

# Peter C Doerschuk

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

68

papers

811

citations

15

h-index

27

g-index

105

ext. papers

987

ext. citations

4.5

avg, IF

3.69

L-index

#	Paper	IF	Citations
68	Computation of Real-Valued Basis Functions which Transform as Irreducible Representations of the Polyhedral Groups. <i>SIAM Journal of Scientific Computing</i> , <b>2021</b> , 43, A3657-A3676	2.6	0
67	Spatiotemporal functional interactivity among large-scale brain networks. <i>NeuroImage</i> , <b>2021</b> , 227, 1176289	7.9	0
66	Reconstruction of Stochastic 3D Signals With Symmetric Statistics From 2D Projection Images Motivated by Cryo-Electron Microscopy. <i>IEEE Transactions on Image Processing</i> , <b>2019</b> , 28, 5479-5494	8.7	1
65	Allosteric effects in bacteriophage HK97 procapsids revealed directly from covariance analysis of cryo EM data. <i>Journal of Structural Biology</i> , <b>2018</b> , 202, 129-141	3.4	5
64	Self-assembly of highly symmetrical, ultrasmall inorganic cages directed by surfactant micelles. <i>Nature</i> , <b>2018</b> , 558, 577-580	50.4	61
63	Experimentally constrained circuit model of cortical arteriole networks for understanding flow redistribution due to occlusion and neural activation. <i>Journal of Cerebral Blood Flow and Metabolism</i> , <b>2018</b> , 38, 38-44	7.3	5
62	Learning Compositional Visual Concepts with Mutual Consistency <b>2018</b> ,		3
61	Initial Validation for the Estimation of Resting-State fMRI Effective Connectivity by a Generalization of the Correlation Approach. <i>Frontiers in Neuroscience</i> , <b>2017</b> , 11, 271	5.1	4
60	Detecting asymmetry in the presence of symmetry with maximum likelihood three-dimensional reconstructions of viruses from electron microscope images. <i>IET Image Processing</i> , <b>2016</b> , 10, 624-629	1.7	3
59	Statistical characterization of ensembles of symmetric virus particles: 3-D stochastic signal reconstruction from electron microscope images. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , <b>2016</b> , 2016, 3977-3980	0.9	3
58	3-D understanding of electron microscopy images of nano bio objects by computing generative mechanical models <b>2016</b> ,		2
57	Effect of the viral protease on the dynamics of bacteriophage HK97 maturation intermediates characterized by variance analysis of cryo EM particle ensembles. <i>Journal of Structural Biology</i> , <b>2016</b> , 193, 188-195	3.4	5
56	Anticipatory Posturing of the Vocal Tract Reveals Dissociation of Speech Movement Plans from Linguistic Units. <i>PLoS ONE</i> , <b>2016</b> , 11, e0146813	3.7	20
55	Virus particle dynamics derived from CryoEM studies. <i>Current Opinion in Virology</i> , <b>2016</b> , 18, 57-63	7.5	9
54	Reconstruction for stochastic 3-D signals with symmetric statistics in noise: Electron microscopy of virus particles <b>2015</b> ,		2
53	A mathematical model relating cortical oxygenated and deoxygenated hemoglobin flows and volumes to neural activity. <i>Journal of Neural Engineering</i> , <b>2015</b> , 12, 046013	5	
52	Dynamic and geometric analyses of Nudaurelia capensis Virus maturation reveal the energy landscape of particle transitions. <i>Journal of Molecular Recognition</i> , <b>2014</b> , 27, 230-7	2.6	12

