Ashish Raj

List of Publications by Year
in descending order

97 papers	3,150 citations	201674 27 h-index	189892 50 g-index
108 all docs	108 docs citations	108 times ranked	4244 citing authors

#	Article	IF	Citations
1	A Network Diffusion Model of Disease Progression in Dementia. Neuron, 2012, 73, 1204-1215.	8.1	582
2	Network diffusion accurately models the relationship between structural and functional brain connectivity networks. NeuroImage, 2014, 90, 335-347.	4.2	234
3	Network Diffusion Model of Progression Predicts Longitudinal Patterns of Atrophy and Metabolism in Alzheimerâ€™s Disease. Cell Reports, 2015, 10, 359-369.	6.4	177
4	Functional brain connectivity is predictable from anatomic network's Laplacian eigen-structure. NeuroImage, 2018, 172, 728-739.	4.2	114
5	The Network Modification (NeMo) Tool: Elucidating the Effect of White Matter Integrity Changes on Cortical and Subcortical Structural Connectivity. Brain Connectivity, 2013, 3, 451-463.	1.7	95
6	Structural connectome disruption at baseline predicts 6-months post-stroke outcome. Human Brain Mapping, 2016, 37, 2587-2601.	3.6	89
7	Simultaneous Phase Unwrapping and Removal of Chemical Shift (SPURS) Using Graph Cuts: Application in Quantitative Susceptibility Mapping. IEEE Transactions on Medical Imaging, 2015, 34, 531-540.	8.9	81
8	The Wiring Economy Principle: Connectivity Determines Anatomy in the Human Brain. PLoS ONE, 2011, 6, e14832.	2.5	67
9	T₂prep threeâ€dimensional spiral imaging with efficient whole brain coverage for myelin water quantification at 1.5 tesla. Magnetic Resonance in Medicine, 2012, 67, 614-621.	3.0	67
10	Widespread white matter degeneration preceding the onset of dementia. Alzheimer's and Dementia, 2015, 11, 485.	0.8	67
11	Frequency-dependent critical current and transport ac loss of superconductor strip and Roebel cable. Superconductor Science and Technology, 2011, 24, 065024.	3.5	62
12	Bayesian parallel imaging with edge-preserving priors. Magnetic Resonance in Medicine, 2007, 57, 8-21.	3.0	59
13	Measuring longitudinal myelin water fraction in new multiple sclerosis lesions. NeuroImage: Clinical, 2015, 9, 369-375.	2.7	58
14	Neural connectivity predicts spreading of alpha-synuclein pathology in fibril-injected mouse models: Involvement of retrograde and anterograde axonal propagation. Neurobiology of Disease, 2020, 134, 104623.	4.4	57
15	Bayesian algorithm using spatial priors for multiexponential T₂ relaxometry from multiecho spin echo MRI. Magnetic Resonance in Medicine, 2012, 68, 1536-1543.	3.0	56
16	Brain network eigenmodes provide a robust and compact representation of the structural connectome in health and disease. PLoS Computational Biology, 2017, 13, e1005550.	3.2	56
17	Feasibility and reproducibility of whole brain myelin water mapping in 4 minutes using fast acquisition with spiral trajectory and adiabatic T2prep (FAST-T2) at 3T. Magnetic Resonance in Medicine, 2016, 76, 456-465.	3.0	53
18	Spatial patterns of genomeâ€wide expression profiles reflect anatomic and fiber connectivity architecture of healthy human brain. Human Brain Mapping, 2014, 35, 4204-4218.	3.6	47

