David Yang Gao

List of Publications by Year
in descending order

115 papers	1,959 citations	218592 26 h-index	289141 40 g-index
137 all docs	137 docs citations	137 times ranked	467 citing authors

#	Article	IF	Citations
1	Duality Principles in Nonconvex Systems. Nonconvex Optimization and Its Applications, 2000, , .	0.1	123
2	Title is missing!. Journal of Global Optimization, 2000, 17, 127-160.	1.1	83
3	Solutions and optimality criteria to box constrained nonconvex minimization problems. Journal of Industrial and Management Optimization, 2007, 3, 293-304.	0.8	72
4	Nonlinear elastic beam theory with application in contact problems and variational approaches. Mechanics Research Communications, 1996, 23, 11-17.	1.0	68
5	Perfect duality theory and complete solutions to a class of global optimization problems*. Optimization, 2003, 52, 467-493.	1.0	66
6	Discrete state transition algorithm for unconstrained integer optimization problems. Neurocomputing, 2016, 173, 864-874.	3.5	64
7	Canonical Duality Theory and Solutions to Constrained Nonconvex Quadratic Programming. Journal of Global Optimization, 2004, 29, 377-399.	1.1	61
8	Canonical dual approach to solving 0-1 quadratic programming problems. Journal of Industrial and Management Optimization, 2008, 4, 125-142.	0.8	58
9	Canonical duality theory: Unified understanding and generalized solution for global optimization problems. Computers and Chemical Engineering, 2009, 33, 1964-1972.	2.0	55
10	Finite deformation beam models and triality theory in dynamical post-buckling analysis. International Journal of Non-Linear Mechanics, 2000, 35, 103-131.	1.4	54
11	Solutions to quadratic minimization problems with box and integer constraints. Journal of Global Optimization, 2010, 47, 463-484.	1.1	54
12	Dual Extremum Principles in Finite Deformation Theory With Applications to Post-Buckling Analysis of Extended Nonlinear Beam Model. Applied Mechanics Reviews, 1997, 50, S64-S71.	4.5	52
13	Analytic solutions and triality theory for nonconvex and nonsmooth variational problems with applications. Nonlinear Analysis: Theory, Methods & Applications, 2000, 42, 1161-1193.	0.6	52
14	Solutions and optimality criteria for nonconvex constrained global optimization problems with connections between canonical and Lagrangian duality. Journal of Global Optimization, 2009, 45, 473-497.	1.1	48
15	A novel canonical dual computational approach for prion AGAAAAGA amyloid fibril molecular modeling. Journal of Theoretical Biology, 2011, 284, 149-157.	0.8	41
16	Global optimization for a class of fractional programming problems. Journal of Global Optimization, 2009, 45, 337-353.	1.1	36
17	Multi-scale modelling and canonical dual finite element method in phase transitions of solids. International Journal of Solids and Structures, 2008, 45, 3660-3673.	1.3	35
18	Canonical dual approach to solving the maximum cut problem. Journal of Global Optimization, 2012, 54, 341-351.	1.1	34

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19	Optimal design of water distribution networks by a discrete state transition algorithm. Engineering Optimization, 2016, 48, 603-628.	1.5	34
20	Global extremal conditions for multi-integer quadratic programming. Journal of Industrial and Management Optimization, 2008, 4, 213-225.	0.8	34
21	Pure complementary energy principle and triality theory in finite elasticity. Mechanics Research Communications, 1999, 26, 31-37.	1.0	33
22	Complete Solutions and Extremality Criteria to Polynomial Optimization Problems. Journal of Global Optimization, 2006, 35, 131-143.	1.1	33
23	Canonical dual least square method for solving general nonlinear systems of quadratic equations. Computational Optimization and Applications, 2010, 47, 335-347.	0.9	33
24	Nonconvex Semi-Linear Problems and Canonical Duality Solutions. Advances in Mechanics and Mathematics, 2003, , 261-312.	0.2	33
25	On the triality theory for a quartic polynomial optimization problem. Journal of Industrial and Management Optimization, 2012, 8, 229-242.	0.8	33
26	Bi-Complementarity and Duality: A Framework in Nonlinear Equilibria with Applications to the Contact Problem of Elastoplastic Beam Theory. Journal of Mathematical Analysis and Applications, 1998, 221, 672-697.	0.5	28
27	Complementary finite-element method for finite deformation nonsmooth mechanics. Journal of Engineering Mathematics, 1996, 30, 339-353.	0.6	27
28	Sufficient conditions and perfect duality in nonconvex minimization with inequality constraints. Journal of Industrial and Management Optimization, 2005, 1, 53-63.	0.8	26
29	Global optimal solutions to general sensor network localization problem. Performance Evaluation, 2014, 75-76, 1-16.	0.9	24
30	Canonical Duality Theory: Connections between Nonconvex Mechanics and Global Optimization. Advances in Mechanics and Mathematics, 2009, , 257-326.	0.2	23
31	Canonical Dual Solutions to Sum of Fourth-Order Polynomials Minimization Problems with Applications to Sensor Network Localization. Springer Optimization and Its Applications, 2012, , 37-54.	0.6	23
32	Post-buckling solutions of hyper-elastic beam by canonical dual finite element method. Mathematics and Mechanics of Solids, 2014, 19, 659-671.	1.5	23
33	Canonical duality for solving general nonconvex constrained problems. Optimization Letters, 2016, 10, 1763-1779.	0.9	20
34	A direct optimization method for low group delay FIR filter design. Signal Processing, 2013, 93, 1764-1772.	2.1	19
35	Canonical Dual Solutions for Fixed Cost Quadratic Programs. Springer Optimization and Its Applications, 2010, , 139-156.	0.6	18
36	Solutions and optimality criteria for nonconvex quadratic-exponential minimization problem. Mathematical Methods of Operations Research, 2008, 67, 479-491.	0.4	17

