Nicolas Gillis

List of Publications by Year
in descending order

89 papers	2,205 citations	331259 21 h-index	233125 45 g-index
89 all docs	89 docs citations	89 times ranked	1636 citing authors

#	Article	IF	Citations
1	A Signal Processing Perspective on Hyperspectral Unmixing: Insights from Remote Sensing. IEEE Signal Processing Magazine, 2014, 31, 67-81.	4.6	362
2	Accelerated Multiplicative Updates and Hierarchical ALS Algorithms for Nonnegative Matrix Factorization. Neural Computation, 2012, 24, 1085-1105.	1.3	220
3	Fast and Robust Recursive Algorithmsfor Separable Nonnegative Matrix Factorization. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2014, 36, 698-714.	9.7	215
4	Low-Rank Matrix Approximation with Weights or Missing Data Is NP-Hard. SIAM Journal on Matrix Analysis and Applications, 2011, 32, 1149-1165.	0.7	147
5	Two algorithms for orthogonal nonnegative matrix factorization with application to clustering. Neurocomputing, 2014, 141, 15-25.	3.5	111
6	Hierarchical Clustering of Hyperspectral Images Using Rank-Two Nonnegative Matrix Factorization. IEEE Transactions on Geoscience and Remote Sensing, 2015, 53, 2066-2078.	2.7	95
7	Using underapproximations for sparse nonnegative matrix factorization. Pattern Recognition, 2010, 43, 1676-1687.	5.1	88
8	Successive Nonnegative Projection Algorithm for Robust Nonnegative Blind Source Separation. SIAM Journal on Imaging Sciences, 2014, 7, 1420-1450.	1.3	71
9	On the geometric interpretation of the nonnegative rank. Linear Algebra and Its Applications, 2012, 437, 2685-2712.	0.4	53
10	Sparse nonnegative matrix underapproximation and its application to hyperspectral image analysis. Linear Algebra and Its Applications, 2013, 438, 3991-4007.	0.4	42
11	Blind Audio Source Separation With Minimum-Volume Beta-Divergence NMF. IEEE Transactions on Signal Processing, 2020, 68, 3400-3410.	3.2	39
12	Algorithms and Comparisons of Nonnegative Matrix Factorizations With Volume Regularization for Hyperspectral Unmixing. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2019, 12, 4843-4853.	2.3	33
13	On computing the distance to stability for matrices using linear dissipative Hamiltonian systems. Automatica, 2017, 85, 113-121.	3.0	32
14	A survey on deep matrix factorizations. Computer Science Review, 2021, 42, 100423.	10.2	31
15	Accelerating Nonnegative Matrix Factorization Algorithms Using Extrapolation. Neural Computation, 2019, 31, 417-439.	1.3	30
16	Robustness Analysis of Hottopixx, a Linear Programming Model for Factoring Nonnegative Matrices. SIAM Journal on Matrix Analysis and Applications, 2013, 34, 1189-1212.	0.7	29
17	Improved SVD-based initialization for nonnegative matrix factorization using low-rank correction. Pattern Recognition Letters, 2019, 122, 53-59.	2.6	28
18	Semidefinite Programming Based Preconditioning for More Robust Near-Separable Nonnegative Matrix Factorization. SIAM Journal on Optimization, 2015, 25, 677-698.	1.2	27