51	Virus assembly and maturation: auto-regulation through allosteric molecular switches. <i>Journal of Molecular Biology</i> , <b>2013</b> , 425, 1488-96	6.5	22
50	Dynamics in cryo EM reconstructions visualized with maximum-likelihood derived variance maps. <i>Journal of Structural Biology</i> , <b>2013</b> , 181, 195-206	3.4	34
49	Alcohol exposure rate control through physiologically based pharmacokinetic modeling. <i>Alcoholism: Clinical and Experimental Research</i> , <b>2012</b> , 36, 1042-9	3.7	12
48	Three-dimensional reconstruction of the statistics of heterogeneous objects from a collection of one projection image of each object. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , <b>2012</b> , 29, 959-70	1.8	13
47	In vivo two-photon excited fluorescence microscopy reveals cardiac- and respiration-dependent pulsatile blood flow in cortical blood vessels in mice. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , <b>2012</b> , 302, H1367-77	5.2	95
46	In vivo virus structures: simultaneous classification, resolution enhancement, and noise reduction in whole-cell electron tomography. <i>Journal of Structural Biology</i> , <b>2011</b> , 174, 425-33	3.4	6
45	Multiclass maximum-likelihood symmetry determination and motif reconstruction of 3-D helical objects from projection images for electron microscopy. <i>IEEE Transactions on Image Processing</i> , <b>2011</b> , 20, 1962-76	8.7	4
44	Estimating brain microvascular blood flows from partial two-photon microscopy data by computation with a circuit model. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , <b>2011</b> , 2011, 2699-702	0.9	3
43	System identification to characterize human use of ethanol based on generative point-process models of video games with ethanol rewards. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , <b>2011</b> , 2011, 2699-702	0.9	
42	An introduction to maximum-likelihood methods in cryo-EM. <i>Methods in Enzymology</i> , <b>2010</b> , 482, 263-94	1.7	47
41	In vivo assembly of an archaeal virus studied with whole-cell electron cryotomography. <i>Structure</i> , <b>2010</b> , 18, 1579-86	5.2	51
40	Reciprocal space representations of helical objects and their projection images for helices constructed from motifs without spherical symmetry. <i>Ultramicroscopy</i> , <b>2009</b> , 109, 253-63	3.1	2
39	Ab initio maximum likelihood reconstruction from cryo electron microscopy images of an infectious virion of the tailed bacteriophage P22 and maximum likelihood versions of Fourier Shell Correlation appropriate for measuring resolution of spherical or cylindrical objects. <i>Journal of Structural Biology</i> , <b>2009</b> , 167, 185-99	3.4	7
38	A parallel software toolkit for statistical 3-D virus reconstructions from cryo electron microscopy images using computer clusters with multi-core shared-memory nodes. <i>Parallel and Distributed Processing Symposium (IPDPS), Proceedings of the International Conference on</i> , <b>2008</b> ,		4
37	Models and signal processing for an implanted ethanol bio-sensor. <i>IEEE Transactions on Biomedical Engineering</i> , <b>2008</b> , 55, 603-13	5	1
36	Physiologically based pharmacokinetic (PBPK) models for ethanol. <i>IEEE Transactions on Biomedical Engineering</i> , <b>2008</b> , 55, 2691-700	5	39
35	Exact reduced-complexity maximum likelihood reconstruction of multiple 3-D objects from unlabeled unoriented 2-D projections and electron microscopy of viruses. <i>IEEE Transactions on Image Processing</i> , <b>2007</b> , 16, 2865-78	8.7	13
34	Determination of Helical Symmetry Parameters from Cryo Electron Microscopy Images and Applications to Virus Structure* <b>2007</b> ,		1

