Arnold Neumaier

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

126 papers	5,210 citations	32 h-index	71 g-index
128 ext. papers	5,781 ext. citations	2.1 avg, IF	5.94 L-index

#	Paper	IF	Citations
126	Rigorous Global Filtering Methods with Interval Unions. *Studies in Computational Intelligence*, **2020**, 249-267	0.8	1
125	Rigorous packing of unit squares into a circle. *Journal of Global Optimization*, **2019**, 73, 547-565	1.5	1
124	A manifold-based approach to sparse global constraint satisfaction problems. *Journal of Global Optimization*, **2019**, 75, 949-971	1.5	
123	An Optimal Subgradient Algorithm with Subspace Search for Costly Convex Optimization Problems **2019**, 45, 883-910		1
122	A computational study of global optimization solvers on two trust region subproblems. *Journal of Global Optimization*, **2018**, 71, 915-934	1.5	3
121	MINQ8: general definite and bound constrained indefinite quadratic programming. *Computational Optimization and Applications*, **2018**, 69, 351-381	1.4	8
120	An optimal subgradient algorithm for large-scale bound-constrained convex optimization. *Mathematical Methods of Operations Research*, **2017**, 86, 123-147	1	5
119	Optimal subgradient algorithms for large-scale convex optimization in simple domains. *Numerical Algorithms*, **2017**, 76, 1071-1097	2.1	6
118	Using interval unions to solve linear systems of equations with uncertainties. *BIT Numerical Mathematics*, **2017**, 57, 901-926	1.7	3
117	A robust approach for finding all well-separated solutions of sparse systems of nonlinear equations. *Numerical Algorithms*, **2017**, 76, 163-189	2.1	4
116	Certificates of infeasibility via nonsmooth optimization. *Journal of Global Optimization*, **2017**, 69, 157-182	1.5	2
115	Bounding basis reduction properties. *Designs, Codes, and Cryptography*, **2017**, 84, 237-259	1.2	6
114	Solving structured nonsmooth convex optimization with complexity (mathcal {O}(varepsilon ^{-1/2})). *Top*, **2017**, 26, 110	1.3	2
113	Worst case error bounds for the solution of uncertain Poisson equations with mixed boundary conditions. *Journal of Computational and Applied Mathematics*, **2016**, 303, 40-55	2.4	
112	Constraint aggregation for rigorous global optimization. *Mathematical Programming*, **2016**, 155, 375-401	2.1	6
111	OSGA: a fast subgradient algorithm with optimal complexity. *Mathematical Programming*, **2016**, 158, 1-21	2.1	10
110	Linear and parabolic relaxations for quadratic constraints. *Journal of Global Optimization*, **2016**, 65, 457-486	1.5	1

109	Faster LLL-type Reduction of Lattice Bases **2016**,		5
108	Computer Simulation of the Characteristic Curves of Pure Fluids. *Journal of Chemical & Engineering Data*, **2016**, 61, 2720-2728	2.8	12
107	The Characteristic Curves of Water. *International Journal of Thermophysics*, **2016**, 37, 1	2.1	1
106	Rigorous verification of feasibility. *Journal of Global Optimization*, **2015**, 61, 255-278	1.5	8
105	The optimization test environment. *Optimization and Engineering*, **2014**, 15, 443-468	2.1	11
104	A globally convergent method for finding all steady-state solutions of distillation columns. *AICHE Journal*, **2014**, 60, 410-414	3.6	4
103	A tree-based statistical classification algorithm (CHAID) for identifying variables responsible for the occurrence of faecal indicator bacteria during waterworks operations. *Journal of Hydrology*, **2014**, 519, 909-917	6	4
102	Analytic Representation of Critical Equations of State. *Journal of Statistical Physics*, **2014**, 155, 603-624	1.5	1
101	Global Attractivity of the Zero Solution for Wright's Equation. *SIAM Journal on Applied Dynamical Systems*, **2014**, 13, 537-563	2.8	20
100	Exclusion regions for optimization problems. *Journal of Global Optimization*, **2014**, 59, 569-595	1.5	6
99	Error bounds for initial value problems by optimization. *Soft Computing*, **2013**, 17, 1345-1356	3.5	1
98	Solving Overdetermined Eigenvalue Problems. *SIAM Journal of Scientific Computing*, **2013**, 35, A541-A560	2.6	7
97	On Solving Mixed-Integer Constraint Satisfaction Problems with Unbounded Variables. *Lecture Notes in Computer Science*, **2013**, 216-233	0.9	
96	Rigorous filtering using linear relaxations. *Journal of Global Optimization*, **2012**, 53, 441-473	1.5	7
95	Black box optimization benchmarking of the GLOBAL method. *Evolutionary Computation*, **2012**, 20, 609-639	3	10
94	DynGenPar – A Dynamic Generalized Parser for Common Mathematical Language. *Lecture Notes in Computer Science*, **2012**, 386-401	0.9	3
93	Towards a Self-Reflective, Context-Aware Semantic Representation of Mathematical Specifications. *Applied Optimization*, **2012**, 11-32		2
92	Rigorous Enclosures of Ellipsoids and Directed Cholesky Factorizations. *SIAM Journal on Matrix Analysis and Applications*, **2011**, 32, 262-285	1.5	10

