Hanchuan Peng

List of Publications by Year
in descending order

102 papers	20,309 citations	66234 42 h-index	53109 85 g-index
121 all docs	121 docs citations	121 times ranked	21112 citing authors

#	Article	IF	Citations
1	Feature selection based on mutual information criteria of max-dependency, max-relevance, and min-redundancy. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2005, 27, 1226-1238.	9.7	7,719
2	A mesoscale connectome of the mouse brain. Nature, 2014, 508, 207-214.	13.7	2,143
3	MINIMUM REDUNDANCY FEATURE SELECTION FROM MICROARRAY GENE EXPRESSION DATA. Journal of Bioinformatics and Computational Biology, 2005, 03, 185-205.	0.3	1,827
4	A GAL4-Driver Line Resource for Drosophila Neurobiology. Cell Reports, 2012, 2, 991-1001.	2.9	1,287
5	V3D enables real-time 3D visualization and quantitative analysis of large-scale biological image data sets. Nature Biotechnology, 2010, 28, 348-353.	9.4	661
6	Biological imaging software tools. Nature Methods, 2012, 9, 697-710.	9.0	462
7	Classification of electrophysiological and morphological neuron types in the mouse visual cortex. Nature Neuroscience, 2019, 22, 1182-1195.	7.1	333
8	A multimodal cell census and atlas of the mammalian primary motor cortex. Nature, 2021, 598, 86-102.	13.7	316
9	Bioimage informatics: a new area of engineering biology. Bioinformatics, 2008, 24, 1827-1836.	1.8	298
10	Integrated Morphoelectric and Transcriptomic Classification of Cortical GABAergic Cells. Cell, 2020, 183, 935-953.e19.	13.5	290
11	Extensible visualization and analysis for multidimensional images using Vaa3D. Nature Protocols, 2014, 9, 193-208.	5.5	267
12	mGRASP enables mapping mammalian synaptic connectivity with light microscopy. Nature Methods, 2012, 9, 96-102.	9.0	237
13	BigNeuron: Large-Scale 3D Neuron Reconstruction from Optical Microscopy Images. Neuron, 2015, 87, 252-256.	3.8	202
14	Morphological diversity of single neurons in molecularly defined cell types. Nature, 2021, 598, 174-181.	13.7	180
15	APP2: automatic tracing of 3D neuron morphology based on hierarchical pruning of a gray-weighted image distance-tree. Bioinformatics, 2013, 29, 1448-1454.	1.8	177
16	A 3D digital atlas of C. elegans and its application to single-cell analyses. Nature Methods, 2009, 6, 667-672.	9.0	170
17	Imagining the future of bioimage analysis. Nature Biotechnology, 2016, 34, 1250-1255.	9.4	162
18	Clonal Development and Organization of the Adult Drosophila Central Brain. Current Biology, 2013, 23, 633-643.	1.8	161

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19	Human neocortical expansion involves glutamatergic neuron diversification. Nature, 2021, 598, 151-158.	13.7	160
20	BrainAligner: 3D registration atlases of Drosophila brains. Nature Methods, 2011, 8, 493-498.	9.0	153
21	Automatic 3D neuron tracing using all-path pruning. Bioinformatics, 2011, 27, i239-i247.	1.8	130
22	Analysis of Cell Fate from Single-Cell Gene Expression Profiles in C. elegans. Cell, 2009, 139, 623-633.	13.5	122
23	Cellular anatomy of the mouse primary motor cortex. Nature, 2021, 598, 159-166.	13.7	117
24	Automated Reconstruction of Neuronal Morphology Based on Local Geometrical and Global Structural Models. Neuroinformatics, 2011, 9, 247-261.	1.5	110
25	Virtual finger boosts three-dimensional imaging and microsurgery as well as terabyte volume image visualization and analysis. Nature Communications, 2014, 5, 4342.	5.8	109
26	Deep Learning Segmentation of Optical Microscopy Images Improves 3-D Neuron Reconstruction. IEEE Transactions on Medical Imaging, 2017, 36, 1533-1541.	5.4	104
27	Automatic reconstruction of 3D neuron structures using a graph-augmented deformable model. Bioinformatics, 2010, 26, i38-i46.	1.8	100
28	Whole-Neuron Synaptic Mapping Reveals Spatially Precise Excitatory/Inhibitory Balance Limiting Dendritic and Somatic Spiking. Neuron, 2020, 106, 566-578.e8.	3.8	94
29	Straightening <i>Caenorhabditis elegans</i> images. Bioinformatics, 2008, 24, 234-242.	1.8	82
30	From DIADEM to BigNeuron. Neuroinformatics, 2015, 13, 259-260.	1.5	82
31	TeraFly: real-time three-dimensional visualization and annotation of terabytes of multidimensional volumetric images. Nature Methods, 2016, 13, 192-194.	9.0	82
32	Automatic tracing of ultra-volumes of neuronal images. Nature Methods, 2017, 14, 332-333.	9.0	75
33	Eight pairs of descending visual neurons in the dragonfly give wing motor centers accurate population vector of prey direction. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 696-701.	3.3	73
34	Rivulet: 3D Neuron Morphology Tracing with Iterative Back-Tracking. Neuroinformatics, 2016, 14, 387-401.	1.5	71
35	SmartTracing: self-learning-based Neuron reconstruction. Brain Informatics, 2015, 2, 135-144.	1.8	67
36	TeraVR empowers precise reconstruction of complete 3-D neuronal morphology in the whole brain. Nature Communications, 2019, 10, 3474.	5.8	64

