

Jack Xin

List of Publications by Year in descending order

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97
papers

2,395
citations

279798

23
h-index

214800

47
g-index

99
all docs

99
docs citations

99
times ranked

1213
citing authors

#	ARTICLE	IF	CITATIONS
1	Front Propagation in Heterogeneous Media. SIAM Review, 2000, 42, 161-230.	9.5	438
2	Minimization of ℓ_{1-2} for Compressed Sensing. SIAM Journal of Scientific Computing, 2015, 37, A536-A563.	2.8	304
3	A Weighted Difference of Anisotropic and Isotropic Total Variation Model for Image Processing. SIAM Journal on Imaging Sciences, 2015, 8, 1798-1823.	2.2	173
4	A Convex Model for Nonnegative Matrix Factorization and Dimensionality Reduction on Physical Space. IEEE Transactions on Image Processing, 2012, 21, 3239-3252.	9.8	122
5	Computing Sparse Representation in a Highly Coherent Dictionary Based on Difference of ℓ_1 and ℓ_2 . Journal of Scientific Computing, 2015, 64, 178-196.	2.3	117
6	A Method for Finding Structured Sparse Solutions to Nonnegative Least Squares Problems with Applications. SIAM Journal on Imaging Sciences, 2013, 6, 2010-2046.	2.2	109
7	Minimization of transformed ℓ_1 penalty: theory, difference of convex function algorithm, and robust application in compressed sensing. Mathematical Programming, 2018, 169, 307-336.	2.4	76
8	Difference-of-Convex Learning: Directional Stationarity, Optimality, and Sparsity. SIAM Journal on Optimization, 2017, 27, 1637-1665.	2.0	67
9	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.	0.9	59
10	Existence of KPP fronts in spatially-temporally periodic advection and variational principle for propagation speeds. Dynamics of Partial Differential Equations, 2005, 2, 1-24.	0.9	58
11	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.	0.5	52
12	Deep Learning for Real-Time Crime Forecasting and Its Ternarization. Chinese Annals of Mathematics Series B, 2019, 40, 949-966.	0.4	45
13	Minimization of transformed ℓ_1 penalty: Closed form representation and iterative thresholding algorithms. Communications in Mathematical Sciences, 2017, 15, 511-537.	1.0	43
14	BinaryRelax: A Relaxation Approach for Training Deep Neural Networks with Quantized Weights. SIAM Journal on Imaging Sciences, 2018, 11, 2205-2223.	2.2	39
15	An Introduction to Fronts in Random Media. , 2009, , .		38
16	Point Source Super-resolution Via Non-convex ℓ_1 Based Methods. Journal of Scientific Computing, 2016, 68, 1082-1100.	2.3	36
17	Blended coarse gradient descent for full quantization of deep neural networks. Research in Mathematical Sciences, 2019, 6, 1.	1.0	36
18	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.	1.4	32

