Hanchuan Peng

List of Publications by Year
in descending order

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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	Image enhancement to leverage the 3D morphological reconstruction of single-cell neurons. Bioinformatics, 2022, 38, 503-512.	1.8	6
2	Petabyte-Scale Multi-Morphometry of Single Neurons for Whole Brains. Neuroinformatics, 2022, 20, 525-536.	1.5	14
3	Cross-modal coherent registration of whole mouse brains. Nature Methods, 2022, 19, 111-118.	9.0	36
4	Smart imaging to empower brain-wide neuroscience at single-cell levels. Brain Informatics, 2022, 9, 10.	1.8	1
5	Multi-Scale Light-Sheet Fluorescence Microscopy for Fast Whole Brain Imaging. Frontiers in Neuroanatomy, 2021, 15, 732464.	0.9	15
6	Morphological diversity of single neurons in molecularly defined cell types. Nature, 2021, 598, 174-181.	13.7	180
7	Human neocortical expansion involves glutamatergic neuron diversification. Nature, 2021, 598, 151-158.	13.7	160
8	A multimodal cell census and atlas of the mammalian primary motor cortex. Nature, 2021, 598, 86-102.	13.7	316
9	Cellular anatomy of the mouse primary motor cortex. Nature, 2021, 598, 159-166.	13.7	117
10	DeepBranch: Deep Neural Networks for Branch Point Detection in Biomedical Images. IEEE Transactions on Medical Imaging, 2020, 39, 1195-1205.	5.4	30
11	Integrated Morphoelectric and Transcriptomic Classification of Cortical GABAergic Cells. Cell, 2020, 183, 935-953.e19.	13.5	290
12	3D Conditional Adversarial Learning for Synthesizing Microscopic Neuron Image Using Skeleton-to-Neuron Translation. , 2020, , .		5
13	Whole-Neuron Synaptic Mapping Reveals Spatially Precise Excitatory/Inhibitory Balance Limiting Dendritic and Somatic Spiking. Neuron, 2020, 106, 566-578.e8.	3.8	94
14	Binocular Encoding in the Damselfly Pre-motor Target Tracking System. Current Biology, 2020, 30, 645-656.e4.	1.8	14
15	Segmenting Neuronal Structure in 3D Optical Microscope Images via Knowledge Distillation with Teacher-Student Network. , 2019, , .		24
16	TeraVR empowers precise reconstruction of complete 3-D neuronal morphology in the whole brain. Nature Communications, 2019, 10, 3474.	5.8	64
17	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
18	Classification of electrophysiological and morphological neuron types in the mouse visual cortex. Nature Neuroscience, 2019, 22, 1182-1195.	7.1	333

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19	Multiscale Kernels for Enhanced U-Shaped Network to Improve 3D Neuron Tracing. , 2019, , .		9
20	Learning Hierarchical and Shared Features for Improving 3D Neuron Reconstruction. , 2019, , .		8
21	FMST: an Automatic Neuron Tracing Method Based on Fast Marching and Minimum Spanning Tree. Neuroinformatics, 2019, 17, 185-196.	1.5	42
22	Design and implementation of multi-signal and time-varying neural reconstructions. Scientific Data, 2018, 5, 170207.	2.4	30
23	Automated 3D Soma Segmentation with Morphological Surface Evolution for Neuron Reconstruction. Neuroinformatics, 2018, 16, 153-166.	1.5	15
24	3D neuron tip detection in volumetric microscopy images using an adaptive ray-shooting model. Pattern Recognition, 2018, 75, 263-271.	5.1	23
25	Memory and Time Efficient 3D Neuron Morphology Tracing in Large-Scale Images. , 2018, , .		8
26	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
27	DeepNeuron: an open deep learning toolbox for neuron tracing. Brain Informatics, 2018, 5, 3.	1.8	47
28	Deep Learning Segmentation of Optical Microscopy Images Improves 3-D Neuron Reconstruction. IEEE Transactions on Medical Imaging, 2017, 36, 1533-1541.	5.4	104
29	Ensemble Neuron Tracer for 3D Neuron Reconstruction. Neuroinformatics, 2017, 15, 185-198.	1.5	34
30	Automatic tracing of ultra-volumes of neuronal images. Nature Methods, 2017, 14, 332-333.	9.0	75
31	SmartScope2: Simultaneous Imaging and Reconstruction of Neuronal Morphology. Scientific Reports, 2017, 7, 9325.	1.6	8
32	Discover mouse gene coexpression landscapes using dictionary learning and sparse coding. Brain Structure and Function, 2017, 222, 4253-4270.	1.2	7
33	Fast assembling of neuron fragments in serial 3D sections. Brain Informatics, 2017, 4, 183-186.	1.8	9
34	N3DFix: an Algorithm for Automatic Removal of Swelling Artifacts in Neuronal Reconstructions. Neuroinformatics, 2017, 15, 5-12.	1.5	3
35	Automatic 3D Single Neuron Reconstruction with Exhaustive Tracing. , 2017, , .		4
36	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