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19	Exploring the brain's structural connectome: A quantitative stroke lesionâ€dysfunction mapping study. Human Brain Mapping, 2015, 36, 2147-2160.	3.6	47
20	Regional expression of genes mediating trans-synaptic alpha-synuclein transfer predicts regional atrophy in Parkinson disease. NeuroImage: Clinical, 2018, 18, 456-466.	2.7	47
21	Spectral graph theory of brain oscillations. Human Brain Mapping, 2020, 41, 2980-2998.	3.6	46
22	Altered excitatory and inhibitory neuronal subpopulation parameters are distinctly associated with tau and amyloid in Alzheimerâ€™s disease. ELife, 0, 11, .	6.0	45
23	Predicting Future Brain Tissue Loss From White Matter Connectivity Disruption in Ischemic Stroke. Stroke, 2014, 45, 717-722.	2.0	44
24	Multi-Compartment T2 Relaxometry Using a Spatially Constrained Multi-Gaussian Model. PLoS ONE, 2014, 9, e98391.	2.5	44
25	Longitudinal increases in structural connectome segregation and functional connectome integration are associated with better recovery after mild TBI. Human Brain Mapping, 2019, 40, 4441-4456.	3.6	39
26	A method for inferring regional origins of neurodegeneration. Brain, 2018, 141, 863-876.	7.6	37
27	Models of Network Spread and Network Degeneration in Brain Disorders. Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, 2018, 3, 788-797.	1.5	37
28	A Pilot Study of Quantitative MRI Measurements of Ventricular Volume and Cortical Atrophy for the Differential Diagnosis of Normal Pressure Hydrocephalus. Neurology Research International, 2012, 2012, 1-6.	1.3	36
29	Predictive Model of Spread of Progressive Supranuclear Palsy Using Directional Network Diffusion. Frontiers in Neurology, 2017, 8, 692.	2.4	36
30	The generation and validation of white matter connectivity importance maps. NeuroImage, 2011, 58, 109-121.	4.2	35
31	Profilometry: A new statistical framework for the characterization of white matter pathways, with application to multiple sclerosis. Human Brain Mapping, 2016, 37, 989-1004.	3.6	34
32	Regional transcriptional architecture of Parkinsonâ€™s disease pathogenesis and network spread. Brain, 2019, 142, 3072-3085.	7.6	32
33	Linking white matter integrity loss to associated cortical regions using structural connectivity information in Alzheimer's disease and fronto-temporal dementia: The Loss in Connectivity (LoCo) score. NeuroImage, 2012, 61, 1311-1323.	4.2	26
34	Connectivity, not region-intrinsic properties, predicts regional vulnerability to progressive tau pathology in mouse models of disease. Acta Neuropathologica Communications, 2017, 5, 61.	5.2	26
35	Loss in connectivity among regions of the brain reward system in alcohol dependence. Human Brain Mapping, 2013, 34, 3129-3142.	3.6	25
36	Relating Cortical Atrophy in Temporal Lobe Epilepsy with Graph Diffusion-Based Network Models. PLoS Computational Biology, 2015, 11, e1004564.	3.2	24

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37	Spectral graph theory of brain oscillationsâ€”Revisited and improved. NeuroImage, 2022, 249, 118919.	4.2	22
38	Spatial HARDI: Improved visualization of complex white matter architecture with Bayesian spatial regularization. NeuroImage, 2011, 54, 396-409.	4.2	21
39	Preserved Structural Network Organization Mediates Pathology Spread in Alzheimerâ€™s Disease Spectrum Despite Loss of White Matter Tract Integrity. Journal of Alzheimer's Disease, 2018, 65, 747-764.	2.6	21
40	Analysis of Amyloid-Î² Pathology Spread in Mouse Models Suggests Spread Is Driven by Spatial Proximity, Not Connectivity. Frontiers in Neurology, 2017, 8, 653.	2.4	20
41	Statistics of Weighted Brain Networks Reveal Hierarchical Organization and Gaussian Degree Distribution. PLoS ONE, 2012, 7, e35029.	2.5	20
42	Diffuse reduction of cerebral grey matter volumes in Erdheim-Chester disease. Orphanet Journal of Rare Diseases, 2016, 11, 109.	2.7	19
43	Stereotaxic Diffusion Tensor Imaging White Matter Atlas for the in vivo Domestic Feline Brain. Frontiers in Neuroanatomy, 2020, 14, 1.	1.7	19
44	Computational Models in Electroencephalography. Brain Topography, 2022, 35, 142-161.	1.8	19
45	Frequency dependent magnetization of superconductor strip. Superconductor Science and Technology, 2011, 24, 045006.	3.5	18
46	Current carrying capability of HTS Roebel cable. Physica C: Superconductivity and Its Applications, 2011, 471, 42-47.	1.2	18
47	The Brainâ€™s Structural Connectome Mediates the Relationship between Regional Neuroimaging Biomarkers inÂAlzheimerâ€™s Disease. Journal of Alzheimer's Disease, 2016, 55, 1639-1657.	2.6	18
48	Regional vulnerability in Alzheimer's disease: The role of cellâ€autonomous and transneuronal processes. Alzheimer's and Dementia, 2018, 14, 797-810.	0.8	17
49	Emergence of canonical functional networks from the structural connectome. NeuroImage, 2021, 237, 118190.	4.2	15
50	MRI Analysis of White Matter Myelin Water Content in Multiple Sclerosis: A Novel Approach Applied to Finding Correlates of Cortical Thinning. Frontiers in Neuroscience, 2017, 11, 284.	2.8	14
51	Molecular Imaging of Striatal Dopaminergic Neuronal Loss and the Neurovascular Unit in Parkinson Disease. Frontiers in Neuroscience, 2020, 14, 528809.	2.8	13
52	Network model of pathology spread recapitulates neurodegeneration and selective vulnerability in Huntington's Disease. NeuroImage, 2021, 235, 118008.	4.2	12
53	Mature Hippocampal Neurons Require LIS1 for Synaptic Integrity: Implications for Cognition. Biological Psychiatry, 2018, 83, 518-529.	1.3	11
54	Algebraic relationship between the structural networkâ€™s Laplacian and functional networkâ€™s adjacency matrix is preserved in temporal lobe epilepsy subjects. NeuroImage, 2021, 228, 117705.	4.2	10