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37	Visualization and Analysis of 3D Microscopic Images. PLoS Computational Biology, 2012, 8, e1002519.	1.5	63
38	Automatic image analysis for gene expression patterns of fly embryos. BMC Cell Biology, 2007, 8, S7.	3.0	58
39	Data-driven decomposition for multi-class classification. Pattern Recognition, 2008, 41, 67-76.	5.1	58
40	BlastNeuron for Automated Comparison, Retrieval and Clustering of 3D Neuron Morphologies. Neuroinformatics, 2015, 13, 487-499.	1.5	55
41	TReMAP: Automatic 3D Neuron Reconstruction Based on Tracing, Reverse Mapping and Assembling of 2D Projections. Neuroinformatics, 2016, 14, 41-50.	1.5	51
42	Proof-editing is the Bottleneck Of 3D Neuron Reconstruction: The Problem and Solutions. Neuroinformatics, 2011, 9, 103-105.	1.5	48
43	Document image recognition based on template matching of component block projections. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2003, 25, 1188-1192.	9.7	47
44	DeepNeuron: an open deep learning toolbox for neuron tracing. Brain Informatics, 2018, 5, 3.	1.8	47
45	BIOCAT: a pattern recognition platform for customizable biological image classification and annotation. BMC Bioinformatics, 2013, 14, 291.	1.2	46
46	To the Cloud! A Grassroots Proposal to Accelerate Brain Science Discovery. Neuron, 2016, 92, 622-627.	3.8	46
47	Automated 3-D Neuron Tracing With Precise Branch Erasing and Confidence Controlled Back Tracking. IEEE Transactions on Medical Imaging, 2018, 37, 2441-2452.	5.4	45
48	Deep models for brain EM image segmentation: novel insights and improved performance. Bioinformatics, 2016, 32, 2352-2358.	1.8	43
49	FMST: an Automatic Neuron Tracing Method Based on Fast Marching and Minimum Spanning Tree. Neuroinformatics, 2019, 17, 185-196.	1.5	42
50	Adaptive Image Enhancement for Tracing 3D Morphologies of Neurons and Brain Vasculatures. Neuroinformatics, 2015, 13, 153-166.	1.5	39
51	Cross-modal coherent registration of whole mouse brains. Nature Methods, 2022, 19, 111-118.	9.0	36
52	Atlas-builder software and the eNeuro atlas: resources for developmental biology and neuroscience. Development (Cambridge), 2014, 141, 2524-2532.	1.2	35
53	Ensemble Neuron Tracer for 3D Neuron Reconstruction. Neuroinformatics, 2017, 15, 185-198.	1.5	34
54	Anisotropic path searching for automatic neuron reconstruction. Medical Image Analysis, 2011, 15, 680-689.	7.0	32

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55	Energy function for learning invariance in multilayer perceptron. Electronics Letters, 1998, 34, 292.	0.5	32
56	Design and implementation of multi-signal and time-varying neural reconstructions. Scientific Data, 2018, 5, 170207.	2.4	30
57	DeepBranch: Deep Neural Networks for Branch Point Detection in Biomedical Images. IEEE Transactions on Medical Imaging, 2020, 39, 1195-1205.	5.4	30
58	VANO: a volume-object image annotation system. Bioinformatics, 2009, 25, 695-697.	1.8	27
59	Bioimage informatics: a new category in <i>Bioinformatics</i>. Bioinformatics, 2012, 28, 1057-1057.	1.8	27
60	Wiring economy can account for cell body placement across species and brain areas. Current Biology, 2014, 24, R109-R110.	1.8	26
61	3D Image-Guided Automatic Pipette Positioning for Single Cell Experiments in vivo. Scientific Reports, 2015, 5, 18426.	1.6	26
62	Automated high speed stitching of large 3D microscopic images. , 2011, , .		24
63	Automated image computing reshapes computational neuroscience. BMC Bioinformatics, 2013, 14, 293.	1.2	24
64	Segmenting Neuronal Structure in 3D Optical Microscope Images via Knowledge Distillation with Teacher-Student Network. , 2019, , .		24
65	3D neuron tip detection in volumetric microscopy images using an adaptive ray-shooting model. Pattern Recognition, 2018, 75, 263-271.	5.1	23
66	Document image template matching based on component block list. Pattern Recognition Letters, 2001, 22, 1033-1042.	2.6	19
67	AUTOMATIC SEGMENTATION OF NUCLEI IN 3D MICROSCOPY IMAGES OF C.ELEGANS. , 2007, , .		18
68	3-D Registration of Biological Images and Models: Registration of microscopic images and its uses in segmentation and annotation. IEEE Signal Processing Magazine, 2015, 32, 70-77.	4.6	18
69	A Multiscale Ray-Shooting Model for Termination Detection of Tree-Like Structures in Biomedical Images. IEEE Transactions on Medical Imaging, 2019, 38, 1923-1934.	5.4	18
70	A Bayesian Morphometry Algorithm. IEEE Transactions on Medical Imaging, 2004, 23, 723-737.	5.4	16
71	Neuron crawler: An automatic tracing algorithm for very large neuron images. , 2015, , .		16
72	Automated 3D Soma Segmentation with Morphological Surface Evolution for Neuron Reconstruction. Neuroinformatics, 2018, 16, 153-166.	1.5	15

