Nicolas Dobigeon

List of Publications by Year
in descending order

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154 papers	8,191 citations	94433 37 h-index	58581 82 g-index
154 all docs	154 docs citations	154 times ranked	4609 citing authors

#	Article	IF	Citations
1	A 3-D-CNN Framework for Hyperspectral Unmixing With Spectral Variability. IEEE Transactions on Geoscience and Remote Sensing, 2022, 60, 1-14.	6.3	11
2	High-Dimensional Gaussian Sampling: A Review and a Unifying Approach Based on a Stochastic Proximal Point Algorithm. SIAM Review, 2022, 64, 3-56.	9.5	5
3	Weighted Residual NMF With Spatial Regularization for Hyperspectral Unmixing. IEEE Geoscience and Remote Sensing Letters, 2022, 19, 1-5.	3.1	5
4	Asymptotically Exact Data Augmentation: Models, Properties, and Algorithms. Journal of Computational and Graphical Statistics, 2021, 30, 335-348.	1.7	9
5	Successive Nonnegative Projection Algorithm for Linear Quadratic Mixtures. , 2021, , .		0
6	Provably Robust Blind Source Separation of Linear-Quadratic Near-Separable Mixtures. SIAM Journal on Imaging Sciences, 2021, 14, 1848-1889.	2.2	2
7	Matrix cofactorization for joint representation learning and supervised classification â€“ Application to hyperspectral image analysis. Neurocomputing, 2020, 385, 132-147.	5.9	2
8	Robust fusion algorithms for unsupervised change detection between multi-band optical images â€” A comprehensive case study. Information Fusion, 2020, 64, 293-317.	19.1	7
9	Hierarchical Sparse Nonnegative Matrix Factorization for Hyperspectral Unmixing with Spectral Variability. Remote Sensing, 2020, 12, 2326.	4.0	6
10	Hyperspectral and Multispectral Image Fusion Under Spectrally Varying Spatial Blurs â€“ Application to High Dimensional Infrared Astronomical Imaging. IEEE Transactions on Computational Imaging, 2020, 6, 1362-1374.	4.4	16
11	Fusion of hyperspectral and multispectral infrared astronomical images. , 2020, , .		1
12	Simulated JWST Data Sets for Multispectral and Hyperspectral Image Fusion. Astronomical Journal, 2020, 160, 28.	4.7	12
13	Matrix Cofactorization for Joint Spatialâ€“Spectral Unmixing of Hyperspectral Images. IEEE Transactions on Geoscience and Remote Sensing, 2020, 58, 4915-4927.	6.3	7
14	Fast reconstruction of atomic-scale STEM-EELS images from sparse sampling. Ultramicroscopy, 2020, 215, 112993.	1.9	11
15	Hierarchical Bayesian image analysis: From low-level modeling to robust supervised learning. Pattern Recognition, 2019, 85, 26-36.	8.1	6
16	Efficient Sampling through Variable Splitting-inspired Bayesian Hierarchical Models. , 2019, , .		0
17	A Bayesian Nonparametric Model for Unsupervised Joint Segmentation of a Collection of Images. IEEE Access, 2019, 7, 120176-120188.	4.2	1
18	Bayesian Image Restoration under Poisson Noise and Log-concave Prior. , 2019, , .		4

