Jack Xin

List of Publications by Year
in descending order

97 papers	2,395 citations	318942 23 h-index	242451 47 g-index
99 all docs	99 docs citations	99 times ranked	1401 citing authors

#	Article	IF	Citations
1	Lorentzian peak sharpening and sparse blind source separation for NMR spectroscopy. Signal, Image and Video Processing, 2022, 16, 633-641.	1.7	4
2	A Semi-Lagrangian Computation of Front Speeds of G-equation in ABC and Kolmogorov Flows with Estimation via Ballistic Orbits. Multiscale Modeling and Simulation, 2022, 20, 107-117.	0.6	4
3	An Integrated Approach to Produce Robust Deep Neural Network Models with High Efficiency. Lecture Notes in Computer Science, 2022, , 451-465.	1.0	0
4	An Integrated Recurrent Neural Network and Regression Model with Spatial and Climatic Couplings for Vector-borne Disease Dynamics. , 2022, , .		0
5	Computing effective diffusivities in 3D time-dependent chaotic flows with a convergent Lagrangian numerical method. ESAIM: Mathematical Modelling and Numerical Analysis, 2022, 56, 1521-1544.	0.8	2
6	A Convergent Interacting Particle Method and Computation of KPP Front Speeds in Chaotic Flows. SIAM Journal on Numerical Analysis, 2022, 60, 1136-1167.	1.1	2
7	DeepParticle: Learning invariant measure by a deep neural network minimizing Wasserstein distance on data generated from an interacting particle method. Journal of Computational Physics, 2022, 464, 111309.	1.9	3
8	RARTS: An Efficient First-Order Relaxed Architecture Search Method. IEEE Access, 2022, 10, 65901-65912.	2.6	1
9	Enhanced diffusivity in perturbed senile reinforced random walk models. Asymptotic Analysis, 2021, 122, 87-104.	0.2	0
10	A Spatial-temporal Graph based Hybrid Infectious Disease Model with Application to COVID-19. , 2021, , .		1
11	Error Estimates for a POD Method for Solving Viscous G-Equations in Incompressible Cellular Flows. SIAM Journal of Scientific Computing, 2021, 43, A636-A662.	1.3	4
12	Sharp Error Estimates on a Stochastic Structure-Preserving Scheme in Computing Effective Diffusivity of 3D Chaotic Flows. Multiscale Modeling and Simulation, 2021, 19, 1167-1189.	0.6	5
13	A Weighted Difference of Anisotropic and Isotropic Total Variation for Relaxed Mumford--Shah Color and Multiphase Image Segmentation. SIAM Journal on Imaging Sciences, 2021, 14, 1078-1113.	1.3	7
14	Structured Sparsity of Convolutional Neural Networks via Nonconvex Sparse Group Regularization. Frontiers in Applied Mathematics and Statistics, 2021, 6, .	0.7	5
15	Learning quantized neural nets by coarse gradient method for nonlinear classification. Research in Mathematical Sciences, 2021, 8, 1.	0.5	0
16	Improving Efficient Semantic Segmentation Networks by Enhancing Multi-scale Feature Representation via Resolution Path Based Knowledge Distillation and Pixel Shuffle. Lecture Notes in Computer Science, 2021, , 325-336.	1.0	1
17	Convergence Analysis of Stochastic Structure-Preserving Schemes for Computing Effective Diffusivity in Random Flows. SIAM Journal on Numerical Analysis, 2020, 58, 3040-3067.	1.1	3
18	Two-Grid Based Adaptive Proper Orthogonal Decomposition Method for Time Dependent Partial Differential Equations. Journal of Scientific Computing, 2020, 84, 1.	1.1	2