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73	Multi-Scale Light-Sheet Fluorescence Microscopy for Fast Whole Brain Imaging. Frontiers in Neuroanatomy, 2021, 15, 732464.	0.9	15
74	Micron-scale Resolution Optical Tomography of Entire Mouse Brains with Confocal Light Sheet Microscopy. Journal of Visualized Experiments, 2013, , .	0.2	14
75	Binocular Encoding in the Damselfly Pre-motor Target Tracking System. Current Biology, 2020, 30, 645-656.e4.	1.8	14
76	Petabyte-Scale Multi-Morphometry of Single Neurons for Whole Brains. Neuroinformatics, 2022, 20, 525-536.	1.5	14
77	An open-source VAA3D plugin for real-time 3D visualization of terabyte-sized volumetric images. , 2015, , .		13
78	Global analysis of gene expression and projection target correlations in the mouse brain. Brain Informatics, 2015, 2, 107-117.	1.8	13
79	Triple-Crossing 2.5D Convolutional Neural Network for Detecting Neuronal Arbours in 3D Microscopic Images. Lecture Notes in Computer Science, 2017, , 185-193.	1.0	13
80	A principal skeleton algorithm for standardizing confocal images of fruit fly nervous systems. Bioinformatics, 2010, 26, 1091-1097.	1.8	12
81	3D Neuron Tip Detection in Volumetric Microscopy Images. , 2011, , .		9
82	Reconstructing the brain: from image stacks to neuron synthesis. Brain Informatics, 2016, 3, 205-209.	1.8	9
83	Fast assembling of neuron fragments in serial 3D sections. Brain Informatics, 2017, 4, 183-186.	1.8	9
84	Multiscale Kernels for Enhanced U-Shaped Network to Improve 3D Neuron Tracing. , 2019, , .		9
85	Bioimage Informatics for Big Data. Advances in Anatomy, Embryology and Cell Biology, 2016, 219, 263-272.	1.0	8
86	SmartScope2: Simultaneous Imaging and Reconstruction of Neuronal Morphology. Scientific Reports, 2017, 7, 9325.	1.6	8
87	Memory and Time Efficient 3D Neuron Morphology Tracing in Large-Scale Images. , 2018, , .		8
88	Learning Hierarchical and Shared Features for Improving 3D Neuron Reconstruction. , 2019, , .		8
89	Discover mouse gene coexpression landscapes using dictionary learning and sparse coding. Brain Structure and Function, 2017, 222, 4253-4270.	1.2	7
90	Reconstruction of 3D neuron morphology using Rivulet back-tracking. , 2016, , .		6

#	ARTICLE	IF	CITATIONS
91	Image enhancement to leverage the 3D morphological reconstruction of single-cell neurons. Bioinformatics, 2022, 38, 503-512.	1.8	6
92	Interactive exemplar-based segmentation toolkit for biomedical image analysis. , 2015, , .		5
93	LittleQuickWarp: An ultrafast image warping tool. Methods, 2015, 73, 38-42.	1.9	5
94	3D Conditional Adversarial Learning for Synthesizing Microscopic Neuron Image Using Skeleton-to-Neuron Translation. , 2020, , .		5
95	Counting cells in 3D confocal images based on discriminative models. , 2011, , .		4
96	Automatic 3D Single Neuron Reconstruction with Exhaustive Tracing. , 2017, , .		4
97	N3DFix: an Algorithm for Automatic Removal of Swelling Artifacts in Neuronal Reconstructions. Neuroinformatics, 2017, 15, 5-12.	1.5	3
98	Constructing 5D developing gene expression patterns without live animal imaging. Biomedical Engineering Letters, 2014, 4, 338-346.	2.1	1
99	Smart imaging to empower brain-wide neuroscience at single-cell levels. Brain Informatics, 2022, 9, 10.	1.8	1
100	STRAIGHTENING WORM IMAGES. , 2007, , .		0
101	A HPC infrastructure for processing and visualizing neuro-anatomical images obtained by Confocal Light Sheet Microscopy. , 2014, , .		0
102	AUTOMATIC ANNOTATION OF BIOLOGICAL IMAGES. , 2009, , 625-644.		0