Zuowei Shen

List of Publications by Year
in descending order

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138	13,231	50244	23514
papers	citations	46 h-index	111 g-index

139	139	139	6541
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Optimal approximation rate of ReLU networks in terms of width and depth. Journal Des Mathematiques Pures Et Appliquees, 2022, 157, 101-135.	0.8	19
2	Deep Network Approximation for Smooth Functions. SIAM Journal on Mathematical Analysis, 2021, 53, 5465-5506.	0.9	45
3	Neural network approximation: Three hidden layers are enough. Neural Networks, 2021, 141, 160-173.	3.3	43
4	Deep Network With Approximation Error Being Reciprocal of Width to Power of Square Root of Depth. Neural Computation, 2021, 33, 1005-1036.	1.3	22
5	Approximation from Noisy Data. SIAM Journal on Numerical Analysis, 2021, 59, 2722-2745.	1.1	2
6	Phase retrieval: A data-driven wavelet frame based approach. Applied and Computational Harmonic Analysis, 2020, 49, 971-1000.	1.1	4
7	Multiscale Discrete Framelet Transform for Graph-Structured Signals. Multiscale Modeling and Simulation, 2020, 18, 1210-1241.	0.6	0
8	Deep Network Approximation Characterized by Number of Neurons. Communications in Computational Physics, 2020, 28, 1768-1811.	0.7	40
9	Nonlinear approximation via compositions. Neural Networks, 2019, 119, 74-84.	3.3	35
10	Digital Gabor filters do generate MRA-based wavelet tight frames. Applied and Computational Harmonic Analysis, 2019, 47, 87-108.	1.1	5
11	B-spline tight frame based force matching method. Journal of Computational Physics, 2018, 362, 208-219.	1.9	11
12	Investigating energyâ€based pool structure selection in the structure ensemble modeling with experimental distance constraints: The example from a multidomain protein <scp>P</scp>ub1. Proteins: Structure, Function and Bioinformatics, 2018, 86, 501-514.	1.5	3
13	Coherence Retrieval Using Trace Regularization. SIAM Journal on Imaging Sciences, 2018, 11, 679-706.	1.3	10
14	Digital Gabor filters with MRA structure. Multiscale Modeling and Simulation, 2018, 16, 452-476.	0.6	5
15	An analysis of wavelet frame based scattered data reconstruction. Applied and Computational Harmonic Analysis, 2017, 42, 480-507.	1.1	9
16	Image Restoration: A General Wavelet Frame Based Model and Its Asymptotic Analysis. SIAM Journal on Mathematical Analysis, 2017, 49, 421-445.	0.9	15
17	Directional Frames for Image Recovery: Multi-scale Discrete Gabor Frames. Journal of Fourier Analysis and Applications, 2017, 23, 729-757.	0.5	13
18	Image Restoration: Wavelet Frame Shrinkage, Nonlinear Evolution PDEs, and Beyond. Multiscale Modeling and Simulation, 2017, 15, 606-660.	0.6	43