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19	Coupled dictionary learning for unsupervised change detection between multimodal remote sensing images. Computer Vision and Image Understanding, 2019, 189, 102817.	4.7	11
20	Hyperspectral Unmixing With Spectral Variability Using Adaptive Bundles and Double Sparsity. IEEE Transactions on Geoscience and Remote Sensing, 2019, 57, 3980-3992.	6.3	41
21	Factor Analysis of Dynamic PET Images: Beyond Gaussian Noise. IEEE Transactions on Medical Imaging, 2019, 38, 2231-2241.	8.9	6
22	Split-and-Augmented Gibbs Samplerâ€"Application to Large-Scale Inference Problems. IEEE Transactions on Signal Processing, 2019, 67, 1648-1661.	5.3	25
23	Matrix Cofactorization for Joint Unmixing and Classification of Hyperspectral Images. , 2019, , .		0
24	Partially Asynchronous Distributed Unmixing of Hyperspectral Images. IEEE Transactions on Geoscience and Remote Sensing, 2019, 57, 2009-2021.	6.3	4
25	Nonâ€linear unmixing of hyperspectral images using multipleâ€kernel selfâ€organising maps. IET Image Processing, 2019, 13, 2190-2195.	2.5	5
26	Detecting Changes Between Optical Images of Different Spatial and Spectral Resolutions: A Fusion-Based Approach. IEEE Transactions on Geoscience and Remote Sensing, 2018, 56, 1566-1578.	6.3	46
27	Hyperspectral Image Unmixing With LiDAR Data-Aided Spatial Regularization. IEEE Transactions on Geoscience and Remote Sensing, 2018, 56, 4098-4108.	6.3	26
28	A Bayesian Model for Joint Unmixing and Robust Classification of Hyperspectral Images. , 2018, , .		0
29	Reconstruction Of Partially Sampled EELS Images. , 2018, , .		1
30	A multiple endmember mixing model to handle spectral variability in hyperspectral unmixing. , 2018, , .		2
31	A Comparative Study of Fusion-Based Change Detection Methods for Multi-Band Images with Different Spectral and Spatial Resolutions. , 2018, , .		2
32	Reconstruction of Partially Sampled Multiband Imagesâ€"Application to STEM-EELS Imaging. IEEE Transactions on Computational Imaging, 2018, 4, 585-598.	4.4	11
33	A Hierarchical Bayesian Model Accounting for Endmember Variability and Abrupt Spectral Changes to Unmix Multitemporal Hyperspectral Images. IEEE Transactions on Computational Imaging, 2018, 4, 32-45.	4.4	17
34	Unmixing dynamic PET images with variable specific binding kinetics. Medical Image Analysis, 2018, 49, 117-127.	11.6	5
35	Fast Hyperspectral Unmixing in Presence of Nonlinearity or Mismodeling Effects. IEEE Transactions on Computational Imaging, 2017, 3, 146-159.	4.4	46
36	Robust Fusion of Multiband Images With Different Spatial and Spectral Resolutions for Change Detection. IEEE Transactions on Computational Imaging, 2017, 3, 175-186.	4.4	29

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37	Bayesian Antisparse Coding. IEEE Transactions on Signal Processing, 2017, 65, 1660-1672.	5.3	7
38	Unmixing multitemporal hyperspectral images accounting for smooth and abrupt variations. , 2017, , .		1
39	Bayesian Selection for the $ell _2$ -Potts Model Regularization Parameter: 1-D Piecewise Constant Signal Denoising. IEEE Transactions on Signal Processing, 2017, 65, 5215-5224.	5.3	11
40	A generalized Swendsen-Wang algorithm for Bayesian nonparametric joint segmentation of multiple images. , 2017, , .		3
41	Change detection between multi-band images using a robust fusion-based approach. , 2017, , .		4
42	Fast hyperspectral unmixing in presence of sparse multiple scattering nonlinearities. , 2017, , .		0
43	A Split-and-Merge Approach for Hyperspectral Band Selection. IEEE Geoscience and Remote Sensing Letters, 2017, 14, 1378-1382.	3.1	22
44	Bayesian nonparametric subspace estimation. , 2017, , .		0
45	Reconstruction of Randomly and Partially Sampled STEM Spectrum-Images. Microscopy and Microanalysis, 2017, 23, 170-171.	0.4	0
46	Unmixing dynamic PET images with a PALM algorithm. , 2017, , .		0
47	Bayesian-driven criterion to automatically select the regularization parameter in the â„“<inf>1</inf>-Potts model. , 2017, , .		3
48	Blind model-based fusion of multi-band and panchromatic images. , 2016, , .		10
49	Unmixing multitemporal hyperspectral images with variability: An online algorithm. , 2016, , .		2
50	Fast Single Image Super-Resolution Using a New Analytical Solution for <inline-formula> <tex-math notation="LaTeX">$ell _{2}$ </tex-math> </inline-formula>â€“<inline-formula> <tex-math notation="LaTeX">$ell _{2}$ </tex-math> </inline-formula> Problems. IEEE Transactions on Image Processing, 2016, 25, 3683-3697.	9.8	79
51	R-FUSE: Robust Fast Fusion of Multiband Images Based on Solving a Sylvester Equation. IEEE Signal Processing Letters, 2016, 23, 1632-1636.	3.6	84
52	Combining local regularity estimation and total variation optimization for scale-free texture segmentation. IEEE Transactions on Computational Imaging, 2016, , 1-1.	4.4	6
53	Joint segmentation of multiple images with shared classes: A Bayesian nonparametrics approach. , 2016, , .		3
54	Multiband Image Fusion Based on Spectral Unmixing. IEEE Transactions on Geoscience and Remote Sensing, 2016, 54, 7236-7249.	6.3	119