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55	A Maximum Likelihood Approach to Parallel Imaging With Coil Sensitivity Noise. IEEE Transactions on Medical Imaging, 2007, 26, 1046-1057.	8.9	9
56	Origins of atrophy in Parkinson linked to early onset and local transcription patterns. Brain Communications, 2020, 2, fcaa065.	3.3	9
57	Graph Models of Pathology Spread in Alzheimer's Disease: An Alternative to Conventional Graph Theoretic Analysis. Brain Connectivity, 2021, 11, 799-814.	1.7	9
58	Time-varying dynamic network model for dynamic resting state functional connectivity in fMRI and MEG imaging. NeuroImage, 2022, 254, 119131.	4.2	9
59	Age-Related Changes in Topological Degradation of White Matter Networks and Gene Expression in Chronic Schizophrenia. Brain Connectivity, 2017, 7, 574-589.	1.7	8
60	Combined Model of Aggregation and Network Diffusion Recapitulates Alzheimer's Regional Tau-Positron Emission Tomography. Brain Connectivity, 2021, 11, 624-638.	1.7	8
61	Visualization and segmentation of liver tumors using dynamic contrast MRI. , 2009, 2009, 6985-9.		7
62	Emergence of directional bias in tau deposition from axonal transport dynamics. PLoS Computational Biology, 2021, 17, e1009258.	3.2	7
63	Predicting Functional Connectivity From Observed and Latent Structural Connectivity via Eigenvalue Mapping. Frontiers in Neuroscience, 2022, 16, 810111.	2.8	7
64	Editorial: Network Spread Models of Neurodegenerative Diseases. Frontiers in Neurology, 2018, 9, 1159.	2.4	6
65	Dynamical Role of Pivotal Brain Regions in Parkinson Symptomatology Uncovered with Deep Learning. Brain Sciences, 2020, 10, 73.	2.3	6
66	Population-based input function for TSPO quantification and kinetic modeling with [11C]-DPA-713. EJNMMI Physics, 2021, 8, 39.	2.7	6
67	Macroscopic modelling of Alzheimerâ€™s disease: difficulties and challenges. Brain Multiphysics, 2021, 2, 100040.	2.3	6
68	Robust Myelin Quantitative Imaging from Multi-echo T2 MRI Using Edge Preserving Spatial Priors. Lecture Notes in Computer Science, 2013, 16, 622-630.	1.3	6
69	Network Analysis on Predicting Mean Diffusivity Change at Group Level in Temporal Lobe Epilepsy. Brain Connectivity, 2016, 6, 607-620.	1.7	5
70	Modeling seeding and neuroanatomic spread of pathology in amyotrophic lateral sclerosis. NeuroImage, 2022, 251, 118968.	4.2	5
71	Matrix Inversion and Subset Selection (MISS): A pipeline for mapping of diverse cell types across the murine brain. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2111786119.	7.1	5
72	Fast and Stable Bayesian Image Expansion Using Sparse Edge Priors. IEEE Transactions on Image Processing, 2007, 16, 1073-1084.	9.8	4