91	VXQR: derivative-free unconstrained optimization based on QR factorizations. *Soft Computing*, **2011**, 15, 2287-2298	3.5	12
90	Convexity and Concavity Detection in Computational Graphs: Tree Walks for Convexity Assessment. *INFORMS Journal on Computing*, **2010**, 22, 26-43	2.4	13
89	Constraint propagation on quadratic constraints. *Constraints*, **2010**, 15, 404-429	0.3	23
88	Discrete Search in Design Optimization **2010**, 113-122		2
87	Potential Based Clouds in Robust Design Optimization. *Journal of Statistical Theory and Practice*, **2009**, 3, 225-238	0.5	13
86	Autonomous robust design optimisation with potential clouds. *International Journal of Reliability and Safety*, **2009**, 3, 23	0.9	10
85	A scaling algorithm for polynomial constraint satisfaction problems. *Journal of Global Optimization*, **2008**, 42, 327-345	1.5	5
84	SNOBFIT -- Stable Noisy Optimization by Branch and Fit. *ACM Transactions on Mathematical Software*, **2008**, 35, 1-25	2.3	128
83	Certified error bounds for uncertain elliptic equations. *Journal of Computational and Applied Mathematics*, **2008**, 218, 125-136	2.4	2
82	Robust and Automated Space System Design **2008**, 251-271		5
81	Handling Uncertainty in Higher Dimensions with Potential Clouds towards Robust Design Optimization. *Advances in Soft Computing*, **2008**, 376-382		2
80	Uncertainty modeling in autonomous robust spacecraft system design. *Proceedings in Applied Mathematics and Mechanics*, **2007**, 7, 2060041-2060042	0.2	5
79	Verified global optimization with GloptLab. *Proceedings in Applied Mathematics and Mechanics*, **2007**, 7, 1020101-1020102	0.2	2
78	On Graphs Whose Spectral Radius is Bounded by (frac{3}{2}sqrt{2}). *Graphs and Combinatorics*, **2007** , 23, 713-726	0.5	25
77	Linear Systems with Large Uncertainties, with Applications to Truss Structures. *Reliable Computing*, **2007**, 13, 149-172		75
76	New bounds for Morse clusters. *Journal of Global Optimization*, **2007**, 39, 483-494	1.5	3
75	Transposition Theorems and Qualification-Free Optimality Conditions. *SIAM Journal on Optimization*, **2007**, 17, 1035-1055	2	6
74	A comparison of complete global optimization solvers. *Mathematical Programming*, **2005**, 103, 335-356	2.1	92

73	Interval Analysis on Directed Acyclic Graphs for Global Optimization. *Journal of Global Optimization*, **2005**, 33, 541-562	1.5	58
72	Complete search in continuous global optimization and constraint satisfaction **2004**, 271-370		55
71	Complete search in continuous global optimization and constraint satisfaction. *Acta Numerica*, **2004**, 13, 271-369	15.1	193
70	Integral Approximation of Rays and Verification of Feasibility. *Reliable Computing*, **2004**, 10, 195-207		
69	Clouds, Fuzzy Sets, and Probability Intervals. *Reliable Computing*, **2004**, 10, 249-272		76
68	Safe bounds in linear and mixed-integer linear programming. *Mathematical Programming*, **2004**, 99, 283-296	2.2	100
67	Dual polar spaces as extremal distance-regular graphs. *European Journal of Combinatorics*, **2004**, 25, 269-274	0.7	
66	Exclusion Regions for Systems of Equations. *SIAM Journal on Numerical Analysis*, **2004**, 42, 383-408	2.4	30
65	Ensembles and Experiments in Classical and Quantum Physics. *International Journal of Modern Physics B*, **2003**, 17, 2937-2980	1.1	1
64	Benchmarking Global Optimization and Constraint Satisfaction Codes. *Lecture Notes in Computer Science*, **2003**, 211-222	0.9	36
63	Taylor Forms□Use and Limits. *Reliable Computing*, **2003**, 9, 43-79		79
62	Rational Functions with Prescribed Global and Local Minimizers. *Journal of Global Optimization*, **2003**, 25, 175-181	1.5	4
61	Gaussian resolutions for equilibrium density matrices. *Chemical Physics Letters*, **2003**, 381, 117-122	2.5	52
60	Fuzzy modeling in terms of surprise. *Fuzzy Sets and Systems*, **2003**, 135, 21-38	3.7	23
59	Enclosing clusters of zeros of polynomials. *Journal of Computational and Applied Mathematics*, **2003**, 156, 389-401	2.4	14
58	A New Exact Penalty Function. *SIAM Journal on Optimization*, **2003**, 13, 1141-1158	2	41
57	Grand Challenges and Scientific Standards in Interval Analysis. *Reliable Computing*, **2002**, 8, 313-320		4
56	FURTHER GENERALIZATION AND NUMERICAL IMPLEMENTATION OF PSEUDO-TIME SCHR□DINGER EQUATIONS FOR QUANTUM SCATTERING CALCULATIONS. *Journal of Theoretical and Computational Chemistry*, **2002**, 01, 1-15	1.8	13