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19	Convergence of a Relaxed Variable Splitting Coarse Gradient Descent Method for Learning Sparse Weight Binarized Activation Neural Network. Frontiers in Applied Mathematics and Statistics, 2020, 6, .	0.7	1
20	A Study on Graph-Structured Recurrent Neural Networks and Sparsification with Application to Epidemic Forecasting. Advances in Intelligent Systems and Computing, 2020, , 730-739.	0.5	6
21	Computing Residual Diffusivity by Adaptive Basis Learning via Super-Resolution Deep Neural Networks. Advances in Intelligent Systems and Computing, 2020, , 279-290.	0.5	1
22	Sparsity Meets Robustness: Channel Pruning for the Feynman-Kac Formalism Principled Robust Deep Neural Nets. Lecture Notes in Computer Science, 2020, , 362-381.	1.0	7
23	A Recurrent Neural Network and Differential Equation based Spatiotemporal Infectious Disease Model with Application to COVID-19. , 2020, , .		1
24	AutoShuffleNet: Learning Permutation Matrices via an Exact Lipschitz Continuous Penalty in Deep Convolutional Neural Networks. , 2020, , .		9
25	Nonconvex Regularization for Network Slimming: Compressing CNNs Even More. Lecture Notes in Computer Science, 2020, , 39-53.	1.0	5
26	A Recurrent Neural Network and Differential Equation based Spatiotemporal Infectious Disease Model with Application to COVID-19. , 2020, , .		1
27	Blended coarse gradient descent for full quantization of deep neural networks. Research in Mathematical Sciences, 2019, 6, 1.	0.5	36
28	Sparse Kalman filtering approaches to realized covariance estimation from high frequency financial data. Mathematical Programming, 2019, 176, 247-278.	1.6	2
29	Deep Learning for Real-Time Crime Forecasting and Its Ternarization. Chinese Annals of Mathematics Series B, 2019, 40, 949-966.	0.2	45
30	Minimization of transformed $$L_1$$ L 1 penalty: theory, difference of convex function algorithm, and robust application in compressed sensing. Mathematical Programming, 2018, 169, 307-336.	1.6	76
31	Curvature Effect in Shear Flow: Slowdown of Turbulent Flame Speeds with Markstein Number. Communications in Mathematical Physics, 2018, 359, 515-533.	1.0	2
32	Three $$l_1$$ Based Nonconvex Methods in Constructing Sparse Mean Reverting Portfolios. Journal of Scientific Computing, 2018, 75, 1156-1186.	1.1	2
33	BinaryRelax: A Relaxation Approach for Training Deep Neural Networks with Quantized Weights. SIAM Journal on Imaging Sciences, 2018, 11, 2205-2223.	1.3	39
34	Computing Effective Diffusivity of Chaotic and Stochastic Flows Using Structure-Preserving Schemes. SIAM Journal on Numerical Analysis, 2018, 56, 2322-2344.	1.1	9
35	Linear Feature Transform and Enhancement of Classification on Deep Neural Network. Journal of Scientific Computing, 2018, 76, 1396-1406.	1.1	1
36	Residual diffusivity in elephant random walk models with stops. Communications in Mathematical Sciences, 2018, 16, 2033-2045.	0.5	4

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37	Computational modeling of spectral data fitting with nonlinear distortions. Signal, Image and Video Processing, 2017, 11, 651-658.	1.7	0
38	Computing Residual Diffusivity by Adaptive Basis Learning via Spectral Method. Numerical Mathematics, 2017, 10, 351-372.	0.6	4
39	Difference-of-Convex Learning: Directional Stationarity, Optimality, and Sparsity. SIAM Journal on Optimization, 2017, 27, 1637-1665.	1.2	67
40	Spectral analysis and computation of effective diffusivities in space-time periodic incompressible flows. Annals of Mathematical Sciences and Applications, 2017, 2, 3-66.	0.2	4
41	Minimization of transformed l_1 penalty: Closed form representation and iterative thresholding algorithms. Communications in Mathematical Sciences, 2017, 15, 511-537.	0.5	43
42	Transformed Schatten-1 iterative thresholding algorithms for low rank matrix completion. Communications in Mathematical Sciences, 2017, 15, 839-862.	0.5	16
43	A geometric blind source separation method based on facet component analysis. Signal, Image and Video Processing, 2016, 10, 19-28.	1.7	9
44	Ballistic Orbits and Front Speed Enhancement for ABC Flows. SIAM Journal on Applied Dynamical Systems, 2016, 15, 1753-1782.	0.7	5
45	Periodic Orbits of the ABC Flow with A=B=C=1. SIAM Journal on Mathematical Analysis, 2016, 48, 4087-4093.	0.9	9
46	A weighted difference of anisotropic and isotropic total variation for relaxed Mumford-Shah image segmentation. , 2016, , .		3
47	Point Source Super-resolution Via Non-convex $$L_1$$ Based Methods. Journal of Scientific Computing, 2016, 68, 1082-1100.	1.1	36
48	A computational study of residual KPP front speeds in time-periodic cellular flows in the small diffusion limit. Physica D: Nonlinear Phenomena, 2015, 311-312, 37-44.	1.3	9
49	Computing Sparse Representation in a Highly Coherent Dictionary Based on Difference of $$L_1$$ L 1 and $$L_2$$ L 2. Journal of Scientific Computing, 2015, 64, 178-196.	1.1	117
50	Minimization of ell_{1-2} for Compressed Sensing. SIAM Journal of Scientific Computing, 2015, 37, A536-A563.	1.3	304
51	A Weighted Difference of Anisotropic and Isotropic Total Variation Model for Image Processing. SIAM Journal on Imaging Sciences, 2015, 8, 1798-1823.	1.3	173
52	PhaseLiftOff: An accurate and stable phase retrieval method based on difference of trace and Frobenius norms. Communications in Mathematical Sciences, 2015, 13, 1033-1049.	0.5	20
53	Mathematical Modeling and Signal Processing in Speech and Hearing Sciences. , 2014, , .		0
54	Asymptotic Growth Rates and Strong Bending of Turbulent Flame Speeds of G-Equation in Steady Two-Dimensional Incompressible Periodic Flows. SIAM Journal on Mathematical Analysis, 2014, 46, 2444-2467.	0.9	8