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37	Imagining the future of bioimage analysis. Nature Biotechnology, 2016, 34, 1250-1255.	9.4	162
38	Rivulet: 3D Neuron Morphology Tracing with Iterative Back-Tracking. Neuroinformatics, 2016, 14, 387-401.	1.5	71
39	Reconstruction of 3D neuron morphology using Rivulet back-tracking. , 2016, , .		6
40	To the Cloud! A Grassroots Proposal to Accelerate Brain Science Discovery. Neuron, 2016, 92, 622-627.	3.8	46
41	Reconstructing the brain: from image stacks to neuron synthesis. Brain Informatics, 2016, 3, 205-209.	1.8	9
42	Bioimage Informatics for Big Data. Advances in Anatomy, Embryology and Cell Biology, 2016, 219, 263-272.	1.0	8
43	Deep models for brain EM image segmentation: novel insights and improved performance. Bioinformatics, 2016, 32, 2352-2358.	1.8	43
44	TeraFly: real-time three-dimensional visualization and annotation of terabytes of multidimensional volumetric images. Nature Methods, 2016, 13, 192-194.	9.0	82
45	TReMAP: Automatic 3D Neuron Reconstruction Based on Tracing, Reverse Mapping and Assembling of 2D Projections. Neuroinformatics, 2016, 14, 41-50.	1.5	51
46	3D Image-Guided Automatic Pipette Positioning for Single Cell Experiments in vivo. Scientific Reports, 2015, 5, 18426.	1.6	26
47	Neuron crawler: An automatic tracing algorithm for very large neuron images. , 2015, , .		16
48	BlastNeuron for Automated Comparison, Retrieval and Clustering of 3D Neuron Morphologies. Neuroinformatics, 2015, 13, 487-499.	1.5	55
49	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
50	Interactive exemplar-based segmentation toolkit for biomedical image analysis. , 2015, , .		5
51	An open-source VAA3D plugin for real-time 3D visualization of terabyte-sized volumetric images. , 2015, , .		13
52	Adaptive Image Enhancement for Tracing 3D Morphologies of Neurons and Brain Vasculatures. Neuroinformatics, 2015, 13, 153-166.	1.5	39
53	BigNeuron: Large-Scale 3D Neuron Reconstruction from Optical Microscopy Images. Neuron, 2015, 87, 252-256.	3.8	202
54	Global analysis of gene expression and projection target correlations in the mouse brain. Brain Informatics, 2015, 2, 107-117.	1.8	13

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55	SmartTracing: self-learning-based Neuron reconstruction. Brain Informatics, 2015, 2, 135-144.	1.8	67
56	From DIADEM to BigNeuron. Neuroinformatics, 2015, 13, 259-260.	1.5	82
57	LittleQuickWarp: An ultrafast image warping tool. Methods, 2015, 73, 38-42.	1.9	5
58	Constructing 5D developing gene expression patterns without live animal imaging. Biomedical Engineering Letters, 2014, 4, 338-346.	2.1	1
59	A mesoscale connectome of the mouse brain. Nature, 2014, 508, 207-214.	13.7	2,143
60	Wiring economy can account for cell body placement across species and brain areas. Current Biology, 2014, 24, R109-R110.	1.8	26
61	Extensible visualization and analysis for multidimensional images using Vaa3D. Nature Protocols, 2014, 9, 193-208.	5.5	267
62	A HPC infrastructure for processing and visualizing neuro-anatomical images obtained by Confocal Light Sheet Microscopy. , 2014, , .		0
63	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
64	Atlas-builder software and the eNeuro atlas: resources for developmental biology and neuroscience. Development (Cambridge), 2014, 141, 2524-2532.	1.2	35
65	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
66	BIOCAT: a pattern recognition platform for customizable biological image classification and annotation. BMC Bioinformatics, 2013, 14, 291.	1.2	46
67	Automated image computing reshapes computational neuroscience. BMC Bioinformatics, 2013, 14, 293.	1.2	24
68	Clonal Development and Organization of the Adult Drosophila Central Brain. Current Biology, 2013, 23, 633-643.	1.8	161
69	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
70	Micron-scale Resolution Optical Tomography of Entire Mouse Brains with Confocal Light Sheet Microscopy. Journal of Visualized Experiments, 2013, , .	0.2	14
71	Visualization and Analysis of 3D Microscopic Images. PLoS Computational Biology, 2012, 8, e1002519.	1.5	63
72	Bioimage informatics: a new category in Bioinformatics. Bioinformatics, 2012, 28, 1057-1057.	1.8	27