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19	Symmetric canonical quincunx tight framelets with high vanishing moments and smoothness. Mathematics of Computation, 2017, 87, 347-379.	1.1	21
20	A Wavelet Frame Method with Shape Prior for Ultrasound Video Segmentation. SIAM Journal on Imaging Sciences, 2016, 9, 495-519.	1.3	7
21	Image restoration by minimizing zero norm of wavelet frame coefficients. Inverse Problems, 2016, 32, 115004.	1.0	27
22	Image recovery via geometrically structured approximation. Applied and Computational Harmonic Analysis, 2016, 41, 75-93.	1.1	13
23	Duality for Frames. Journal of Fourier Analysis and Applications, 2016, 22, 71-136.	0.5	18
24	Multiscale representation of surfaces by tight wavelet frames with applications to denoising. Applied and Computational Harmonic Analysis, 2016, 41, 561-589.	1.1	21
25	Image restoration: A wavelet frame based model for piecewise smooth functions and beyond. Applied and Computational Harmonic Analysis, 2016, 41, 94-138.	1.1	43
26	Tight wavelet frames in low dimensions with canonical filters. Journal of Approximation Theory, 2015, 196, 55-78.	0.5	8
27	Convergence analysis for iterative data-driven tight frame construction scheme. Applied and Computational Harmonic Analysis, 2015, 38, 510-523.	1.1	30
28	Data-Driven Multi-scale Non-local Wavelet Frame Construction and Image Recovery. Journal of Scientific Computing, 2015, 63, 307-329.	1.1	44
29	Dual Gramian analysis: Duality principle and unitary extension principle. Mathematics of Computation, 2015, 85, 239-270.	1.1	18
30	A reweighted l^2 method for image restoration with Poisson and mixed Poisson-Gaussian noise. Inverse Problems and Imaging, 2015, 9, 875-894.	0.6	32
31	Wavelet Frame Based Algorithm for 3D Reconstruction in Electron Microscopy. SIAM Journal of Scientific Computing, 2014, 36, B45-B69.	1.3	19
32	L0 Norm Based Dictionary Learning by Proximal Methods with Global Convergence. , 2014, , .		36
33	Data-driven tight frame construction and image denoising. Applied and Computational Harmonic Analysis, 2014, 37, 89-105.	1.1	201
34	Surveillance video analysis using compressive sensing with low latency. Bell Labs Technical Journal, 2014, 18, 63-74.	0.7	21
35	Cine Cone Beam CT Reconstruction Using Low-Rank Matrix Factorization: Algorithm and a Proof-of-Principle Study. IEEE Transactions on Medical Imaging, 2014, 33, 1581-1591.	5.4	112
36	Image Restoration with Mixed or Unknown Noises. Multiscale Modeling and Simulation, 2014, 12, 458-487.	0.6	47

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37	X-Ray CT Image Reconstruction via Wavelet Frame Based Regularization and Radon Domain Inpainting. Journal of Scientific Computing, 2013, 54, 333-349.	1.1	66
38	Adaptive low rank and sparse decomposition of video using compressive sensing. , 2013, , .		12
39	Recovering Over-/Underexposed Regions in Photographs. SIAM Journal on Imaging Sciences, 2013, 6, 2213-2235.	1.3	19
40	On B-Spline Framelets Derived from the Unitary Extension Principle. SIAM Journal on Mathematical Analysis, 2013, 45, 127-151.	0.9	8
41	Wavelet Frame Based Multiphase Image Segmentation. SIAM Journal on Imaging Sciences, 2013, 6, 2521-2546.	1.3	24
42	MRA-based wavelet frames and applications. IAS/Park City Mathematics Series, 2013, , 7-158.	0.5	33
43	Wavelet frame based color image demosaicing. Inverse Problems and Imaging, 2013, 7, 777-794.	0.6	9
44	Simultaneous data recovery in image and transform domains. Methods and Applications of Analysis, 2013, 20, 425-438.	0.1	0
45	MRA-based wavelet frames and applications: image segmentation and surface reconstruction. , 2012, , .		8
46	Image restoration: Total variation, wavelet frames, and beyond. Journal of the American Mathematical Society, 2012, 25, 1033-1089.	1.9	259
47	Wavelet frame based blind image inpainting. Applied and Computational Harmonic Analysis, 2012, 32, 268-279.	1.1	116
48	Image deconvolution using a characterization of sharp images in wavelet domain. Applied and Computational Harmonic Analysis, 2012, 32, 295-304.	1.1	21
49	Framelet-Based Blind Motion Deblurring From a Single Image. IEEE Transactions on Image Processing, 2012, 21, 562-572.	6.0	192
50	Surveillance video processing using compressive sensing. Inverse Problems and Imaging, 2012, 6, 201-214.	0.6	43
51	Wavelet Frames and Image Restorations. , 2011, , .		36
52	Adaptive Multiresolution Analysis Structures and Shearlet Systems. SIAM Journal on Numerical Analysis, 2011, 49, 1921-1946.	1.1	36
53	Robust Video Restoration by Joint Sparse and Low Rank Matrix Approximation. SIAM Journal on Imaging Sciences, 2011, 4, 1122-1142.	1.3	228
54	An Accelerated Proximal Gradient Algorithm for Frame-Based Image Restoration via the Balanced Approach. SIAM Journal on Imaging Sciences, 2011, 4, 573-596.	1.3	63

