Immanuel M Bomze

List of Publications by Year
in descending order

104 papers	3,321 citations	186265 28 h-index	197818 49 g-index
106 all docs	106 docs citations	106 times ranked	1735 citing authors

#	Article	IF	Citations
1	The Maximum Clique Problem. , 1999, , 1-74.		468
2	Forty years of the European Journal of Operational Research: A bibliometric overview. European Journal of Operational Research, 2017, 262, 803-816.	5.7	242
3	Title is missing!. Journal of Global Optimization, 2002, 24, 163-185.	1.8	168
4	Lotka-Volterra equation and replicator dynamics: A two-dimensional classification. Biological Cybernetics, 1983, 48, 201-211.	1.3	157
5	On Copositive Programming and Standard Quadratic Optimization Problems. Journal of Global Optimization, 2000, 18, 301-320.	1.8	145
6	On Standard Quadratic Optimization Problems. Journal of Global Optimization, 1998, 13, 369-387.	1.8	126
7	Evolution towards the Maximum Clique. Journal of Global Optimization, 1997, 10, 143-164.	1.8	124
8	Copositive optimization â€" Recent developments and applications. European Journal of Operational Research, 2012, 216, 509-520.	5.7	107
9	Non-cooperative two-person games in biology: A classification. International Journal of Game Theory, 1986, 15, 31-57.	0.5	97
10	Lotka-Volterra equation and replicator dynamics: new issues in classification. Biological Cybernetics, 1995, 72, 447-453.	1.3	74
11	Graph-based quadratic optimization: A fast evolutionary approach. Computer Vision and Image Understanding, 2011, 115, 984-995.	4.7	65
12	Dynamical aspects of evolutionary stability. Monatshefte Fur Mathematik, 1990, 110, 189-206.	0.9	62
13	Cross entropy minimization in uninvadable states of complex populations. Journal of Mathematical Biology, 1991, 30, 73-87.	1.9	61
14	Regularity versus Degeneracy in Dynamics, Games, and Optimization: A Unified Approach to Different Aspects. SIAM Review, 2002, 44, 394-414.	9.5	57
15	Does Neutral Stability Imply Lyapunov Stability?. Games and Economic Behavior, 1995, 11, 173-192.	0.8	56
16	Infection and immunization: A new class of evolutionary game dynamics. Games and Economic Behavior, 2011, 71, 193-211.	0.8	53
17	Think co(mpletely)positive ! Matrix properties, examples and a clustered bibliography on copositive optimization. Journal of Global Optimization, 2012, 52, 423-445.	1.8	50
18	Game Theoretical Foundations of Evolutionary Stability. Lecture Notes in Economics and Mathematical Systems, 1989, , .	0.3	49