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55	Democratic prior for anti-sparse coding. , 2016, , .		1
56	Online Unmixing of Multitemporal Hyperspectral Images Accounting for Spectral Variability. IEEE Transactions on Image Processing, 2016, 25, 3979-3990.	9.8	32
57	Detection and Correction of Glitches in a Multiplexed Multichannel Data Streamâ€"Application to the MADRAS Instrument. IEEE Transactions on Geoscience and Remote Sensing, 2016, 54, 2803-2811.	6.3	1
58	Hyperspectral Unmixing With Spectral Variability Using a Perturbed Linear Mixing Model. IEEE Transactions on Signal Processing, 2016, 64, 525-538.	5.3	146
59	A perturbed linear mixing model accounting for spectral variability. , 2015, , .		1
60	Bayesian fusion of multispectral and hyperspectral images using a block coordinate descent method. , 2015, , .		4
61	Hyperspectral unmixing accounting for spatial correlations and endmember variability. , 2015, , .		0
62	Unmixing multitemporal hyperspectral images accounting for endmember variability. , 2015, , .		5
63	Fuse: A fast multi-band image fusion algorithm. , 2015, , .		2
64	Hyperspectral and Multispectral Image Fusion Based on a Sparse Representation. IEEE Transactions on Geoscience and Remote Sensing, 2015, 53, 3658-3668.	6.3	488
65	Toward Fast Transform Learning. International Journal of Computer Vision, 2015, 114, 195-216.	15.6	16
66	Bayesian Estimation of the Multifractality Parameter for Image Texture Using a Whittle Approximation. IEEE Transactions on Image Processing, 2015, 24, 2540-2551.	9.8	17
67	Nonlinear Hyperspectral Unmixing With Robust Nonnegative Matrix Factorization. IEEE Transactions on Image Processing, 2015, 24, 4810-4819.	9.8	147
68	A new Bayesian unmixing algorithm for hyperspectral images mitigating endmember variability. , 2015, , .		5
69	Hyperspectral Pansharpening: A Review. IEEE Geoscience and Remote Sensing Magazine, 2015, 3, 27-46.	9.6	593
70	Fast Fusion of Multi-Band Images Based on Solving a Sylvester Equation. IEEE Transactions on Image Processing, 2015, 24, 4109-4121.	9.8	324
71	Bayesian Fusion of Multi-Band Images. IEEE Journal on Selected Topics in Signal Processing, 2015, 9, 1117-1127.	10.8	193
72	Unsupervised Unmixing of Hyperspectral Images Accounting for Endmember Variability. IEEE Transactions on Image Processing, 2015, 24, 4904-4917.	9.8	53