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19	Self-Similar Decay in the Kraichnan Model of a Passive Scalar. <i>Journal of Statistical Physics</i> , 2000, 100, 679-741.	1.2	31
20	Comparisons between sine-Gordon and perturbed nonlinear Schrödinger equations for modeling light bullets beyond critical collapse. <i>Physica D: Nonlinear Phenomena</i> , 2010, 239, 1120-1134.	2.8	27
21	Asymptotics for Turbulent Flame Speeds of the Viscous G-Equation Enhanced by Cellular and Shear Flows. <i>Archive for Rational Mechanics and Analysis</i> , 2011, 202, 461-492.	2.4	25
22	Periodic homogenization of the inviscid G-equation for incompressible flows. <i>Communications in Mathematical Sciences</i> , 2010, 8, 1067-1078.	1.0	25
23	Reaction-Diffusion Front Speeds in Spatially-Temporally Periodic Shear Flows. <i>Multiscale Modeling and Simulation</i> , 2003, 1, 554-570.	1.6	24
24	A variational principle based study of KPP minimal front speeds in random shears. <i>Nonlinearity</i> , 2005, 18, 1655-1675.	1.4	24
25	A Variational Principle for KPP Front Speeds in Temporally Random Shear Flows. <i>Communications in Mathematical Physics</i> , 2006, 269, 493-532.	2.2	23
26	PhaseLiftOff: An accurate and stable phase retrieval method based on difference of trace and Frobenius norms. <i>Communications in Mathematical Sciences</i> , 2015, 13, 1033-1049.	1.0	20
27	A time domain algorithm for blind separation of convolutive sound mixtures and L1 constrained minimization of cross correlations. <i>Communications in Mathematical Sciences</i> , 2009, 7, 109-128.	1.0	19
28	KPP Front Speeds in Random Shears and the Parabolic Anderson Problem. <i>Methods and Applications of Analysis</i> , 2003, 10, 191-198.	0.5	19
29	A dynamic algorithm for blind separation of convolutive sound mixtures. <i>Neurocomputing</i> , 2008, 72, 521-532.	5.9	16
30	Sharp asymptotic growth laws of turbulent flame speeds in cellular flows by inviscid Hamilton-Jacobi models. <i>Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire</i> , 2013, 30, 1049-1068.	1.4	16
31	Transformed Schatten-1 iterative thresholding algorithms for low rank matrix completion. <i>Communications in Mathematical Sciences</i> , 2017, 15, 839-862.	1.0	16
32	Dispersive instability and its minimization in time-domain computation of steady-state responses of cochlear models. <i>Journal of the Acoustical Society of America</i> , 2004, 115, 2173-2177.	1.1	12
33	A Soft-Constrained Dynamic Iterative Method of Blind Source Separation. <i>Multiscale Modeling and Simulation</i> , 2009, 7, 1795-1810.	1.6	11
34	Bounds on Front Speeds for Inviscid and Viscous G-equations. <i>Methods and Applications of Analysis</i> , 2009, 16, 507-520.	0.5	11
35	A Recursive Sparse Blind Source Separation Method and Its Application to Correlated Data in NMR Spectroscopy of Biofluids. <i>Journal of Scientific Computing</i> , 2012, 51, 733-753.	2.3	10
36	Multi-Channel ℓ_1 Regularized Convex Speech Enhancement Model and Fast Computation by the Split Bregman Method. <i>IEEE Transactions on Audio Speech and Language Processing</i> , 2012, 20, 661-675.	3.2	10

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37	A computational study of residual KPP front speeds in time-periodic cellular flows in the small diffusion limit. <i>Physica D: Nonlinear Phenomena</i> , 2015, 311-312, 37-44.	2.8	9
38	A geometric blind source separation method based on facet component analysis. <i>Signal, Image and Video Processing</i> , 2016, 10, 19-28.	2.7	9
39	Periodic Orbits of the ABC Flow with $A=B=C=1$. <i>SIAM Journal on Mathematical Analysis</i> , 2016, 48, 4087-4093.	1.9	9
40	Computing Effective Diffusivity of Chaotic and Stochastic Flows Using Structure-Preserving Schemes. <i>SIAM Journal on Numerical Analysis</i> , 2018, 56, 2322-2344.	2.3	9
41	AutoShuffleNet: Learning Permutation Matrices via an Exact Lipschitz Continuous Penalty in Deep Convolutional Neural Networks. , 2020, , .		9
42	Underdetermined Sparse Blind Source Separation of Nonnegative and Partially Overlapped Data. <i>SIAM Journal of Scientific Computing</i> , 2011, 33, 2063-2094.	2.8	8
43	Nonnegative Sparse Blind Source Separation for NMR Spectroscopy by Data Clustering, Model Reduction, and ℓ_1 Minimization. <i>SIAM Journal on Imaging Sciences</i> , 2012, 5, 886-911.	2.2	8
44	Asymptotic Growth Rates and Strong Bending of Turbulent Flame Speeds of G-Equation in Steady Two-Dimensional Incompressible Periodic Flows. <i>SIAM Journal on Mathematical Analysis</i> , 2014, 46, 2444-2467.	1.9	8
45	Computing reactive front speeds in random flows by variational principle. <i>Physica D: Nonlinear Phenomena</i> , 2008, 237, 3172-3177.	2.8	7
46	A Weighted Difference of Anisotropic and Isotropic Total Variation for Relaxed Mumford–Shah Color and Multiphase Image Segmentation. <i>SIAM Journal on Imaging Sciences</i> , 2021, 14, 1078-1113.	2.2	7
47	Sparsity Meets Robustness: Channel Pruning for the Feynman-Kac Formalism Principled Robust Deep Neural Nets. <i>Lecture Notes in Computer Science</i> , 2020, , 362-381.	1.3	7
48	Finite Element Computation of KPP Front Speeds in Cellular and Catalytic Eye Flows. <i>Journal of Scientific Computing</i> , 2013, 55, 455-470.	2.3	6
49	A numerical study of turbulent flame speeds of curvature and strain G-equations in cellular flows. <i>Physica D: Nonlinear Phenomena</i> , 2013, 243, 20-31.	2.8	6
50	Front Quenching in the G-equation Model Induced by Straining of Cellular Flow. <i>Archive for Rational Mechanics and Analysis</i> , 2014, 214, 1-34.	2.4	6
51	A Study on Graph-Structured Recurrent Neural Networks and Sparsification with Application to Epidemic Forecasting. <i>Advances in Intelligent Systems and Computing</i> , 2020, , 730-739.	0.6	6
52	Periodic homogenization of G-equations and viscosity effects. <i>Nonlinearity</i> , 2010, 23, 2351-2367.	1.4	5
53	Ballistic Orbits and Front Speed Enhancement for ABC Flows. <i>SIAM Journal on Applied Dynamical Systems</i> , 2016, 15, 1753-1782.	1.6	5
54	Sharp Error Estimates on a Stochastic Structure-Preserving Scheme in Computing Effective Diffusivity of 3D Chaotic Flows. <i>Multiscale Modeling and Simulation</i> , 2021, 19, 1167-1189.	1.6	5