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19	New and old bounds for standard quadratic optimization: dominance, equivalence and incomparability. Mathematical Programming, 2008, 115, 31-64.	2.4	47
20	Stability by Mutation in Evolutionary Games. Games and Economic Behavior, 1995, 11, 146-172.	0.8	45
21	Annealed replication: a new heuristic for the maximum clique problem. Discrete Applied Mathematics, 2002, 121, 27-49.	0.9	44
22	Branch-and-bound approaches to standard quadratic optimization problems. Journal of Global Optimization, 2002, 22, 17-37.	1.8	39
23	Evolutionary Approach to the Maximum Clique Problem: Empirical Evidence on a Larger Scale. Nonconvex Optimization and Its Applications, 1997, , 95-108.	0.1	39
24	Stationary distributions under mutation-selection balance: structure and properties. Advances in Applied Probability, 1996, 28, 227-251.	0.7	38
25	A finite algorithm for solving general quadratic problems. Journal of Global Optimization, 1994, 4, 1-16.	1.8	37
26	A Global Optimization Algorithm for Concave Quadratic Programming Problems. SIAM Journal on Optimization, 1993, 3, 826-842.	2.0	34
27	A Complementary Pivoting Approach to the Maximum Weight Clique Problem. SIAM Journal on Optimization, 2002, 12, 928-948.	2.0	32
28	The role of mendelian genetics in strategic models on animal behaviour. Journal of Theoretical Biology, 1983, 101, 19-38.	1.7	30
29	Block pivoting and shortcut strategies for detecting copositivity. Linear Algebra and Its Applications, 1996, 248, 161-184.	0.9	30
30	On the cp-Rank and Minimal cp Factorizations of a Completely Positive Matrix. SIAM Journal on Matrix Analysis and Applications, 2013, 34, 355-368.	1.4	30
31	New results on the cp-rank and related properties of co(mpletely)positive matrices. Linear and Multilinear Algebra, 2015, 63, 384-396.	1.0	28
32	New Lower Bounds and Asymptotics for the cp-Rank. SIAM Journal on Matrix Analysis and Applications, 2015, 36, 20-37.	1.4	27
33	Linear-Time Copositivity Detection for Tridiagonal Matrices and Extension to Block-Tridiagonality. SIAM Journal on Matrix Analysis and Applications, 2000, 21, 840-848.	1.4	25
34	Narrowing the difficulty gap for the Celisâ€"Dennisâ€"Tapia problem. Mathematical Programming, 2015, 151, 459-476.	2.4	25
35	Copositivity and constrained fractional quadratic problems. Mathematical Programming, 2014, 146, 325-350.	2.4	24
36	Extended stellar systems in the solar neighborhood. Astronomy and Astrophysics, 2020, 639, A64.	5.1	24

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37	Using copositivity for global optimality criteria in concave quadratic programming problems. Mathematical Programming, 1993, 62, 575-580.	2.4	23
38	From seven to eleven: Completely positive matrices with high cp-rank. Linear Algebra and Its Applications, 2014, 459, 208-221.	0.9	23
39	Copositive Relaxation Beats Lagrangian Dual Bounds in Quadratically and Linearly Constrained Quadratic Optimization Problems. SIAM Journal on Optimization, 2015, 25, 1249-1275.	2.0	20
40	Global Escape Strategies for Maximizing Quadratic Forms over a Simplex. Journal of Global Optimization, 1997, 11, 325-338.	1.8	18
41	Perronâ€"Frobenius property of copositive matrices, and a block copositivity criterion. Linear Algebra and Its Applications, 2008, 429, 68-71.	0.9	18
42	The ι Ophiuchi region revisited with Gaia EDR3. Astronomy and Astrophysics, 2021, 652, A2.	5.1	18
43	Ellipsoidal Approach to Box-Constrained Quadratic Problems. Journal of Global Optimization, 2004, 28, 1-15.	1.8	17
44	A note on Burerâ€™s copositive representation of mixed-binary QPs. Optimization Letters, 2010, 4, 465-472.	1.6	17
45	Copositivity detection by difference-of-convex decomposition and Ï‰-subdivision. Mathematical Programming, 2013, 138, 365-400.	2.4	17
46	A dynamical characterization of evolutionarily stable states. Annals of Operations Research, 1992, 37, 229-244.	4.1	16
47	Stationary distributions under mutation-selection balance: structure and properties. Advances in Applied Probability, 1996, 28, 227-251.	0.7	16
48	Quartic Formulation of Standard Quadratic Optimization Problems. Journal of Global Optimization, 2005, 32, 181-205.	1.8	16
49	Multi-Standard Quadratic Optimization: interior point methods and cone programming reformulation. Computational Optimization and Applications, 2010, 45, 237-256.	1.6	15
50	New results for molecular formation under pairwise potential minimization. Computational Optimization and Applications, 2007, 38, 329-349.	1.6	13
51	One-third rules with equality: Second-order evolutionary stability conditions in finite populations. Journal of Theoretical Biology, 2008, 254, 616-620.	1.7	13
52	Quadratic factorization heuristics for copositive programming. Mathematical Programming Computation, 2011, 3, 37-57.	4.8	13
53	The structure of completely positive matrices according to their CP-rank and CP-plus-rank. Linear Algebra and Its Applications, 2015, 482, 191-206.	0.9	13
54	Extended trust-region problems with one or two balls: exact copositive and Lagrangian relaxations. Journal of Global Optimization, 2018, 71, 551-569.	1.8	13