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55	Wavelet Based Restoration of Images with Missing or Damaged Pixels. East Asian Journal on Applied Mathematics, 2011, 1, 108-131.	0.4	17
56	Wavelet frame based surface reconstruction from unorganized points. Journal of Computational Physics, 2011, 230, 8247-8255.	1.9	14
57	Small Support Spline Riesz Wavelets in Low Dimensions. Journal of Fourier Analysis and Applications, 2011, 17, 535-566.	0.5	2
58	Approximation of frame based missing data recovery. Applied and Computational Harmonic Analysis, 2011, 31, 185-204.	1.1	8
59	Tight periodic wavelet frames and approximation orders. Applied and Computational Harmonic Analysis, 2011, 31, 228-248.	1.1	18
60	Robust principal component analysis-based four-dimensional computed tomography. Physics in Medicine and Biology, 2011, 56, 3181-3198.	1.6	149
61	Frame-based segmentation for medical images. Communications in Mathematical Sciences, 2011, 9, 551-559.	0.5	27
62	Wavelet frame based scene reconstruction from range data. Journal of Computational Physics, 2010, 229, 2093-2108.	1.9	13
63	Inpainting for compressed images. Applied and Computational Harmonic Analysis, 2010, 29, 368-381.	1.1	8
64	Robust video denoising using low rank matrix completion. , 2010, , .		315
65	A New Multiscale Representation for Shapes and Its Application to Blood Vessel Recovery. SIAM Journal of Scientific Computing, 2010, 32, 1724-1739.	1.3	5
66	A Singular Value Thresholding Algorithm for Matrix Completion. SIAM Journal on Optimization, 2010, 20, 1956-1982.	1.2	4,242
67	Split Bregman Methods and Frame Based Image Restoration. Multiscale Modeling and Simulation, 2010, 8, 337-369.	0.6	531
68	Tight Frame Based Method for High-Resolution Image Reconstruction. Series in Contemporary Applied Mathematics, 2010, , 1-36.	0.8	2
69	Simultaneous cartoon and texture inpainting. Inverse Problems and Imaging, 2010, 4, 379-395.	0.6	76
70	Framelet Based Deconvolution. Journal of Computational Mathematics, 2010, 28, .	0.2	26
71	Convergence of the linearized Bregman iteration for â„“â‚•norm minimization. Mathematics of Computation, 2009, 78, 2127-2136.	1.1	140
72	Linearized Bregman iterations for compressed sensing. Mathematics of Computation, 2009, 78, 1515-1536.	1.1	244

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73	Convergence analysis of tight framelet approach for missing data recovery. Advances in Computational Mathematics, 2009, 31, 87-113.	0.8	72
74	Characterization of Sobolev spaces of arbitrary smoothness using nonstationary tight wavelet frames. Israel Journal of Mathematics, 2009, 172, 371-398.	0.4	19
75	Simultaneously inpainting in image and transformed domains. Numerische Mathematik, 2009, 112, 509-533.	0.9	38
76	Dual Wavelet Frames and Riesz Bases in Sobolev Spaces. Constructive Approximation, 2009, 29, 369-406.	1.8	77
77	Scattered data reconstruction by regularization in B-spline and associated wavelet spaces. Journal of Approximation Theory, 2009, 159, 197-223.	0.5	18
78	Blind motion deblurring using multiple images. Journal of Computational Physics, 2009, 228, 5057-5071.	1.9	87
79	Componentwise polynomial solutions and distribution solutions of refinement equations. Applied and Computational Harmonic Analysis, 2009, 27, 117-123.	1.1	4
80	Blind motion deblurring from a single image using sparse approximation. , 2009, , .		129
81	Linearized Bregman Iterations for Frame-Based Image Deblurring. SIAM Journal on Imaging Sciences, 2009, 2, 226-252.	1.3	164
82	Blind motion deblurring from a single image using sparse approximation. , 2009, , .		3
83	A framelet-based image inpainting algorithm. Applied and Computational Harmonic Analysis, 2008, 24, 131-149.	1.1	280
84	Polynomial reproduction by symmetric subdivision schemes. Journal of Approximation Theory, 2008, 155, 28-42.	0.5	79
85	Restoration of Chopped and Nodded Images by Framelets. SIAM Journal of Scientific Computing, 2008, 30, 1205-1227.	1.3	58
86	Compactly Supported Symmetric C^infty Wavelets with Spectral Approximation Order. SIAM Journal on Mathematical Analysis, 2008, 40, 905-938.	0.9	31
87	An Adaptive Timeâ€“Frequency Representation and its Fast Implementation. Journal of Vibration and Acoustics, Transactions of the ASME, 2007, 129, 169-178.	1.0	6
88	Pseudo-splines, wavelets and framelets. Applied and Computational Harmonic Analysis, 2007, 22, 78-104.	1.1	96
89	Examples of refinable componentwise polynomials. Applied and Computational Harmonic Analysis, 2007, 22, 368-373.	1.1	7
90	A framelet algorithm for enhancing video stills. Applied and Computational Harmonic Analysis, 2007, 23, 153-170.	1.1	36