33	Computing the 3-D structure of viruses from unoriented cryo electron microscope images: a fast algorithm for a statistical approach. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society</i> , <b>2006</b> , 2006, 2538-41		
32	Statistical signal processing for an implantable ethanol biosensor. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society</i> , <b>2006</b> , 2006, 3704-7		
31	Ordinary differential equation models for ethanol pharmacokinetic based on anatomy and physiology. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society</i> , <b>2006</b> , 2006, 5033-6		4
30	3D reconstructions from spherically averaged Fourier transform magnitude and solution x-ray scattering experiments <b>2006</b> , 6065, 116		
29	A fast algorithm for 3D reconstruction from unoriented projections and cryo electron microscopy of viruses <b>2006</b> ,		1
28	Determining 3-D Structure of Spherical Viruses by Global Optimization <b>2006</b> , 301-329		
27	Maximum likelihood 3D reconstruction of multiple viruses from mixtures of cryo electron microscope images <b>2005</b> ,		1
26	The mechanism of high-pressure-induced ordering in a macromolecular crystal. <i>Acta Crystallographica Section D: Biological Crystallography</i> , <b>2005</b> , 61, 737-43		11
25	Evaluating Estimates of Markov Models of Sequence Evolution through Simulation. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society</i> , <b>2005</b> , 2006, 808-12		
24	A statistical approach to computer processing of cryo-electron microscope images: virion classification and 3-D reconstruction. <i>Journal of Structural Biology</i> , <b>2003</b> , 144, 24-50	3.4	32
23	Application of Multiresolution Pattern Classification to Steel Bridge Coating Assessment. <i>Journal of Computing in Civil Engineering</i> , <b>2002</b> , 16, 244-251	5	15
22	An ab initio algorithm for low-resolution 3-D reconstructions from cryoelectron microscopy images. <i>Journal of Structural Biology</i> , <b>2001</b> , 133, 132-42	3.4	18
21	3D image reconstruction algorithms for cryo-electron-microscopy images of virus particles <b>2000</b> , 4123, 231		1
20	Ab initio reconstruction and experimental design for cryo electron microscopy. <i>IEEE Transactions on Information Theory</i> , <b>2000</b> , 46, 1714-1729	2.8	35
19	Explicit Computation of Orthonormal Symmetrized Harmonics with Application to the Identity Representation of the Icosahedral Group. <i>SIAM Journal on Mathematical Analysis</i> , <b>2000</b> , 32, 538-554	1.7	20
18	Symmetry-constrained 3-D interpolation of viral X-ray crystallography data. <i>IEEE Transactions on Signal Processing</i> , <b>2000</b> , 48, 214-222	4.8	4
17	3D Virus Structures from Model-Based Inverse Problems. <i>Kluwer International Series in Engineering and Computer Science</i> , <b>2000</b> , 287-300		
16	Statistical methods for 3D reconstruction of viruses using cryo electron microscopy data <b>1998</b> , 3459, 12		

15	Iterative reconstruction of three-dimensional objects from averaged Fourier-transform magnitude: solution and fiber x-ray scattering problems. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , <b>1996</b> , 13, 1483	1.8	6
14	Texture-based segmentation using markov random field models and approximate Bayesian estimators based on trees. <i>Journal of Mathematical Imaging and Vision</i> , <b>1995</b> , 5, 277-286	1.6	1
13	Symbolic symmetry verification for harmonic functions invariant under polyhedral symmetries. <i>Computers in Physics</i> , <b>1995</b> , 9, 433		10
12	Determination of three-dimensional low-resolution viral structure from solution x-ray scattering data. <i>Biophysical Journal</i> , <b>1995</b> , 69, 619-39	2.9	25
11	Reconstruction of color images from a single-chip CCD sensor based on Markov random field models <b>1995</b> ,		3
10	Texture-based segmentation using Markov random field models <b>1994</b> ,		1
9	Theory and application of annealing algorithms for continuous optimization <b>1992</b> ,		1
8	Continuous-state simulated annealing algorithms: theory and application <b>1992</b> , 1766, 235		
7	Bayesian signal reconstruction, Markov random fields, and x-ray crystallography. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , <b>1991</b> , 8, 1207	1.8	4
6	Adaptive Bayesian signal reconstruction with a priori model implementation and synthetic examples for x-ray crystallography. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , <b>1991</b> , 8, 1222	1.8	4
5	Modelling electrocardiograms using interacting Markov chains. <i>International Journal of Systems Science</i> , <b>1990</b> , 21, 257-283	2.3	3
4	Event-based estimation of interacting Markov chains with applications to electrocardiogram analysis. <i>International Journal of Systems Science</i> , <b>1990</b> , 21, 285-304	2.3	2
3	Modeling of cardiac rhythms. A signal-processing perspective. <i>Journal of Electrocardiology</i> , <b>1990</b> , 23 Suppl, 102-10	1.4	
2	Estimation-based approaches to rhythm analysis in electrocardiograms <b>1985</b> , 295-313		
1	Upper extremity limb function discrimination using EMG signal analysis. <i>IEEE Transactions on Biomedical Engineering</i> , <b>1983</b> , 30, 18-29	5	119