#	Article	IF	Citations
19	Efficient and Non-Convex Coordinate Descent for Symmetric Nonnegative Matrix Factorization. IEEE Transactions on Signal Processing, 2016, 64, 5571-5584.	3.2	27
20	Heuristics for exact nonnegative matrix factorization. Journal of Global Optimization, 2016, 65, 369-400.	1.1	24
21	Scalable and robust sparse subspace clustering using randomized clustering and multilayer graphs. Signal Processing, 2019, 163, 166-180.	2.1	24
22	On the Complexity of Robust PCA and ℓ_1-Norm Low-Rank Matrix Approximation. Mathematics of Operations Research, 2018, 43, 1072-1084.	0.8	22
23	Algorithms for Nonnegative Matrix Factorization with the Kullback–Leibler Divergence. Journal of Scientific Computing, 2021, 87, 1.	1.1	22
24	Sequential dimensionality reduction for extracting localized features. Pattern Recognition, 2017, 63, 15-29.	5.1	21
25	UTA-poly and UTA-splines: Additive value functions with polynomial marginals. European Journal of Operational Research, 2018, 264, 405-418.	3.5	21
26	Generalized Separable Nonnegative Matrix Factorization. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2021, 43, 1546-1561.	9.7	21
27	A multilevel approach for nonnegative matrix factorization. Journal of Computational and Applied Mathematics, 2012, 236, 1708-1723.	1.1	20
28	A continuous characterization of the maximum-edge biclique problem. Journal of Global Optimization, 2014, 58, 439-464.	1.1	20
29	A Fast Gradient Method for Nonnegative Sparse Regression With Self-Dictionary. IEEE Transactions on Image Processing, 2018, 27, 24-37.	6.0	19
30	Minimum-volume Rank-deficient Nonnegative Matrix Factorizations. , 2019, , .		17
31	Document classification using nonnegative matrix factorization and underapproximation. , 2009, , .		16
32	Finding the Nearest Positive-Real System. SIAM Journal on Numerical Analysis, 2018, 56, 1022-1047.	1.1	16
33	Computing the nearest stable matrix pairs. Numerical Linear Algebra With Applications, 2018, 25, e2153.	0.9	16
34	Exact and Heuristic Algorithms for Semi-Nonnegative Matrix Factorization. SIAM Journal on Matrix Analysis and Applications, 2015, 36, 1404-1424.	0.7	15
35	Orthogonal joint sparse NMF for microarray data analysis. Journal of Mathematical Biology, 2019, 79, 223-247.	0.8	14
36	Beyond linear subspace clustering: A comparative study of nonlinear manifold clustering algorithms. Computer Science Review, 2021, 42, 100435.	10.2	14

#	Article	IF	Citations
37	Dictionary-Based Tensor Canonical Polyadic Decomposition. IEEE Transactions on Signal Processing, 2018, 66, 1876-1889.	3.2	13
38	Solving the Maximum Clique Problem with Symmetric Rank-One Non-negative Matrix Approximation. Journal of Optimization Theory and Applications, 2017, 173, 279-296.	0.8	11
39	Approximating the nearest stable discrete-time system. Linear Algebra and Its Applications, 2019, 573, 37-53.	0.4	11
40	Computing Large-Scale Matrix and Tensor Decomposition With Structured Factors: A Unified Nonconvex Optimization Perspective. IEEE Signal Processing Magazine, 2020, 37, 78-94.	4.6	11
41	Enhancing Pure-Pixel Identification Performance via Preconditioning. SIAM Journal on Imaging Sciences, 2015, 8, 1161-1186.	1.3	9
42	Multi-block Bregman proximal alternating linearized minimization and its application to orthogonal nonnegative matrix factorization. Computational Optimization and Applications, 2021, 79, 681-715.	0.9	9
43	A Block Inertial Bregman Proximal Algorithm for Nonsmooth Nonconvex Problems with Application to Symmetric Nonnegative Matrix Tri-Factorization. Journal of Optimization Theory and Applications, 2021, 190, 234-258.	0.8	8
44	Simplex-Structured Matrix Factorization: Sparsity-Based Identifiability and Provably Correct Algorithms. SIAM Journal on Mathematics of Data Science, 2021, 3, 593-623.	1.0	8
45	Dimensionality reduction, classification, and spectral mixture analysis using nonnegative underapproximation. , 2010, , .		7
46	Algorithms for positive semidefinite factorization. Computational Optimization and Applications, 2018, 71, 193-219.	0.9	7
47	Near-Convex Archetypal Analysis. IEEE Signal Processing Letters, 2020, 27, 81-85.	2.1	7
48	Spectral Unmixing With Multiple Dictionaries. IEEE Geoscience and Remote Sensing Letters, 2018, 15, 187-191.	1.4	6
49	A semi-analytical approach for the positive semidefinite Procrustes problem. Linear Algebra and Its Applications, 2018, 540, 112-137.	0.4	6
50	Multi-resolution beta-divergence NMF for blind spectral unmixing. Signal Processing, 2022, 193, 108428.	2.1	6
51	Successive Projection Algorithm Robust to Outliers. , 2019, , .		5
52	Exact Sparse Nonnegative Least Squares. , 2020, , .		5
53	Multiplicative Updates for NMF with eta-Divergences under Disjoint Equality Constraints. SIAM Journal on Matrix Analysis and Applications, 2021, 42, 730-752.	0.7	5
54	Sparse nonnegative matrix underapproximation and its application to hyperspectral image analysis. , 2011, , .		4