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73	A fast Edgeâ€preserving Bayesian reconstruction method for Parallel Imaging applications in cardiac MRI. Magnetic Resonance in Medicine, 2011, 65, 184-189.	3.0	4
74	Slow-gamma frequencies are optimally guarded against effects of neurodegenerative diseases and traumatic brain injuries. Journal of Computational Neuroscience, 2019, 47, 1-16.	1.0	4
75	Automatic algorithm for correcting motion artifacts in time-resolved two-dimensional magnetic resoance angiography using convex projections. Magnetic Resonance in Medicine, 2006, 55, 649-658.	3.0	3
76	Normal diffusivity of the domestic feline brain. Journal of Comparative Neurology, 2019, 527, 1012-1023.	1.6	3
77	Network-constrained technique to characterize pathology progression rate in Alzheimerâ€™s disease. Brain Communications, 2021, 3, fcab144.	3.3	3
78	Stability and dynamics of a spectral graph model of brain oscillations. Network Neuroscience, 2023, 7, 48-72.	2.6	3
79	Graph models of brain diseases. , 2015, , .		2
80	Systematic Differences Between Perceptually Relevant Image Statistics of Brain MRI and Natural Images. Frontiers in Neuroinformatics, 2019, 13, 46.	2.5	2
81	High activity and high functional connectivity are mutually exclusive in resting state zebrafish and human brains. BMC Biology, 2022, 20, 84.	3.8	2
82	Improved Signal-to-Noise Ratio in Parallel Coronary Artery Magnetic Resonance Angiography using Graph Cuts based Bayesian Reconstruction. , 2006, 2006, 703-6.		1
83	Colocalization of atrophy and tau improves AI classification of Alzheimer phenotypical variants. Alzheimer's and Dementia, 2020, 16, e046258.	0.8	1
84	Feasibility of Population-Based Input Function for Kinetic Analysis of [¹¹C]-DPA-713. , 2020, , .		1
85	New applications of diffusion model based prediction of pathological brain alterations: Introducing amyloidâ€tau interactions. Alzheimer's and Dementia, 2021, 17, .	0.8	1
86	Abnormal neural oscillations depicting excitatoryâ€inhibitory imbalance are distinctly associated with amyloid and tau depositions in Alzheimer's disease. Alzheimer's and Dementia, 2021, 17, .	0.8	1
87	Statistical Aspects of Parallel Imaging Reconstruction. , 2006, 2006, 377-80.		0
88	A Bayesian Framework For Reconstruction Of Accelerated MRI Using Graph Cuts. Conference Record of the Asilomar Conference on Signals, Systems and Computers, 2007, , .	0.0	0
89	Beyond the logistic growth model for nitrous oxide emission factors from agricultural soils. , 2011, , .		0
90	Discriminative Random Field Segmentation of Lung Nodules in CT Studies. Computational and Mathematical Methods in Medicine, 2013, 2013, 1-9.	1.3	0

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91	O4â€07â€02: NETWORK TRANSMISSION MODEL RECAPITULATES AMYLOID AND TAU SPREAD AND PREDICTS IMAGING FINDINGS. Alzheimer's and Dementia, 2016, 12, P347.	0.8	0
92	Network diffusion model enhances predictions of future tauâ€PET burden in Alzheimerâ€™s patients. Alzheimer's and Dementia, 2020, 16, e039480.	0.8	0
93	How â€˜atypicalâ€™ is the neuroimaging signature of Alzheimerâ€™s atypical variants? MRI and PET imaging of posterior cortical atrophy and logopenic variant of primary progressive aphasia. Alzheimer's and Dementia, 2020, 16, e040623.	0.8	0
94	A dictionaryâ€based graphâ€cut algorithm for MRI reconstruction. NMR in Biomedicine, 2020, 33, e4344.	2.8	0
95	The effect of microglial genes on network diffusion of pathology in mouse models of tauopathy. Alzheimer's and Dementia, 2021, 17, .	0.8	0
96	Axonal transport dynamics explain directional bias in tau deposition.. Alzheimer's and Dementia, 2021, 17 Suppl 3, e052876.	0.8	0
97	Combining network spread with protein aggregation correctly recapitulates empirical spatio-temporal progression of Alzheimer's tau pathology.. Alzheimer's and Dementia, 2021, 17 Suppl 3, e054147.	0.8	0