55	Global Optimization with Nonfactorable Constraints. *Industrial & Engineering Chemistry Research*, **2002**, 41, 6413-6424	3.9	23
54	Generalized Lyapunov‐Schmidt reduction for parametrized equations at near singular points. *Linear Algebra and Its Applications*, **2001**, 324, 119-131	0.9	4
53	Estimation of parameters and eigenmodes of multivariate autoregressive models. *ACM Transactions on Mathematical Software*, **2001**, 27, 27-57	2.3	312
52	Pseudotime Schrödinger equation with absorbing potential for quantum scattering calculations. *Physical Review Letters*, **2001**, 86, 5031-4	7.4	22
51	Algorithm 808. *ACM Transactions on Mathematical Software*, **2001**, 27, 58-65	2.3	241
50	Introduction to Numerical Analysis **2001**,		85
49	Existence Verification for Singular Zeros of Complex Nonlinear Systems. *SIAM Journal on Numerical Analysis*, **2000**, 38, 360-379	2.4	22
48	A Simple Derivation of the Hansen-Bliek-Rohn-Ning-Kearfott Enclosure for Linear Interval Equations. *Reliable Computing*, **1999**, 5, 131-136		49
47	Global Optimization by Multilevel Coordinate Search. *Journal of Global Optimization*, **1999**, 14, 331-355	1.5	337
46	A global optimization method, αBB, for general twice-differentiable constrained NLPs I. Theoretical advances. *Computers and Chemical Engineering*, **1998**, 22, 1137-1158	4	365
45	Solving Ill-Conditioned and Singular Linear Systems: A Tutorial on Regularization. *SIAM Review*, **1998**, 40, 636-666	7.4	386
44	Restricted maximum likelihood estimation of covariances in sparse linear models. *Genetics Selection Evolution*, **1998**, 30, 3	4.9	292
43	Regularization of Ill-Posed Problems by Envelope Guided Conjugate Gradients. *Journal of Computational and Graphical Statistics*, **1997**, 6, 451-463	1.4	8
42	Molecular Modeling of Proteins and Mathematical Prediction of Protein Structure. *SIAM Review*, **1997**, 39, 407-460	7.4	120
41	Scaling and structural condition numbers. *Linear Algebra and Its Applications*, **1997**, 263, 157-165	0.9	3
40	PET regularization by envelope guided conjugate gradients. *IEEE Transactions on Medical Imaging*, **1996**, 15, 385-9	11.7	32
39	A new pivoting strategy for Gaussian elimination. *Linear Algebra and Its Applications*, **1996**, 240, 131-151	0.9	70
38	Second-order sufficient optimality conditions for local and global nonlinear programming. *Journal of Global Optimization*, **1996**, 9, 141-151	1.5	17