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55	The Complexity of Simple Models—A Study of Worst and Typical Hard Cases for the Standard Quadratic Optimization Problem. Mathematics of Operations Research, 2018, 43, 651-674.	1.3	13
56	Undominated d.c. Decompositions of Quadratic Functions and Applications to Branch-and-Bound Approaches. Computational Optimization and Applications, 2004, 28, 227-245.	1.6	12
57	Copositivity cuts for improving SDP bounds on the clique number. Mathematical Programming, 2010, 124, 13-32.	2.4	12
58	A first-order interior-point method for linearly constrained smooth optimization. Mathematical Programming, 2011, 127, 399-424.	2.4	12
59	Lotka-Volterra equation and replicator dynamics: new issues in classification. Biological Cybernetics, 1995, 72, 447-453.	1.3	12
60	Rounding on the standard simplex: regular grids for global optimization. Journal of Global Optimization, 2014, 59, 243-258.	1.8	11
61	A fresh CP look at mixed-binary QPs: new formulations and relaxations. Mathematical Programming, 2017, 166, 159-184.	2.4	11
62	First-order Methods for the Impatient: Support Identification in Finite Time with Convergent Frank–Wolfe Variants. SIAM Journal on Optimization, 2019, 29, 2211-2226.	2.0	11
63	Nonlinear Optimization. Lecture Notes in Mathematics, 2010, , .	0.2	10
64	Standard bi-quadratic optimization problems and unconstrained polynomial reformulations. Journal of Global Optimization, 2012, 52, 663-687.	1.8	10
65	Copositivity for second-order optimality conditions in general smooth optimization problems. Optimization, 2016, 65, 779-795.	1.7	10
66	Frank–Wolfe and friends: a journey into projection-free first-order optimization methods. 4or, 2021, 19, 313-345.	1.6	10
67	Active Set Complexity of the Away-Step Frank–Wolfe Algorithm. SIAM Journal on Optimization, 2020, 30, 2470-2500.	2.0	9
68	A New "Annealed" Heuristic for the Maximum Clique Problem. Nonconvex Optimization and Its Applications, 2000, , 78-95.	0.1	8
69	Improved SDP bounds for minimizing quadratic functions over the $$ell^{1}$$ -ball. Optimization Letters, 2006, 1, 49-59.	1.6	7
70	A Conic Duality Frank–Wolfe-Type Theorem via Exact Penalization in Quadratic Optimization. Mathematics of Operations Research, 2009, 34, 83-91.	1.3	7
71	Solving Two-Stage Stochastic Steiner Tree Problems by Two-Stage Branch-and-Cut. Lecture Notes in Computer Science, 2010, , 427-439.	1.3	7
72	Building a completely positive factorization. Central European Journal of Operations Research, 2018, 26, 287-305.	1.8	6

