Amit Singer

List of Publications by Year
in descending order

84	3,260	159585 30	175258 52
papers	citations	h-index	g-index

85	85	85	1750
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Super-resolution multi-reference alignment. Information and Inference, 2022, 11, 533-555.	1.6	8
2	NMR assignment through linear programming. Journal of Global Optimization, 2022, 83, 3-28.	1.8	2
3	An Approximate Expectation-Maximization for Two-Dimensional Multi-Target Detection. IEEE Signal Processing Letters, 2022, 29, 1087-1091.	3.6	3
4	Sparse Multi-Reference Alignment: Sample Complexity and Computational Hardness. , 2022, , .		3
5	A molecular prior distribution for Bayesian inference based on Wilson statistics. Computer Methods and Programs in Biomedicine, 2022, 221, 106830.	4.7	7
6	Random conical tilt reconstruction without particle picking in cryo-electron microscopy. Acta Crystallographica Section A: Foundations and Advances, 2022, 78, 294-301.	0.1	5
7	Ab-initio contrast estimation and denoising of cryo-EM images. Computer Methods and Programs in Biomedicine, 2022, 224, 107018.	4.7	4
8	Centering Noisy Images with Application to Cryo-EM. SIAM Journal on Imaging Sciences, 2021, 14, 689-716.	2.2	3
9	The generalized orthogonal Procrustes problem in the high noise regime. Information and Inference, 2021, 10, 921-954.	1.6	9
10	Wilson statistics: derivation, generalization and applications to electron cryomicroscopy. Acta Crystallographica Section A: Foundations and Advances, 2021, 77, 472-479.	0.1	8
11	Manifold Learning with Arbitrary Norms. Journal of Fourier Analysis and Applications, 2021, 27, 1.	1.0	10
12	A representation theory perspective on simultaneous alignment and classification. Applied and Computational Harmonic Analysis, 2020, 49, 1001-1024.	2.2	6
13	Heterogeneous Multireference Alignment for Images With Application to 2D Classification in Single Particle Reconstruction. IEEE Transactions on Image Processing, 2020, 29, 1699-1710.	9.8	15
14	Cryo-EM reconstruction of continuous heterogeneity by Laplacian spectral volumes. Inverse Problems, 2020, 36, 024003.	2.0	41
15	Earthmover-Based Manifold Learning for Analyzing Molecular Conformation Spaces. , 2020, , .		5
16	Steerable ePCA: Rotationally Invariant Exponential Family PCA. IEEE Transactions on Image Processing, 2020, 29, 6069-6081.	9.8	2
17	Image Recovery from Rotational And Translational Invariants. , 2020, , .		6
18	Non-unique games over compact groups and orientation estimation in cryo-EM. Inverse Problems, 2020, 36, 064002.	2.0	23