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37	Solving the canonical dual of box- and integer-constrained nonconvex quadratic programs via a deterministic direct search algorithm. Optimization Methods and Software, 2013, 28, 313-326.	1.6	17
38	Complementarity, polarity and triality in nonâ€smooth, nonâ€"convex and nonâ€"conservative Hamilton systems. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2001, 359, 2347-2367.	1.6	16
39	Global solutions to nonconvex optimization of 4th-order polynomial and log-sum-exp functions. Journal of Global Optimization, 2016, 64, 417-431.	1.1	16
40	A Comparative Study of State Transition Algorithm with Harmony Search and Artificial Bee Colony. Advances in Intelligent Systems and Computing, 2013, , 651-659.	0.5	16
41	Global extremum criteria for finite elasticity. Zeitschrift Fur Angewandte Mathematik Und Physik, 1992, 43, 924-937.	0.7	15
42	Traveling wave solutions to a reaction-diffusion equation. Zeitschrift Fur Angewandte Mathematik Und Physik, 2009, 60, 756-773.	0.7	14
43	On the Convexity of Nonlinear Elastic Energies in the Right Cauchy-Green Tensor. Journal of Elasticity, 2017, 127, 303-308.	0.9	14
44	Canonical dual solutions to nonconvex radial basis neural network optimization problem. Neurocomputing, 2014, 134, 189-197.	3.5	13
45	On topology optimization and canonical duality method. Computer Methods in Applied Mechanics and Engineering, 2018, 341, 249-277.	3.4	12
46	Duality Theory in Nonlinear Buckling Analysis for von KÃ¡rmÃ¡n Equations. Studies in Applied Mathematics, 1995, 94, 423-444.	1.1	11
47	Minimal distance between two non-convex surfaces. Optimization, 2008, 57, 705-714.	1.0	11
48	The Kortewegâ€"de Vriesâ€"Burgers equation and its approximate solution. International Journal of Computer Mathematics, 2008, 85, 853-863.	1.0	11
49	Stable trajectory of logistic map. Nonlinear Dynamics, 2014, 78, 209-217.	2.7	11
50	Postbuckling analysis of a nonlinear beam with axial functionally graded material. Journal of Engineering Mathematics, 2014, 88, 121-136.	0.6	10
51	Complementary Principle, Algorithm, and Complete Solutions to Phase Transitions in Solids Governed by Landau-Ginzburg Equation. Mathematics and Mechanics of Solids, 2004, 9, 285-305.	1.5	9
52	Anticipating synchronization through optimal feedback control. Journal of Global Optimization, 2012, 52, 281-290.	1.1	9
53	Impulsive control for synchronizing delayed discrete complex networks with switching topology. Neural Computing and Applications, 2014, 24, 59-68.	3.2	9
54	Canonical primalâ€"dual algorithm for solving fourth-order polynomial minimization problems. Applied Mathematics and Computation, 2014, 227, 246-255.	1.4	9