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73	Residual component analysis of hyperspectral images for joint nonlinear unmixing and nonlinearity detection. , 2014, , .		2
74	Inverse problem formulation for regularity estimation in images. , 2014, , .		4
75	Bayesian fusion of multispectral and hyperspectral images with unknown sensor spectral response. , 2014, , .		9
76	A hierarchical sparsity-smoothness Bayesian model for ℓ<inf>0</inf> + ℓ<inf>1</inf> + ℓ<inf>2</inf> regularization. , 2014, , .		1
77	Nonlinear Unmixing of Hyperspectral Images: Models and Algorithms. IEEE Signal Processing Magazine, 2014, 31, 82-94.	5.6	362
78	Bayesian fusion of hyperspectral and multispectral images. , 2014, , .		52
79	Residual Component Analysis of Hyperspectral Imagesâ€"Application to Joint Nonlinear Unmixing and Nonlinearity Detection. IEEE Transactions on Image Processing, 2014, 23, 2148-2158.	9.8	84
80	Unsupervised Post-Nonlinear Unmixing of Hyperspectral Images Using a Hamiltonian Monte Carlo Algorithm. IEEE Transactions on Image Processing, 2014, 23, 2663-2675.	9.8	110
81	Joint Bayesian Estimation of Close Subspaces from Noisy Measurements. IEEE Signal Processing Letters, 2014, 21, 168-171.	3.6	1
82	Sampling from a multivariate Gaussian distribution truncated on a simplex: A review. , 2014, , .		14
83	Computing the Cramerâ€"Rao Bound of Markov Random Field Parameters: Application to the Ising and the Potts Models. IEEE Signal Processing Letters, 2014, 21, 47-50.	3.6	7
84	A Comparison of Nonlinear Mixing Models for Vegetated Areas Using Simulated and Real Hyperspectral Data. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2014, 7, 1869-1878.	4.9	42
85	Variational semi-blind sparse deconvolution with orthogonal kernel bases and its application to MRFM. Signal Processing, 2014, 94, 386-400.	3.7	5
86	Nonlinear unmixing of vegetated areas: A model comparison based on simulated and real hyperspectral data. , 2014, , .		0
87	Unsupervised Bayesian linear unmixing of gene expression microarrays. BMC Bioinformatics, 2013, 14, 99.	2.6	9
88	Nonlinearity Detection in Hyperspectral Images Using a Polynomial Post-Nonlinear Mixing Model. IEEE Transactions on Image Processing, 2013, 22, 1267-1276.	9.8	35
89	Nonlinear Spectral Unmixing of Hyperspectral Images Using Gaussian Processes. IEEE Transactions on Signal Processing, 2013, 61, 2442-2453.	5.3	91
90	Estimating the Granularity Coefficient of a Potts-Markov Random Field Within a Markov Chain Monte Carlo Algorithm. IEEE Transactions on Image Processing, 2013, 22, 2385-2397.	9.8	62