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19	Multi-Target Detection With an Arbitrary Spacing Distribution. IEEE Transactions on Signal Processing, 2020, 68, 1589-1601.	5.3	11
20	Computational Methods for Single-Particle Electron Cryomicroscopy. Annual Review of Biomedical Data Science, 2020, 3, 163-190.	6.5	49
21	Hyper-molecules: on the representation and recovery of dynamical structures for applications in flexible macro-molecules in cryo-EM. Inverse Problems, 2020, 36, 044005.	2.0	17
22	Reducing bias and variance for CTF estimation in single particle cryo-EM. Ultramicroscopy, 2020, 212, 112950.	1.9	7
23	Single-Particle Cryo-Electron Microscopy: Mathematical Theory, Computational Challenges, and Opportunities. IEEE Signal Processing Magazine, 2020, 37, 58-76.	5.6	84
24	Method of moments for 3D single particleab initiomodeling with non-uniform distribution of viewing angles. Inverse Problems, 2020, 36, 044003.	2.0	30
25	Multireference Alignment Is Easier With an Aperiodic Translation Distribution. IEEE Transactions on Information Theory, 2019, 65, 3565-3584.	2.4	29
26	Multi-target detection with application to cryo-electron microscopy. Inverse Problems, 2019, 35, 104003.	2.0	21
27	The Sample Complexity of Multireference Alignment. SIAM Journal on Mathematics of Data Science, 2019, 1, 497-517.	1.8	40
28	MATHEMATICS FOR CRYO-ELECTRON MICROSCOPY. , 2019, , .		9
29	Semidefinite programming approach for the quadratic assignment problem with a sparse graph. Computational Optimization and Applications, 2018, 69, 677-712.	1.6	15
30	Bispectrum Inversion With Application to Multireference Alignment. IEEE Transactions on Signal Processing, 2018, 66, 1037-1050.	5.3	61
31	Estimation in the Group Action Channel. , 2018, , .		18
32	Structural Variability from Noisy Tomographic Projections. SIAM Journal on Imaging Sciences, 2018, 11, 1441-1492.	2.2	34
33	3D ab initio modeling in cryo-EM by autocorrelation analysis. , 2018, , .		20
34	APPLE picker: Automatic particle picking, a low-effort cryo-EM framework. Journal of Structural Biology, 2018, 204, 215-227.	2.8	35
35	Heterogeneous multireference alignment: A single pass approach. , 2018, , .		20
36	Synchronization over Cartan Motion Groups via Contraction. SIAM Journal on Applied Algebra and Geometry, 2018, 2, 207-241.	1.4	16

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37	A survey of structure from motion.. Acta Numerica, 2017, 26, 305-364.	10.7	234
38	Disentangling orthogonal matrices. Linear Algebra and Its Applications, 2017, 524, 159-181.	0.9	2
39	Tightness of the maximum likelihood semidefinite relaxation for angular synchronization. Mathematical Programming, 2017, 163, 145-167.	2.4	66
40	Mahalanobis distance for class averaging of cryo-EM images. , 2017, 2017, 654-658.		5
41	Synthesizing developmental trajectories. PLoS Computational Biology, 2017, 13, e1005742.	3.2	8
42	Factor analysis for spectral estimation. , 2017, 2017, 169-173.		2
43	Spectral convergence of the connection Laplacian from random samples. Information and Inference, 2016, , iaw016.	1.6	11
44	MarÄenkoâ€“Pastur law for Tylerâ€™s M-estimator. Journal of Multivariate Analysis, 2016, 149, 114-123.	1.0	11
45	Approximating the little Grothendieck problem over the orthogonal and unitary groups. Mathematical Programming, 2016, 160, 433-475.	2.4	14
46	Denoising and covariance estimation of single particle cryo-EM images. Journal of Structural Biology, 2016, 195, 72-81.	2.8	51
47	Fast Steerable Principal Component Analysis. IEEE Transactions on Computational Imaging, 2016, 2, 1-12.	4.4	47
48	Orthogonal matrix retrieval in cryo-electron microscopy. , 2015, 2015, 1048-1052.		9
49	Stable Camera Motion Estimation Using Convex Programming. SIAM Journal on Imaging Sciences, 2015, 8, 1220-1262.	2.2	32
50	Covariance estimation using conjugate gradient for 3D classification in CRYO-EM. , 2015, 2015, 200-204.		20
51	Robust camera location estimation by convex programming. , 2015, , .		67
52	Temporal ordering and registration of images in studies of developmental dynamics. Development (Cambridge), 2015, 142, 1717-24.	2.5	15
53	Large-scale sensor network localization via rigid subnetwork registration. , 2015, , .		7
54	Cramer-Rao bounds for synchronization of rotations. Information and Inference, 2014, 3, 1-39.	1.6	50