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55	Structured Sparsity of Convolutional Neural Networks via Nonconvex Sparse Group Regularization. <i>Frontiers in Applied Mathematics and Statistics</i> , 2021, 6, .	1.3	5
56	Nonconvex Regularization for Network Slimming: Compressing CNNs Even More. <i>Lecture Notes in Computer Science</i> , 2020, , 39-53.	1.3	5
57	A perception-and PDE-based nonlinear transformation for processing spoken words. <i>Physica D: Nonlinear Phenomena</i> , 2001, 149, 143-160.	2.8	4
58	Computing Residual Diffusivity by Adaptive Basis Learning via Spectral Method. <i>Numerical Mathematics</i> , 2017, 10, 351-372.	1.3	4
59	Error Estimates for a POD Method for Solving Viscous G-Equations in Incompressible Cellular Flows. <i>SIAM Journal of Scientific Computing</i> , 2021, 43, A636-A662.	2.8	4
60	Lorentzian peak sharpening and sparse blind source separation for NMR spectroscopy. <i>Signal, Image and Video Processing</i> , 2022, 16, 633-641.	2.7	4
61	Spectral analysis and computation of effective diffusivities in space-time periodic incompressible flows. <i>Annals of Mathematical Sciences and Applications</i> , 2017, 2, 3-66.	0.4	4
62	Residual diffusivity in elephant random walk models with stops. <i>Communications in Mathematical Sciences</i> , 2018, 16, 2033-2045.	1.0	4
63	Min-max variational principle and front speeds in random shear flows. <i>Methods and Applications of Analysis</i> , 2004, 11, 635-644.	0.5	4
64	A Semi-Lagrangian Computation of Front Speeds of G-equation in ABC and Kolmogorov Flows with Estimation via Ballistic Orbits. <i>Multiscale Modeling and Simulation</i> , 2022, 20, 107-117.	1.6	4
65	A weighted difference of anisotropic and isotropic total variation for relaxed Mumford-Shah image segmentation. , 2016, , .		3
66	Convergence Analysis of Stochastic Structure-Preserving Schemes for Computing Effective Diffusivity in Random Flows. <i>SIAM Journal on Numerical Analysis</i> , 2020, 58, 3040-3067.	2.3	3
67	DeepParticle: Learning invariant measure by a deep neural network minimizing Wasserstein distance on data generated from an interacting particle method. <i>Journal of Computational Physics</i> , 2022, 464, 111309.	3.8	3
68	A nonlocally weighted soft-constrained natural gradient algorithm for blind separation of reverberant speech. , 2009, , .		2
69	Finite Element Computations of Kolmogorovâ€Petrovskyâ€Piskunov Front Speeds in Random Shear Flows in Cylinders. <i>Multiscale Modeling and Simulation</i> , 2009, 7, 1029-1041.	1.6	2
70	A sparse semi-blind source identification method and its application to Raman spectroscopy for explosives detection. <i>Signal Processing</i> , 2014, 96, 332-345.	3.7	2
71	Curvature Effect in Shear Flow: Slowdown of Turbulent Flame Speeds with Markstein Number. <i>Communications in Mathematical Physics</i> , 2018, 359, 515-533.	2.2	2
72	Three ℓ_1 Based Nonconvex Methods in Constructing Sparse Mean Reverting Portfolios. <i>Journal of Scientific Computing</i> , 2018, 75, 1156-1186.	2.3	2