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55	Double well potential function and its optimization in the <inline-formula><tex-math id="M1">\begin{document}N\end{document}</tex-math></inline-formula> -dimensional real space-part â…. Journal of Industrial and Management Optimization, 2017, 13, 1291-1305.	0.8	9
56	Multiâ€Duality in Minimal Surfaceâ€"Type Problems. Studies in Applied Mathematics, 1995, 95, 127-146.	1.1	8
57	Title is missing!. Meccanica, 1999, 34, 399-399.	1.2	8
58	Analytical solutions to general anti-plane shear problems in finite elasticity. Continuum Mechanics and Thermodynamics, 2016, 28, 175-194.	1.4	8
59	Applying the canonical dual theory in optimal control problems. Journal of Global Optimization, 2012, 54, 221-233.	1.1	7
60	A study on concave optimization via canonical dual function. Journal of Computational and Applied Mathematics, 2009, 224, 459-464.	1.1	6
61	Global Optimal Trajectory in Chaos and NP-Hardness. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2016, 26, 1650142.	0.7	6
62	On modeling and global solutions for d.c. optimization problems by canonical duality theory. Applied Mathematics and Computation, 2017, 296, 168-181.	1.4	6
63	Canonical Duality Theory and Algorithm for Solving Bilevel Knapsack Problems With Applications. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2021, 51, 893-904.	5.9	6
64	Duality Theory: Triduality in Global Optimization. , 2001, , 485-491.		6
65	Stability and extremum principles for post yield analysis of finite plasticity. Acta Mechanica Sinica/Lixue Xuebao, 1994, 10, 311-325.	1.5	5
66	Minimax and Triality Theory in Nonsmooth Variational Problems. Applied Optimization, 1998, , 161-179.	0.4	5
67	Canonical Duality-Triality Theory: Bridge Between Nonconvex Analysis/Mechanics and Global Optimization in Complex System. Advances in Mechanics and Mathematics, 2017, , 1-47.	0.2	5
68	Canonical Dual Approach to Binary Factor Analysis. Lecture Notes in Computer Science, 2009, , 346-353.	1.0	4
69	Canonical duality theory and triality for solving general global optimization problems in complex systems. Mathematics and Mechanics of Complex Systems, 2015, 3, 139-161.	0.5	4
70	On unified modeling, theory, and method for solving multi-scale global optimization problems. , 2016, , .		4
71	Duality Theory: Biduality in Nonconvex Optimization. , 2001, , 477-482.		4
72	Computing lower and upper bounds on stress intensity factors in bimaterials. International Journal of Non-Linear Mechanics, 2007, 42, 336-341.	1.4	3

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73	A nonconvex dissipative system and its applications (II). Journal of Global Optimization, 2008, 40, 637-651.	1.1	3
74	Solution to nonconvex quadratic programming withÂboth inequality and box constraints. Optimization and Engineering, 2009, 10, 183-191.	1.3	3
75	On the extrema of a nonconvex functional with double-well potential in 1D. Zeitschrift Fur Angewandte Mathematik Und Physik, 2016, 67, 1.	0.7	3
76	Global solutions to a class of CEC benchmark constrained optimization problems. Optimization Letters, 2016, 10, 457-472.	0.9	3
77	Canonical Duality Theory for Topology Optimization. Advances in Mechanics and Mathematics, 2017, , 263-276.	0.2	3
78	Global Optimal Solution to Quadratic Discrete Programming Problem with Inequality Constraints. Advances in Mechanics and Mathematics, 2017, , 315-338.	0.2	3
79	Complete solutions and triality theory to a nonconvex optimization problem with double-well potential in $\mathbb{R}^n$. Numerical Algebra, Control and Optimization, 2013, 3, 271-282.	1.0	3
80	Shear Control and Analytic Solutions for 2-D Dynamic Smart Beam Theory. Journal of Intelligent Material Systems and Structures, 1998, 9, 182-188.	1.4	2
81	Title is missing!. Meccanica, 1999, 34, 167-196.	1.2	2
82	Canonical duality for solving nonconvex andÂnonsmooth optimization problem. Optimization and Engineering, 2009, 10, 153-165.	1.3	2
83	Video Driven Traffic Modelling in Paramics. , 2013, , .		2
84	Canonical Primalâ€"Dual Method for Solving Nonconvex Minimization Problems. Advances in Mechanics and Mathematics, 2017, , 223-247.	0.2	2
85	Triality Theory for General Unconstrained Global Optimization Problems. Advances in Mechanics and Mathematics, 2017, , 127-153.	0.2	2
86	Intuitive Haptics Interface with Accurate Force Estimation and Reflection at Nanoscale. Springer Proceedings in Mathematics and Statistics, 2015, , 507-514.	0.1	2
87	Global Solutions to Spherically Constrained Quadratic Minimization via Canonical Duality Theory. Advances in Mechanics and Mathematics, 2017, , 291-314.	0.2	2
88	Calculating Global Minimizers of a Nonconvex Energy Potential. , 2002, , .		2
89	An asymptotic expression of the SchrÃ¶dinger equation. Zeitschrift Fur Angewandte Mathematik Und Physik, 2009, 60, 363-375.	0.7	1
90	Global optimization by canonical dual function. Journal of Computational and Applied Mathematics, 2010, 234, 538-544.	1.1	1