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91	Adaptive Markov Random Fields for Joint Unmixing and Segmentation of Hyperspectral Images. IEEE Transactions on Image Processing, 2013, 22, 5-16.	9.8	51
92	Bayesian estimation for the multifractality parameter. , 2013, , .		9
93	Robust nonnegative matrix factorization for nonlinear unmixing of hyperspectral images. , 2013, , .		9
94	Bayesian subspace estimation using CS decomposition. , 2012, , .		0
95	Hyperspectral Image Unmixing Using a Multiresolution Sticky HDP. IEEE Transactions on Signal Processing, 2012, 60, 1656-1671.	5.3	20
96	Unsupervised nonlinear unmixing of hyperspectral images using Gaussian processes. , 2012, , .		3
97	Variational semi-blind sparse image reconstruction with application to MRFM. , 2012, , .		2
98	Segmentation of Skin Lesions in 2-D and 3-D Ultrasound Images Using a Spatially Coherent Generalized Rayleigh Mixture Model. IEEE Transactions on Medical Imaging, 2012, 31, 1509-1520.	8.9	52
99	Spectral mixture analysis of EELS spectrum-images. Ultramicroscopy, 2012, 120, 25-34.	1.9	86
100	Blind Deconvolution of Sparse Pulse Sequences Under a Minimum Distance Constraint: A Partially Collapsed Gibbs Sampler Method. IEEE Transactions on Signal Processing, 2012, 60, 2727-2743.	5.3	34
101	Detecting nonlinear mixtures in hyperspectral images. , 2012, , .		3
102	CS Decomposition Based Bayesian Subspace Estimation. IEEE Transactions on Signal Processing, 2012, 60, 4210-4218.	5.3	5
103	Hyperspectral Unmixing Overview: Geometrical, Statistical, and Sparse Regression-Based Approaches. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2012, 5, 354-379.	4.9	2,181
104	Semi-Blind Sparse Image Reconstruction With Application to MRFM. IEEE Transactions on Image Processing, 2012, 21, 3838-3849.	9.8	11
105	Supervised Nonlinear Spectral Unmixing Using a Postnonlinear Mixing Model for Hyperspectral Imagery. IEEE Transactions on Image Processing, 2012, 21, 3017-3025.	9.8	190
106	Bilinear models for nonlinear unmixing of hyperspectral images. , 2011, , .		25
107	Nonlinear Unmixing of Hyperspectral Images Using a Generalized Bilinear Model. IEEE Transactions on Geoscience and Remote Sensing, 2011, 49, 4153-4162.	6.3	329
108	Accuracy and performance of linear unmixing techniques for detecting minerals on OMEGA/Mars express. , 2011, , .		3

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109	Nonlinear unmixing of hyperspectral images using a generalized bilinear model. , 2011, , .		6
110	Enhancing Hyperspectral Image Unmixing With Spatial Correlations. IEEE Transactions on Geoscience and Remote Sensing, 2011, 49, 4239-4247.	6.3	119
111	Minimum Mean Square Distance Estimation of a Subspace. IEEE Transactions on Signal Processing, 2011, 59, 5709-5720.	5.3	67
112	Bayesian segmentation of chest tumors in pet scans using a Poisson-Gamma mixture model. , 2011, , .		3
113	A post nonlinear mixing model for hyperspectral images unmixing. , 2011, , .		6
114	Myopic sparse image reconstruction with application to MRFM. Proceedings of SPIE, 2011, , .	0.8	2
115	Temporal Dynamics of Host Molecular Responses Differentiate Symptomatic and Asymptomatic Influenza A Infection. PLoS Genetics, 2011, 7, e1002234.	3.5	173
116	Supervised nonlinear spectral unmixing using a polynomial post nonlinear model for hyperspectral imagery. , 2011, , .		20
117	A Bernoulli-Gaussian model for gene factor analysis. , 2011, , .		1
118	Bayesian estimation of a subspace. , 2011, , .		0
119	Labeling skin tissues in ultrasound images using a generalized Rayleigh mixture model. , 2011, , .		3
120	Joint spectral classification and unmixing using adaptative pixel neighborhoods. , 2011, , .		0
121	Variational methods for spectral unmixing of hyperspectral images. , 2011, , .		1
122	Nonlinear unmixing of hyperspectral images using radial basis functions and orthogonal least squares. , 2011, , .		17
123	Bayesian compressed sensing in ultrasound imaging. , 2011, , .		14
124	Unmixing hyperspectral images using the generalized bilinear model. , 2011, , .		44
125	Unmixing hyperspectral images using Markov random fields. , 2011, , .		0
126	Implementation Strategies for Hyperspectral Unmixing Using Bayesian Source Separation. IEEE Transactions on Geoscience and Remote Sensing, 2010, , .	6.3	39