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73	Sparse Kalman filtering approaches to realized covariance estimation from high frequency financial data. <i>Mathematical Programming</i> , 2019, 176, 247-278.	2.4	2
74	Two-Grid Based Adaptive Proper Orthogonal Decomposition Method for Time Dependent Partial Differential Equations. <i>Journal of Scientific Computing</i> , 2020, 84, 1.	2.3	2
75	Computing effective diffusivities in 3D time-dependent chaotic flows with a convergent Lagrangian numerical method. <i>ESAIM: Mathematical Modelling and Numerical Analysis</i> , 2022, 56, 1521-1544.	1.9	2
76	A Convergent Interacting Particle Method and Computation of KPP Front Speeds in Chaotic Flows. <i>SIAM Journal on Numerical Analysis</i> , 2022, 60, 1136-1167.	2.3	2
77	Linear Feature Transform and Enhancement of Classification on Deep Neural Network. <i>Journal of Scientific Computing</i> , 2018, 76, 1396-1406.	2.3	1
78	Convergence of a Relaxed Variable Splitting Coarse Gradient Descent Method for Learning Sparse Weight Binarized Activation Neural Network. <i>Frontiers in Applied Mathematics and Statistics</i> , 2020, 6, .	1.3	1
79	A Spatial-temporal Graph based Hybrid Infectious Disease Model with Application to COVID-19. , 2021, , .		1
80	Computing Residual Diffusivity by Adaptive Basis Learning via Super-Resolution Deep Neural Networks. <i>Advances in Intelligent Systems and Computing</i> , 2020, , 279-290.	0.6	1
81	Hybrid deterministic-stochastic gradient Langevin dynamics for Bayesian learning. <i>Communications in Information and Systems</i> , 2012, 12, 221-232.	0.5	1
82	A convex model and L1 minimization for musical noise reduction in blind source separation. <i>Communications in Mathematical Sciences</i> , 2012, 10, 223-238.	1.0	1
83	A Recurrent Neural Network and Differential Equation based Spatiotemporal Infectious Disease Model with Application to COVID-19. , 2020, , .		1
84	A Recurrent Neural Network and Differential Equation based Spatiotemporal Infectious Disease Model with Application to COVID-19. , 2020, , .		1
85	Improving Efficient Semantic Segmentation Networks by Enhancing Multi-scale Feature Representation via Resolution Path Based Knowledge Distillation and Pixel Shuffle. <i>Lecture Notes in Computer Science</i> , 2021, , 325-336.	1.3	1
86	RARTS: An Efficient First-Order Relaxed Architecture Search Method. <i>IEEE Access</i> , 2022, 10, 65901-65912.	4.2	1
87	Scaling Limits of Waves in Convex Scalar Conservation Laws Under Random Initial Perturbations. <i>Journal of Statistical Physics</i> , 2006, 122, 361-370.	1.2	0
88	Variational principle and reaction-diffusion front speeds in random flows. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2007, 7, 1040701-1040702.	0.2	0
89	A nonlocally weighted soft-constrained natural gradient algorithm and blind separation of strongly reverberant speech mixtures. , 2009, , .		0
90	A randomly perturbed infomax algorithm for blind source separation. , 2013, , .		0

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91	Mathematical Modeling and Signal Processing in Speech and Hearing Sciences. , 2014, , .		0
92	Computational modeling of spectral data fitting with nonlinear distortions. Signal, Image and Video Processing, 2017, 11, 651-658.	2.7	0
93	Enhanced diffusivity in perturbed senile reinforced random walk models. Asymptotic Analysis, 2021, 122, 87-104.	0.5	0
94	Learning quantized neural nets by coarse gradient method for nonlinear classification. Research in Mathematical Sciences, 2021, 8, 1.	1.0	0
95	Convergence analysis of a randomly perturbed infomax algorithm for blind source separation. Communications in Information and Systems, 2012, 12, 251-275.	0.5	0
96	An Integrated Approach to Produce Robust Deep Neural Network Models with High Efficiency. Lecture Notes in Computer Science, 2022, , 451-465.	1.3	0
97	An Integrated Recurrent Neural Network and Regression Model with Spatial and Climatic Couplings for Vector-borne Disease Dynamics. , 2022, , .		0