37	Hybrid norms and bounds for overdetermined linear systems. *Linear Algebra and Its Applications*, **1995**, 216, 257-265	0.9	1
36	On graphs whose smallest eigenvalue is at least □1 □2. *Linear Algebra and Its Applications*, **1995**, 226-228, 577-591	0.9	14
35	Screening by conference designs. *Biometrika*, **1995**, 82, 589-602	2	23
34	A grid algorithm for bound constrained optimization of noisy functions. *IMA Journal of Numerical Analysis*, **1995**, 15, 585-608	1.8	43
33	Rigorous verification of chaos in a molecular model. *Physical Review E*, **1994**, 50, 2682-2688	2.4	24
32	Rigorous chaos verification in discrete dynamical systems. *Physica D: Nonlinear Phenomena*, **1993**, 67, 327-346	3.3	36
31	Exceptional graphs with smallest eigenvalue -2 and related problems. *Mathematics of Computation*, **1992**, 59, 583-583	1.6	17
30	An optimality criterion for global quadratic optimization. *Journal of Global Optimization*, **1992**, 2, 201-208	3.5	12
29	Completely regular codes. *Discrete Mathematics*, **1992**, 106-107, 353-360	0.7	42
28	Krein conditions and near polygons. *Journal of Combinatorial Theory - Series A*, **1990**, 54, 201-209	1	12
27	Solving minimax problems by interval methods. *BIT Numerical Mathematics*, **1990**, 30, 742-751	1.7	32
26	The Krawczyk operator and Kantorovich□s theorem. *Journal of Mathematical Analysis and Applications*, **1990**, 149, 437-443	1.1	16
25	Distance-Regular Graphs **1989**,		740
24	Rigorous sensitivity analysis for parameter-dependent systems of equations. *Journal of Mathematical Analysis and Applications*, **1989**, 144, 16-25	1.1	24
23	Further results on linear interval equations. *Linear Algebra and Its Applications*, **1987**, 87, 155-179	0.9	11
22	An improved interval Newton operator. *Journal of Mathematical Analysis and Applications*, **1986**, 118, 194-207	1.1	10
21	On the comparison of H-matrices with M-matrices. *Linear Algebra and Its Applications*, **1986**, 83, 135-141	0.9	11
20	Interval iteration for zeros of systems of equations. *BIT Numerical Mathematics*, **1985**, 25, 256-273	1.7	36

19	Eigenwertabschätzungen für Matrizen.. *Journal Fur Die Reine Und Angewandte Mathematik*, **1984**, 1984, 206-212	1.2	
18	Exact convergence and divergence domains for the symmetric successive overrelaxation iterative (SSOR) method applied to H-matrices. *Linear Algebra and Its Applications*, **1984**, 58, 261-272	0.9	23
17	New techniques for the analysis of linear interval equations. *Linear Algebra and Its Applications*, **1984**, 58, 273-325	0.9	76
16	The extremal case of some matrix inequalities. *Archiv Der Mathematik*, **1984**, 43, 137-141	0.4	6
15	On norm three vectors in integral Euclidean lattices. I. *Mathematische Zeitschrift*, **1983**, 183, 565-574	0.7	8
14	Discrete hyperbolic geometry. *Combinatorica*, **1983**, 3, 219-237	0.9	26
13	Rectagraphs, Diagrams, and Suzuki's Sporadic Simple Group. *North-Holland Mathematics Studies*, **1982**, 65, 305-318		3
12	The second largest eigenvalue of a tree. *Linear Algebra and Its Applications*, **1982**, 46, 9-25	0.9	57
11	Quasi-residual 2-designs, (1\tfrac{1}{2})-designs, and strongly regular multigraphs. *Geometriae Dedicata*, **1982**, 12, 351	0.5	11
10	Distance matrices, dimension, and conference graphs. *Proceedings of the Koninklijke Nederlandse Akademie Van Wetenschappen Series A, Indagationes Mathematicae*, **1981**, 84, 385-391		17
9	Cliques and claws in edge-transitive strongly regular graphs. *Mathematische Zeitschrift*, **1980**, 174, 197-202	0.7	1
8	t12-Designs. *Journal of Combinatorial Theory - Series A*, **1980**, 28, 226-248	1	27
7	Distances, Graphs and Designs. *European Journal of Combinatorics*, **1980**, 1, 163-174	0.7	24
6	Strongly regular graphs with smallest eigenvalue −m. *Archiv Der Mathematik*, **1979**, 33, 392-400	0.4	62
5	On transitive commutative idempotent quasigroups. *Journal of the Australian Mathematical Society*, **1979**, 27, 411-429	0.5	
4	Taktische Konfigurationen und die Gleichungat x+bt y=c in kommutativen Ringen mit Eins. *Archiv Der Mathematik*, **1976**, 27, 267-275	0.4	
3	Inklusions- und Abstimmungssysteme. *Mathematische Zeitschrift*, **1975**, 141, 147-158	0.7	4
2	LMBOPT: a limited memory method for bound-constrained optimization. *Mathematical Programming Computation*,1	7.8	

1	Efficient unconstrained black box optimization. *Mathematical Programming Computation*,1	7.8	0