-assisted evolutionary algorithm. , 2019, , .		7
120	On the Extension of the DIRECT Algorithm to Multiple Objectives. Journal of Global Optimization, 2021, 79, 387-412.	1.8	7
121	Verbal ordinal classification with multicriteria decision aiding. European Journal of Operational Research, 2008, 185, 964-983.	5.7	6
122	An interactive surrogate-based method for computationally expensive multiobjective optimisation. Journal of the Operational Research Society, 2019, 70, 898-914.	3.4	6
123	Data-driven Interactive Multiobjective Optimization: Challenges and a Generic Multi-agent Architecture. Procedia Computer Science, 2020, 176, 281-290.	2.0	6
124	Why Use Interactive Multi-Objective Optimization in Chemical Process Design?. Advances in Process Systems Engineering, 2008, , 153-188.	0.3	6
125	On generalized trade-off directions in nonconvex multiobjective optimization. Mathematical Programming, 2002, 92, 141-151.	2.4	5
126	Interactive poster: Interactive multiobjective optimization - a new application area for visual analytics. , 2009, , .		5

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127	ANOVA-MOP: ANOVA Decomposition for Multiobjective Optimization. SIAM Journal on Optimization, 2018, 28, 3260-3289.	2.0	5
128	DESDEO: An Open Framework for Interactive Multiobjective Optimization. Profiles in Operations Research, 2019, , 67-94.	0.4	5
129	Interactive Multiobjective Optimization for 3D HDR Brachytherapy Applying IND-NIMBUS. Lecture Notes in Economics and Mathematical Systems, 2010, , 117-131.	0.3	5
130	A New Paradigm in Interactive Evolutionary Multiobjective Optimization. Lecture Notes in Computer Science, 2020, , 243-256.	1.3	5
131	Comparing interactive evolutionary multiobjective optimization methods with an artificial decision maker. Complex & Intelligent Systems, 2023, 9, 1165-1181.	6.5	5
132	Comparing graphic and symbolic classification in interactive multiobjective optimization. Journal of Multi-Criteria Decision Analysis, 2003, 12, 321-335.	1.9	4
133	Solving multiobjective optimization problems with decision uncertainty: an interactive approach. Journal of Business Economics, 2019, 89, 25-51.	1.9	4
134	Potential of interactive multiobjective optimization in supporting the design of a groundwater biodenitrification process. Journal of Environmental Management, 2020, 254, 109770.	7.8	4
135	Interactive Multiobjective Robust Optimization with NIMBUS. Communications in Computer and Information Science, 2018, , 60-76.	0.5	4
136	An Interactive Framework for Offline Data-Driven Multiobjective Optimization. Lecture Notes in Computer Science, 2020, , 97-109.	1.3	4
137	Interactivized: Visual Interaction for Better Decisions With Interactive Multiobjective Optimization. IEEE Access, 2022, 10, 33661-33678.	4.2	4
138	Characterizing generalized trade-off directions. Mathematical Methods of Operations Research, 2003, 57, 89-100.	1.0	3
139	Exact extension of the DIRECT algorithm to multiple objectives. AIP Conference Proceedings, 2019, , .	0.4	3
140	IRA-EMO: Interactive Method Using Reservation and Aspiration Levels for Evolutionary Multiobjective Optimization. Lecture Notes in Computer Science, 2019, , 618-630.	1.3	3
141	Why Use Interactive Multi-Objective Optimization in Chemical Process Design?. Advances in Process Systems Engineering, 2017, , 157-197.	0.3	2
142	Interactive Multiobjective Optimization of Superstructure SMB Processes. Lecture Notes in Economics and Mathematical Systems, 2009, , 221-230.	0.3	2
143	Interactive MCDM Support System in the Internet. Lecture Notes in Economics and Mathematical Systems, 1998, , 424-433.	0.3	2
144	An Approach to the Automatic Comparison of Reference Point-Based Interactive Methods for Multiobjective Optimization. IEEE Access, 2021, 9, 150037-150048.	4.2	2

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145	Interactive multiobjective optimization for finding the most preferred exercise therapy modality in knee osteoarthritis. Annals of Medicine, 2022, 54, 181-194.	3.8	2
146	LR-NIMBUS: an interactive algorithm for uncertain multiobjective optimization with lightly robust efficient solutions. Journal of Global Optimization, 2022, 83, 843-863.	1.8	2
147	Special issue on global optimization with multiple objectives. Journal of Global Optimization, 2016, 64, 1-2.	1.8	1
148	Preface on the Special Issue Global Optimization with Multiple Criteria: Theory, Methods and Applications. Journal of Global Optimization, 2019, 75, 1-2.	1.8	1
149	Interactive Multiobjective Optimization in Lot Sizing with Safety Stock and Safety Lead Time. Lecture Notes in Computer Science, 2021, , 208-221.	1.3	1
150	Handling Preferences in the "Pre-conflicting" Phase of Decision Making Processes under Multiple Criteria. Lecture Notes in Computer Science, 2011, , 234-246.	1.3	1
151	APROS-NIMBUS: Dynamic Process Simulator and Interactive Multiobjective Optimization in Plant Automation. Computer Aided Chemical Engineering, 2013, , 871-876.	0.5	1
152	On the Use of Preferential Weights in Interactive Reference Point Based Methods. Lecture Notes in Economics and Mathematical Systems, 2009, , 211-220.	0.3	1
153	Optimistic NAUTILUS navigator for multiobjective optimization with costly function evaluations. Journal of Global Optimization, 2022, 83, 865-889.	1.8	1
154	Multi-criteria optimization in industry. OR Spectrum, 2022, 44, 303-305.	3.4	1
155	Preface of the special issue OR: connecting sciences supported by global optimization related to the 25th European conference on operational research (EURO XXV 2012). Journal of Global Optimization, 2014, 60, 1-3.	1.8	0
156	Preface of the special issue on global multiobjective optimization. Journal of Global Optimization, 2021, 80, 1-2.	1.8	0
157	Treating Ordinal Criteria in Stochastic Weight Space Analysis. Lecture Notes in Economics and Mathematical Systems, 2001, , 285-293.	0.3	0
158	A Simple Indicator Based Evolutionary Algorithm for Set-Based Minmax Robustness. Lecture Notes in Computer Science, 2018, , 286-297.	1.3	0