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91	Video Driven Traffic Modelling. , 2013, , .		1
92	Canonical finite element method for solving nonconvex variational problems to post buckling beam problem. AIP Conference Proceedings, 2016, , .	0.3	1
93	Canonical Duality Theory for Solving Non-monotone Variational Inequality Problems. Advances in Mechanics and Mathematics, 2017, , 155-171.	0.2	1
94	On D.C. Optimization Problems. Advances in Mechanics and Mathematics, 2017, , 203-221.	0.2	1
95	On modeling and complete solutions to general fixpoint problems in multi-scale systems with applications. Fixed Point Theory and Applications, 2018, 2018, .	1.1	1
96	A Novel Canonical Duality Theory for Solving 3-D Topology Optimization Problems. Advances in Mechanics and Mathematics, 2019, , 209-246.	0.2	1
97	Canonical Duality in Nonsmooth, Constrained Concave Minimization. , 2006, , 305-314.		1
98	Analytic Solutions to Large Deformation Problems Governed by Generalized Neo-Hookean Model. Advances in Mechanics and Mathematics, 2017, , 49-67.	0.2	1
99	Analytic Solutions to 3-D Finite Deformation Problems Governed by St Venantâ€"Kirchhoff Material. Advances in Mechanics and Mathematics, 2017, , 69-88.	0.2	1
100	Canonical Duality Method for Solving Kantorovich Mass Transfer Problem. Advances in Mechanics and Mathematics, 2017, , 105-126.	0.2	1
101	Tri-Duality Theory in Phase Transformations of Ferroelectric Crystals with Random Defects. Advances in Mechanics and Mathematics, 2004, , 67-84.	0.2	1
102	Canonical Dual Control for Nonconvex Distributed-Parameter Systems. , 2001, , .		1
103	Nonsmooth and Nonconvex Dynamics: Duality, Polarity and Complementary Extremum Principles. Nonconvex Optimization and Its Applications, 2001, , 95-140.	0.1	1
104	Canonical Duality for Radial Basis Neural Networks. Advances in Intelligent Systems and Computing, 2013, , 1189-1197.	0.5	1
105	Application of Canonical Duality Theory to Fixed Point Problem. Springer Proceedings in Mathematics and Statistics, 2015, , 157-163.	0.1	1
106	Contact problems and dual variational inequality of 2-D elastoplastic beam theory. Applied Mathematics and Mechanics (English Edition), 1996, 17, 953-968.	1.9	0
107	Global optimization over a box via canonical dual function. Journal of Computational and Applied Mathematics, 2011, 235, 1141-1147.	1.1	0
108	Canonical Dual Approach for Minimizing a Nonconvex Quadratic Function over a Sphere. Springer Proceedings in Mathematics and Statistics, 2015, , 149-156.	0.1	0

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109	Dynamical Analysis of Neural Networks with Time-Varying Delays Using the LMI Approach. Lecture Notes in Computer Science, 2015, , 297-305.	1.0	0
110	Canonical Duality-Triality Theory: Unified Understanding for Modeling, Problems, and NP-Hardness in Global Optimization of Multi-Scale Systems. Advances in Mechanics and Mathematics, 2019, , 3-50.	0.2	0
111	Efficient Deterministic Algorithm for Huge-Sized Noisy Sensor Localization Problems via Canonical Duality Theory. IEEE Transactions on Cybernetics, 2019, 51, 1-13.	6.2	0
112	Duality in Nonconvex Finite Deformation Theory: A Survey and Unified Approach. Nonconvex Optimization and Its Applications, 2001, , 67-83.	0.1	0
113	Duality, Complementarity, and Polarity in Nonsmooth/Nonconvex Dynamics. Advances in Mechanics and Mathematics, 2004, , 21-65.	0.2	0
114	Impulsive Synchronization of State Delayed Discrete Complex Networks with Switching Topology. Lecture Notes in Computer Science, 2012, , 50-57.	1.0	0
115	Model Modification in Scheduling of Batch Chemical Processes. Springer Proceedings in Mathematics and Statistics, 2015, , 89-97.	0.1	0