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73	Remarks on the recursive structure of copositivity. Journal of Information and Optimization Sciences, 1987, 8, 243-260.	0.3	5
74	Two-stage stochastic standard quadratic optimization. European Journal of Operational Research, 2022, 299, 21-34.	5.7	5
75	The combinatorics of pivoting for the maximum weight clique. Operations Research Letters, 2004, 32, 523-529.	0.7	4
76	Unconstrained formulation of standard quadratic optimization problems. Top, 2012, 20, 35-51.	1.6	4
77	Constraint selection in a build-up interior-point cutting-plane method for solving relaxations of the stable-set problem. Mathematical Methods of Operations Research, 2013, 78, 35-59.	1.0	4
78	Hessian Barrier Algorithms for Linearly Constrained Optimization Problems. SIAM Journal on Optimization, 2019, 29, 2100-2127.	2.0	4
79	Trust Your Data or Notâ€"StQP Remains StQP: Community Detection via Robust Standard Quadratic Optimization. Mathematics of Operations Research, 2021, 46, 301-316.	1.3	4
80	Interplay of non-convex quadratically constrained problems with adjustable robust optimization. Mathematical Methods of Operations Research, 2021, 93, 115-151.	1.0	4
81	Copositive Optimization. , 2008, , 561-564.		4
82	The dynamics of self-evaluation. Applied Mathematics and Computation, 1994, 64, 47-63.	2.2	3
83	HYPER SENSITIVITY ANALYSIS OF PORTFOLIO OPTIMIZATION PROBLEMS. Asia-Pacific Journal of Operational Research, 2004, 21, 297-317.	1.3	3
84	Nonconvex minâ€"max fractional quadratic problems under quadratic constraints: copositive relaxations. Journal of Global Optimization, 2019, 75, 227-245.	1.8	3
85	Constructing Patterns of (Many) ESSs Under Support Size Control. Dynamic Games and Applications, 2020, 10, 618-640.	1.9	3
86	Global Optimization: A Quadratic Programming Perspective. Lecture Notes in Mathematics, 2010, , 1-53.	0.2	3
87	Uniform Barriers and Evolutionarily Stable Sets. , 1998, , 225-243.		3
88	Measurable supports, reducible spaces and the structure of the optimal ?-field in unbiased estimation. Monatshefte Fur Mathematik, 1986, 101, 27-38.	0.9	2
89	Generalizing convexity for second order optimality conditions. Lecture Notes in Economics and Mathematical Systems, 1994, , 137-144.	0.3	2
90	Separable standard quadratic optimization problems. Optimization Letters, 2012, 6, 857-866.	1.6	2

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91	Does moral play equilibrate?. Economic Theory, 2021, 71, 305-315.	0.9	2
92	Copositivity Aspects of Standard Quadratic Optimization Problems. , 2000, , 1-11.		2
93	Mining for diamondsâ€"Matrix generation algorithms for binary quadratically constrained quadratic problems. Computers and Operations Research, 2022, 142, 105735.	4.0	2
94	Fast Cluster Detection in Networks by First Order Optimization. SIAM Journal on Mathematics of Data Science, 2022, 4, 285-305.	1.8	2
95	Notoriously hard (mixed-)binary QPs: empirical evidence on new completely positive approaches. Computational Management Science, 2019, 16, 593-619.	1.3	1
96	Copositivity and nonconvex optimization. , 1992, , 75-79.		1
97	Parallelizable evolutionary dynamics principles for solving the maximum clique problem. Lecture Notes in Computer Science, 1996, , 676-685.	1.3	1
98	Optimization of functions with rank-two variation over a box. European Journal of Operational Research, 2005, 161, 598-617.	5.7	0
99	Copositivity and Complete Positivity. Oberwolfach Reports, 2017, 14, 3071-3120.	0.0	0
100	Emerging and innovative OR applications: a special issue in honor of Walter J. Gutjahr. Central European Journal of Operations Research, 2018, 26, 259-263.	1.8	0
101	On minimal HÃ¶lder gaps and Shannon entropy balance. Portugaliae Mathematica, 2018, 75, 1-10.	0.4	0
102	Pure infectionâ€"immunization dynamics for partnership games: A correction. Games and Economic Behavior, 2019, 114, 315-317.	0.8	0
103	Egon Balas (1922-2019). European Journal of Operational Research, 2019, 278, 1-2.	5.7	0
104	Uncertainty Preferences in Robust Mixed-Integer Linear Optimization with Endogenous Uncertainty. SIAM Journal on Optimization, 2022, 32, 292-318.	2.0	0