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55	Multireference alignment using semidefinite programming. , 2014, , .		42
56	Decoding Binary Node Labels from Censored Edge Measurements: Phase Transition and Efficient Recovery. IEEE Transactions on Network Science and Engineering, 2014, 1, 10-22.	6.4	61
57	Rotationally invariant image representation for viewing direction classification in cryo-EM. Journal of Structural Biology, 2014, 186, 153-166.	2.8	79
58	A Cheeger Inequality for the Graph Connection Laplacian. SIAM Journal on Matrix Analysis and Applications, 2013, 34, 1611-1630.	1.4	69
59	Robust estimation of rotations from relative measurements by maximum likelihood. , 2013, , .		21
60	Noisy dynamic simulations in the presence of symmetry: Data alignment and model reduction. Computers and Mathematics With Applications, 2013, 65, 1535-1557.	2.7	18
61	Fourierâ€“Bessel rotational invariant eigenimages. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2013, 30, 871.	1.5	38
62	Two-Dimensional Tomography from Noisy Projections Taken at Unknown Random Directions. SIAM Journal on Imaging Sciences, 2013, 6, 136-175.	2.2	30
63	Orientation Determination of Cryo-EM Images Using Least Unsquared Deviations. SIAM Journal on Imaging Sciences, 2013, 6, 2450-2483.	2.2	37
64	Global Motion Estimation from Point Matches. , 2012, , .		114
65	Eigenvector synchronization, graph rigidity and the molecule problem. Information and Inference, 2012, 1, 21-67.	1.6	41
66	Viewing Direction Estimation in Cryo-EM Using Synchronization. SIAM Journal on Imaging Sciences, 2012, 5, 1088-1110.	2.2	59
67	Non-Local Euclidean Medians. IEEE Signal Processing Letters, 2012, 19, 745-748.	3.6	60
68	Vector diffusion maps and the connection Laplacian. Communications on Pure and Applied Mathematics, 2012, 65, 1067-1144.	3.1	154
69	Center of Mass Operators for Cryo-EMâ€”Theory and Implementation. Nanostructure Science and Technology, 2012, , 147-177.	0.1	2
70	Viewing Angle Classification of Cryo-Electron Microscopy Images Using Eigenvectors. SIAM Journal on Imaging Sciences, 2011, 4, 723-759.	2.2	53
71	Representation theoretic patterns in three dimensional Cryo-Electron Microscopy I: The intrinsic reconstitution algorithm. Annals of Mathematics, 2011, 174, 1219-1241.	4.2	26
72	Representation Theoretic Patterns in Three-Dimensional Cryo-Electron Microscopy IIâ€”The Class Averaging Problem. Foundations of Computational Mathematics, 2011, 11, 589-616.	2.5	19

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73	Angular synchronization by eigenvectors and semidefinite programming. Applied and Computational Harmonic Analysis, 2011, 30, 20-36.	2.2	234
74	Orientability and diffusion maps. Applied and Computational Harmonic Analysis, 2011, 31, 44-58.	2.2	29
75	Computing Steerable Principal Components of a Large Set of Images and Their Rotations. IEEE Transactions on Image Processing, 2011, 20, 3051-3062.	9.8	13
76	Reference free structure determination through eigenvectors of center of mass operators. Applied and Computational Harmonic Analysis, 2010, 28, 296-312.	2.2	22
77	Detecting consistent common lines in cryo-EM by voting. Journal of Structural Biology, 2010, 169, 312-322.	2.8	47
78	Uniqueness of Low-Rank Matrix Completion by Rigidity Theory. SIAM Journal on Matrix Analysis and Applications, 2010, 31, 1621-1641.	1.4	72
79	Detecting intrinsic slow variables in stochastic dynamical systems by anisotropic diffusion maps. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 16090-16095.	7.1	113
80	Diffusion Interpretation of Nonlocal Neighborhood Filters for Signal Denoising. SIAM Journal on Imaging Sciences, 2009, 2, 118-139.	2.2	76
81	Non-linear independent component analysis with diffusion maps. Applied and Computational Harmonic Analysis, 2008, 25, 226-239.	2.2	140
82	A remark on global positioning from local distances. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 9507-9511.	7.1	80
83	Graph Laplacian Tomography From Unknown Random Projections. IEEE Transactions on Image Processing, 2008, 17, 1891-1899.	9.8	142
84	Ionic diffusion through confined geometries: from Langevin equations to partial differential equations. Journal of Physics Condensed Matter, 2004, 16, S2153-S2165.	1.8	42