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55	A sparse semi-blind source identification method and its application to Raman spectroscopy for explosives detection. Signal Processing, 2014, 96, 332-345.	2.1	2
56	Front Quenching in the G-equation Model Induced by Straining of Cellular Flow. Archive for Rational Mechanics and Analysis, 2014, 214, 1-34.	1.1	6
57	Ratio and difference of l_1 and l_2 norms and sparse representation with coherent dictionaries. Communications in Information and Systems, 2014, 14, 87-109.	0.3	52
58	Finite Element Computation of KPP Front Speeds in Cellular and Cat's Eye Flows. Journal of Scientific Computing, 2013, 55, 455-470.	1.1	6
59	Sharp asymptotic growth laws of turbulent flame speeds in cellular flows by inviscid Hamilton–Jacobi models. Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire, 2013, 30, 1049-1068.	0.7	16
60	A numerical study of turbulent flame speeds of curvature and strain G-equations in cellular flows. Physica D: Nonlinear Phenomena, 2013, 243, 20-31.	1.3	6
61	A Method for Finding Structured Sparse Solutions to Nonnegative Least Squares Problems with Applications. SIAM Journal on Imaging Sciences, 2013, 6, 2010-2046.	1.3	109
62	A randomly perturbed infomax algorithm for blind source separation. , 2013, , .		0
63	Nonnegative Sparse Blind Source Separation for NMR Spectroscopy by Data Clustering, Model Reduction, and ell_1 Minimization. SIAM Journal on Imaging Sciences, 2012, 5, 886-911.	1.3	8
64	A Convex Model for Nonnegative Matrix Factorization and Dimensionality Reduction on Physical Space. IEEE Transactions on Image Processing, 2012, 21, 3239-3252.	6.0	122
65	A Recursive Sparse Blind Source Separation Method and Its Application to Correlated Data in NMR Spectroscopy of Biofluids. Journal of Scientific Computing, 2012, 51, 733-753.	1.1	10
66	Multi-Channel l_{1} Regularized Convex Speech Enhancement Model and Fast Computation by the Split Bregman Method. IEEE Transactions on Audio Speech and Language Processing, 2012, 20, 661-675.	3.8	10
67	Hybrid deterministic-stochastic gradient Langevin dynamics for Bayesian learning. Communications in Information and Systems, 2012, 12, 221-232.	0.3	1
68	A convex model and L1 minimization for musical noise reduction in blind source separation. Communications in Mathematical Sciences, 2012, 10, 223-238.	0.5	1
69	Convergence analysis of a randomly perturbed infomax algorithm for blind source separation. Communications in Information and Systems, 2012, 12, 251-275.	0.3	0
70	Underdetermined Sparse Blind Source Separation of Nonnegative and Partially Overlapped Data. SIAM Journal of Scientific Computing, 2011, 33, 2063-2094.	1.3	8
71	Asymptotics for Turbulent Flame Speeds of the Viscous G-Equation Enhanced by Cellular and Shear Flows. Archive for Rational Mechanics and Analysis, 2011, 202, 461-492.	1.1	25
72	Comparisons between sine-Gordon and perturbed nonlinear Schrödinger equations for modeling light bullets beyond critical collapse. Physica D: Nonlinear Phenomena, 2010, 239, 1120-1134.	1.3	27