#	Article	IF	Citations
55	On the linear extension complexity of regular n-gons. Linear Algebra and Its Applications, 2017, 521, 217-239.	0.4	4
56	Low-rank matrix approximation in the infinity norm. Linear Algebra and Its Applications, 2019, 581, 367-382.	0.4	4
57	A note on approximating the nearest stable discrete-time descriptor systems with fixed rank. Applied Numerical Mathematics, 2020, 148, 131-139.	1.2	4
58	Minimal-norm static feedbacks using dissipative Hamiltonian matrices. Linear Algebra and Its Applications, 2021, 623, 258-281.	0.4	4
59	Off-diagonal symmetric nonnegative matrix factorization. Numerical Algorithms, 2021, 88, 939-963.	1.1	4
60	Some Theory on Non-negative Tucker Decomposition. Lecture Notes in Computer Science, 2017, , 152-161.	1.0	4
61	Priors in sparse recursive decompositions of hyperspectral images. , 2012, , .		3
62	Nonnegative Low-rank Sparse Component Analysis. , 2019, , .		3
63	Identifiability of Complete Dictionary Learning. SIAM Journal on Mathematics of Data Science, 2019, 1, 518-536.	1.0	3
64	Extrapolated Alternating Algorithms for Approximate Canonical Polyadic Decomposition. , 2020, , .		3
65	A Provably Correct and Robust Algorithm for Convolutive Nonnegative Matrix Factorization. IEEE Transactions on Signal Processing, 2020, , 1-1.	3.2	3
66	Distributionally Robust and Multi-Objective Nonnegative Matrix Factorization. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2021, PP, 1-1.	9.7	3
67	Structured nonnegative matrix factorization for traffic flow estimation of large cloud networks. Computer Networks, 2021, 201, 108564.	3.2	3
68	Inertial Majorization-Minimization Algorithm for Minimum-Volume NMF. , 2021, , .		3
69	Bounded Simplex-Structured Matrix Factorization. , 2022, , .		3
70	A new approach to dictionary-based nonnegative matrix factorization. , 2017, , .		2
71	Separable Simplex-structured Matrix Factorization: Robustness of Combinatorial Approaches. , 2019, , .		2
72	Provably Robust Blind Source Separation of Linear-Quadratic Near-Separable Mixtures. SIAM Journal on Imaging Sciences, 2021, 14, 1848-1889.	1.3	2

#	Article	IF	Citations
73	Deep orthogonal matrix factorization as a hierarchical clustering technique. , 2021, , .		2
74	Block Bregman Majorization Minimization with Extrapolation. SIAM Journal on Mathematics of Data Science, 2022, 4, 1-25.	1.0	2
75	Multiplicative updates for polynomial root finding. Information Processing Letters, 2018, 132, 14-18.	0.4	1
76	Volume regularized non-negative matrix factorizations. , 2018, , .		1
77	A geometric lower bound on the extension complexity of polytopes based on the f-vector. Discrete Applied Mathematics, 2021, 303, 22-38.	0.5	1
78	Exact Biobjective k-Sparse Nonnegative Least Squares. , 2021, , .		1
79	Enhancing pure-pixel identification performance via preconditioning. , 2014, , .		0
80	Optimizing over the properly efficient set of convex multi-objective optimization problems. Annals of Operations Research, 2020, 295, 575-604.	2.6	0
81	On approximating the nearest Î©â€stable matrix. Numerical Linear Algebra With Applications, 2020, 27, e2282.	0.9	0
82	Successive Nonnegative Projection Algorithm for Linear Quadratic Mixtures. , 2021, , .		0
83	Accelerating block coordinate descent for nonnegative tensor factorization. Numerical Linear Algebra With Applications, 2021, 28, e2373.	0.9	0
84	Nonnegative Unimodal Matrix Factorization. , 2021, , .		0
85	Characterization of the dissipative mappings and their application to perturbations of dissipativeâ€Hamiltonian systems. Numerical Linear Algebra With Applications, 0, , e2402.	0.9	0
86	On a minimum enclosing ball of a collection of linear subspaces. Linear Algebra and Its Applications, 2021, 625, 248-278.	0.4	0
87	Sparse Separable Nonnegative Matrix Factorization. Lecture Notes in Computer Science, 2021, , 335-350.	1.0	0
88	Fast algorithm for complex-NMF with application to source separation. , 2021, , .		0
89	On the non-symmetric semidefinite Procrustes problem. Linear Algebra and Its Applications, 2022, 648, 133-159.	0.4	0