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127	Estimating the Number of Endmembers in Hyperspectral Images Using the Normal Compositional Model and a Hierarchical Bayesian Algorithm. IEEE Journal on Selected Topics in Signal Processing, 2010, 4, 582-591.	10.8	56
128	Markov random fields for joint unmixing and segmentation of hyperspectral images. , 2010, , .		4
129	A partially collapsed Gibbs sampler for parameters with local constraints. , 2010, , .		5
130	Bayesian Estimation of Linear Mixtures Using the Normal Compositional Model. Application to Hyperspectral Imagery. IEEE Transactions on Image Processing, 2010, 19, 1403-1413.	9.8	167
131	Bayesian Orthogonal Component Analysis for Sparse Representation. IEEE Transactions on Signal Processing, 2010, 58, 2675-2685.	5.3	46
132	Accuracy and performance of optimized Bayesian Source Separation for hyperspectral unmixing. , 2010, , .		2
133	A reversible-jump mcmc algorithm for estimating the number of endmembers in the normal compositional model application to the unmixing of hyperspectral images. , 2010, , .		0
134	Unsupervised Bayesian analysis of gene expression patterns. , 2010, , .		0
135	SAlgorithmes bayÃ©siens pour le dÃ©mÃ©lange supervisÃ©, semi-supervisÃ© et non-supervisÃ© dâ€™images hyperspectrales. Traitement Du Signal, 2010, 27, 79-108.	1.3	2
136	Unmixing hyperspectral images using a normal compositional model and MCMC methods. , 2009, , .		6
137	Bayesian sparse image reconstruction for MRFM. , 2009, , .		0
138	Bayesian separation of spectral sources under non-negativity and full additivity constraints. Signal Processing, 2009, 89, 2657-2669.	3.7	71
139	Joint Bayesian Endmember Extraction and Linear Unmixing for Hyperspectral Imagery. IEEE Transactions on Signal Processing, 2009, 57, 4355-4368.	5.3	299
140	Hierarchical Bayesian Sparse Image Reconstruction With Application to MRFM. IEEE Transactions on Image Processing, 2009, 18, 2059-2070.	9.8	59
141	An NCM-based Bayesian algorithm for hyperspectral unmixing. , 2009, , .		2
142	MCMC Sampling for Joint Segmentation of Wind Speed and Direction. , 2009, , .		2
143	Library-based linear unmixing for hyperspectral imagery via reversible jump MCMC sampling. , 2009, , .		3
144	Subspace-based Bayesian blind source separation for hyperspectral imagery. , 2009, , .		1

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145	Material identification on martian hyperspectral images using bayesian source separation. , 2009, , .		0
146	Linear unmixing of hyperspectral images using a scaled gradient method. , 2009, , .		10
147	Semi-Supervised Linear Spectral Unmixing Using a Hierarchical Bayesian Model for Hyperspectral Imagery. IEEE Transactions on Signal Processing, 2008, 56, 2684-2695.	5.3	158
148	Bayesian linear unmixing of hyperspectral images corrupted by colored Gaussian noise with unknown covariance matrix. , 2008, , .		8
149	Spectral Unmixing of Hyperspectral Images using a Hierarchical Bayesian Model. , 2007, , .		3
150	Blind Unmixing of Linear Mixtures using a Hierarchical Bayesian Model. Application to Spectroscopic Signal Analysis. , 2007, , .		4
151	Joint Segmentation of Multivariate Astronomical Time Series: Bayesian Sampling With a Hierarchical Model. IEEE Transactions on Signal Processing, 2007, 55, 414-423.	5.3	36
152	Joint Segmentation of Piecewise Constant Autoregressive Processes by Using a Hierarchical Model and a Bayesian Sampling Approach. IEEE Transactions on Signal Processing, 2007, 55, 1251-1263.	5.3	43
153	Joint segmentation of wind speed and direction using a hierarchical model. Computational Statistics and Data Analysis, 2007, 51, 5603-5621.	1.2	21
154	Performance comparison of geometric and statistical methods for endmembers extraction in hyperspectral imagery. , 2005, 5982, 335.		1