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73	Periodic homogenization of G-equations and viscosity effects. Nonlinearity, 2010, 23, 2351-2367.	0.6	5
74	Periodic homogenization of the inviscid G-equation for incompressible flows. Communications in Mathematical Sciences, 2010, 8, 1067-1078.	0.5	25
75	Asymptotic spreading of KPP reactive fronts in incompressible space–time random flows. Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire, 2009, 26, 815-839.	0.7	32
76	A nonlocally weighted soft-constrained natural gradient algorithm and blind separation of strongly reverberant speech mixtures. , 2009, , .		0
77	A nonlocally weighted soft-constrained natural gradient algorithm for blind separation of reverberant speech. , 2009, , .		2
78	A Soft-Constrained Dynamic Iterative Method of Blind Source Separation. Multiscale Modeling and Simulation, 2009, 7, 1795-1810.	0.6	11
79	Finite Element Computations of Kolmogorov–Petrovsky–Piskunov Front Speeds in Random Shear Flows in Cylinders. Multiscale Modeling and Simulation, 2009, 7, 1029-1041.	0.6	2
80	An Introduction to Fronts in Random Media. , 2009, , .		38
81	A time domain algorithm for blind separation of convolutive sound mixtures and L1 constrained minimization of cross correlations. Communications in Mathematical Sciences, 2009, 7, 109-128.	0.5	19
82	Bounds on Front Speeds for Inviscid and Viscous G-equations. Methods and Applications of Analysis, 2009, 16, 507-520.	0.1	11
83	Computing reactive front speeds in random flows by variational principle. Physica D: Nonlinear Phenomena, 2008, 237, 3172-3177.	1.3	7
84	A dynamic algorithm for blind separation of convolutive sound mixtures. Neurocomputing, 2008, 72, 521-532.	3.5	16
85	Variational principle and reaction-diffusion front speeds in random flows. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 1040701-1040702.	0.2	0
86	Scaling Limits of Waves in Convex Scalar Conservation Laws Under Random Initial Perturbations. Journal of Statistical Physics, 2006, 122, 361-370.	0.5	0
87	A Variational Principle for KPP Front Speeds in Temporally Random Shear Flows. Communications in Mathematical Physics, 2006, 269, 493-532.	1.0	23
88	A variational principle based study of KPP minimal front speeds in random shears. Nonlinearity, 2005, 18, 1655-1675.	0.6	24
89	Existence of KPP type fronts in space-time periodic shear flows and a study of minimal speeds based on variational principle. Discrete and Continuous Dynamical Systems, 2005, 13, 1217-1234.	0.5	59
90	Existence of KPP fronts in spatially-temporally periodic advection and variational principle for propagation speeds. Dynamics of Partial Differential Equations, 2005, 2, 1-24.	1.0	58

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91	Dispersive instability and its minimization in time-domain computation of steady-state responses of cochlear models. Journal of the Acoustical Society of America, 2004, 115, 2173-2177.	0.5	12
92	Min-max variational principle and front speeds in random shear flows. Methods and Applications of Analysis, 2004, 11, 635-644.	0.1	4
93	Reaction-Diffusion Front Speeds in Spatially-Temporally Periodic Shear Flows. Multiscale Modeling and Simulation, 2003, 1, 554-570.	0.6	24
94	KPP Front Speeds in Random Shears and the Parabolic Anderson Problem. Methods and Applications of Analysis, 2003, 10, 191-198.	0.1	19
95	A perception-and PDE-based nonlinear transformation for processing spoken words. Physica D: Nonlinear Phenomena, 2001, 149, 143-160.	1.3	4
96	Self-Similar Decay in the Kraichnan Model of a Passive Scalar. Journal of Statistical Physics, 2000, 100, 679-741.	0.5	31
97	Front Propagation in Heterogeneous Media. SIAM Review, 2000, 42, 161-230.	4.2	438