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91	Deconvolution: a wavelet frame approach. Numerische Mathematik, 2007, 106, 529-587.	0.9	82
92	A pair of orthogonal frames. Journal of Approximation Theory, 2007, 147, 196-204.	0.5	11
93	Wavelets with Short Support. SIAM Journal on Mathematical Analysis, 2006, 38, 530-556.	0.9	57
94	Linear independence of pseudo-splines. Proceedings of the American Mathematical Society, 2006, 134, 2685-2694.	0.4	18
95	Construction of biorthogonal wavelets from pseudo-splines. Journal of Approximation Theory, 2006, 138, 211-231.	0.5	24
96	Symmetric and antisymmetric tight wavelet frames. Applied and Computational Harmonic Analysis, 2006, 20, 411-421.	1.1	27
97	Generalized Shift-Invariant Systems. Constructive Approximation, 2005, 22, 1-45.	1.8	64
98	Wavelets from the Loop Scheme. Journal of Fourier Analysis and Applications, 2005, 11, 615-637.	0.5	25
99	Advanced motion compensation techniques for blocking artifacts reduction in 3-D video coding systems. , 2005, , .		5
100	High-resolution image reconstruction with displacement errors: A framelet approach. International Journal of Imaging Systems and Technology, 2004, 14, 91-104.	2.7	20
101	Tight frame: an efficient way for high-resolution image reconstruction. Applied and Computational Harmonic Analysis, 2004, 17, 91-115.	1.1	142
102	Wavelet deblurring algorithms for spatially varying blur from high-resolution image reconstruction. Linear Algebra and Its Applications, 2003, 366, 139-155.	0.4	25
103	Framelets: MRA-based constructions of wavelet frames. Applied and Computational Harmonic Analysis, 2003, 14, 1-46.	1.1	605
104	Wavelet Algorithms for High-Resolution Image Reconstruction. SIAM Journal of Scientific Computing, 2003, 24, 1408-1432.	1.3	191
105	Restoring chopped and nodded images by tight frames. , 2003, , .		0
106	The wavelet dimension function is the trace function of a shift-invariant system. Proceedings of the American Mathematical Society, 2002, 131, 1385-1398.	0.4	18
107	Computing the Sobolev Regularity of Refinable Functions by the Arnoldi Method. SIAM Journal on Matrix Analysis and Applications, 2001, 23, 57-76.	0.7	12
108	A data-adaptive knot selection scheme for fitting splines. IEEE Signal Processing Letters, 2001, 8, 137-139.	2.1	24