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73	A GAL4-Driver Line Resource for Drosophila Neurobiology. Cell Reports, 2012, 2, 991-1001.	2.9	1,287
74	mGRASP enables mapping mammalian synaptic connectivity with light microscopy. Nature Methods, 2012, 9, 96-102.	9.0	237
75	Biological imaging software tools. Nature Methods, 2012, 9, 697-710.	9.0	462
76	3D Neuron Tip Detection in Volumetric Microscopy Images. , 2011, , .		9
77	Automated high speed stitching of large 3D microscopic images. , 2011, , .		24
78	Counting cells in 3D confocal images based on discriminative models. , 2011, , .		4
79	Automatic 3D neuron tracing using all-path pruning. Bioinformatics, 2011, 27, i239-i247.	1.8	130
80	BrainAligner: 3D registration atlases of Drosophila brains. Nature Methods, 2011, 8, 493-498.	9.0	153
81	Anisotropic path searching for automatic neuron reconstruction. Medical Image Analysis, 2011, 15, 680-689.	7.0	32
82	Proof-editing is the Bottleneck Of 3D Neuron Reconstruction: The Problem and Solutions. Neuroinformatics, 2011, 9, 103-105.	1.5	48
83	Automated Reconstruction of Neuronal Morphology Based on Local Geometrical and Global Structural Models. Neuroinformatics, 2011, 9, 247-261.	1.5	110
84	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
85	Automatic reconstruction of 3D neuron structures using a graph-augmented deformable model. Bioinformatics, 2010, 26, i38-i46.	1.8	100
86	A principal skeleton algorithm for standardizing confocal images of fruit fly nervous systems. Bioinformatics, 2010, 26, 1091-1097.	1.8	12
87	VANO: a volume-object image annotation system. Bioinformatics, 2009, 25, 695-697.	1.8	27
88	A 3D digital atlas of C. elegans and its application to single-cell analyses. Nature Methods, 2009, 6, 667-672.	9.0	170
89	Analysis of Cell Fate from Single-Cell Gene Expression Profiles in C. elegans. Cell, 2009, 139, 623-633.	13.5	122
90	AUTOMATIC ANNOTATION OF BIOLOGICAL IMAGES. , 2009, , 625-644.		0

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91	Data-driven decomposition for multi-class classification. Pattern Recognition, 2008, 41, 67-76.	5.1	58
92	Bioimage informatics: a new area of engineering biology. Bioinformatics, 2008, 24, 1827-1836.	1.8	298
93	Straightening Caenorhabditis elegans images. Bioinformatics, 2008, 24, 234-242.	1.8	82
94	STRAIGHTENING WORM IMAGES. , 2007, , .		0
95	AUTOMATIC SEGMENTATION OF NUCLEI IN 3D MICROSCOPY IMAGES OF C.ELEGANS. , 2007, , .		18
96	Automatic image analysis for gene expression patterns of fly embryos. BMC Cell Biology, 2007, 8, S7.	3.0	58
97	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
98	MINIMUM REDUNDANCY FEATURE SELECTION FROM MICROARRAY GENE EXPRESSION DATA. Journal of Bioinformatics and Computational Biology, 2005, 03, 185-205.	0.3	1,827
99	A Bayesian Morphometry Algorithm. IEEE Transactions on Medical Imaging, 2004, 23, 723-737.	5.4	16
100	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
101	Document image template matching based on component block list. Pattern Recognition Letters, 2001, 22, 1033-1042.	2.6	19
102	Energy function for learning invariance in multilayer perceptron. Electronics Letters, 1998, 34, 292.	0.5	32