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109	Convergence of cascade algorithms associated with nonhomogeneous refinement equations. Proceedings of the American Mathematical Society, 2000, 129, 415-427.	0.4	20
110	Interpolatory Wavelet Packets. Applied and Computational Harmonic Analysis, 2000, 8, 320-324.	1.1	2
111	The Sobolev Regularity of Refinable Functions. Journal of Approximation Theory, 2000, 106, 185-225.	0.5	49
112	Distributional Solutions of Nonhomogeneous Discrete and Continuous Refinement Equations. SIAM Journal on Mathematical Analysis, 2000, 32, 420-434.	0.9	27
113	Multivariate Compactly Supported Fundamental Refinable Functions, Duals, and Biorthogonal Wavelets. Studies in Applied Mathematics, 1999, 102, 173-204.	1.1	52
114	Compactly supported (bi)orthogonal wavelets generated by interpolatory refinable functions. Advances in Computational Mathematics, 1999, 11, 81-104.	0.8	31
115	On Existence and Weak Stability of Matrix Refinable Functions. Constructive Approximation, 1999, 15, 337-353.	1.8	50
116	<title>Construction of compactly supported biorthogonal wavelets: II</title>. , 1999, 3813, 264.		13
117	Convergence of multidimensional cascade algorithm. Numerische Mathematik, 1998, 78, 427-438.	0.9	49
118	Compactly supported tight affine spline frames in $L_2(mathbb R^d)$. Mathematics of Computation, 1998, 67, 191-207.	1.1	81
119	Refinable Function Vectors. SIAM Journal on Mathematical Analysis, 1998, 29, 235-250.	0.9	139
120	Construction of Schauder decomposition on banach spaces of periodic functions. Proceedings of the Edinburgh Mathematical Society, 1998, 41, 61-91.	0.2	8
121	Stability and Orthonormality of Multivariate Refinable Functions. SIAM Journal on Mathematical Analysis, 1997, 28, 999-1014.	0.9	74
122	Weyl-Heisenberg frames and Riesz bases in L2(â„d). Duke Mathematical Journal, 1997, 89, 237.	0.8	214
123	Multidimensional Interpolatory Subdivision Schemes. SIAM Journal on Numerical Analysis, 1997, 34, 2357-2381.	1.1	69
124	Affine systems inL 2 (â„•d) II: Dual systems. Journal of Fourier Analysis and Applications, 1997, 3, 617-637.	0.5	242
125	Affine Systems inL2(Rd): The Analysis of the Analysis Operator. Journal of Functional Analysis, 1997, 148, 408-447.	0.7	620
126	An algorithm for matrix extension and wavelet construction. Mathematics of Computation, 1996, 65, 723-738.	1.1	107

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127	General interpolation on the lattice $h{Bbb Z}^s$: Compactly supported fundamental solutions. Numerische Mathematik, 1995, 70, 331-351.	0.9	7
128	Characterization of compactly supported refinable splines. Advances in Computational Mathematics, 1995, 3, 137-145.	0.8	61
129	Frames and Stable Bases for Shift-Invariant Subspaces of L₂(â„^d). Canadian Journal of Mathematics, 1995, 47, 1051-1094.	0.3	262
130	Degenerate kernel schemes by wavelets for nonlinear integral equations on the real line. Applicable Analysis, 1995, 59, 163-184.	0.6	5
131	Nontensor Product Wavelet Packets in $L_2 (mathbb{R}^s)$. SIAM Journal on Mathematical Analysis, 1995, 26, 1061-1074.	0.9	190
132	Multiresolution and wavelets. Proceedings of the Edinburgh Mathematical Society, 1994, 37, 271-300.	0.2	123
133	Hermite Interpolation on the Lattice $mathbb{Z}^d $. SIAM Journal on Mathematical Analysis, 1994, 25, 962-975.	0.9	7
134	Solvability of systems of linear operator equations. Proceedings of the American Mathematical Society, 1994, 120, 815-824.	0.4	8
135	Dimension of Kernels of Linear Operators. American Journal of Mathematics, 1992, 114, 157.	0.5	12
136	Wavelets and pre-wavelets in low dimensions. Journal of Approximation Theory, 1992, 71, 18-38.	0.5	95
137	A wavelet method for high-resolution image reconstruction with displacement errors. , 0, , .		3
138	Resolution enhancement for video clips: tight frame approach. , 0, , .		2