Rajesh P N Rao

List of Publications by Year
in descending order

138 papers	12,854 citations	81900 39 h-index	32842 100 g-index
153 all docs	153 docs citations	153 times ranked	10133 citing authors

#	Article	IF	Citations
1	Predictive coding in the visual cortex: a functional interpretation of some extra-classical receptive-field effects. Nature Neuroscience, 1999, 2, 79-87.	14.8	4,034
2	Deictic codes for the embodiment of cognition. Behavioral and Brain Sciences, 1997, 20, 723-742.	0.7	1,044
3	Spectral Changes in Cortical Surface Potentials during Motor Movement. Journal of Neuroscience, 2007, 27, 2424-2432.	3.6	654
4	Cortical activity during motor execution, motor imagery, and imagery-based online feedback. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 4430-4435.	7.1	474
5	Towards adaptive classification for BCI. Journal of Neural Engineering, 2006, 3, R13-R23.	3.5	360
6	Control of a humanoid robot by a noninvasive brain–computer interface in humans. Journal of Neural Engineering, 2008, 5, 214-220.	3.5	356
7	Predictive coding. Wiley Interdisciplinary Reviews: Cognitive Science, 2011, 2, 580-593.	2.8	323
8	Dynamic Model of Visual Recognition Predicts Neural Response Properties in the Visual Cortex. Neural Computation, 1997, 9, 721-763.	2.2	260
9	Eye Movements Reveal the Spatiotemporal Dynamics of Visual Search. Psychological Science, 1997, 8, 448-453.	3.3	237
10	Eye movements in iconic visual search. Vision Research, 2002, 42, 1447-1463.	1.4	237
11	Online Electromyographic Control of a Robotic Prosthesis. IEEE Transactions on Biomedical Engineering, 2008, 55, 1128-1135.	4.2	233
12	Broadband changes in the cortical surface potential track activation of functionally diverse neuronal populations. NeuroImage, 2014, 85, 711-720.	4.2	225
13	Electrocorticography-based brain computer Interface-the seattle experience. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2006, 14, 194-198.	4.9	212
14	An active vision architecture based on iconic representations. Artificial Intelligence, 1995, 78, 461-505.	5.8	205
15	Bayesian Computation in Recurrent Neural Circuits. Neural Computation, 2004, 16, 1-38.	2.2	194
16	Spike-Timing-Dependent Hebbian Plasticity as Temporal Difference Learning. Neural Computation, 2001, 13, 2221-2237.	2.2	173
17	Decision Making Under Uncertainty: A Neural Model Based on Partially Observable Markov Decision Processes. Frontiers in Computational Neuroscience, 2010, 4, 146.	2.1	156
18	Real-time functional brain mapping using electrocorticography. NeuroImage, 2007, 37, 504-507.	4.2	146

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19	Feasibility and pragmatics of classifying working memory load with an electroencephalograph. , 2008, , .		138
20	Distributed cortical adaptation during learning of a brain-computer interface task. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 10818-10823.	7.1	132
21	Bayesian inference and attentional modulation in the visual cortex. NeuroReport, 2005, 16, 1843-1848.	1.2	131
22	An optimal estimation approach to visual perception and learning. Vision Research, 1999, 39, 1963-1989.	1.4	126
23	A Direct Brain-to-Brain Interface in Humans. PLoS ONE, 2014, 9, e111332.	2.5	126
24	â€œSocialâ€•robots are psychological agents for infants: A test of gaze following. Neural Networks, 2010, 23, 966-972.	5.9	121
25	Cortical electrode localization from X-rays and simple mapping for electrocorticographic research: The â€œLocation on Cortexâ€•(LOC) package for MATLAB. Journal of Neuroscience Methods, 2007, 162, 303-308.	2.5	101
26	Generalized Features for Electrocorticographic BCIs. IEEE Transactions on Biomedical Engineering, 2008, 55, 273-280.	4.2	91
27	BrainNet: A Multi-Person Brain-to-Brain Interface for Direct Collaboration Between Brains. Scientific Reports, 2019, 9, 6115.	3.3	83
28	Spontaneous Decoding of the Timing and Content of Human Object Perception from Cortical Surface Recordings Reveals Complementary Information in the Event-Related Potential and Broadband Spectral Change. PLoS Computational Biology, 2016, 12, e1004660.	3.2	74
29	Robust, long-term control of an electrocorticographic brain-computer interface with fixed parameters. Neurosurgical Focus, 2009, 27, E13.	2.3	72
30	Bilinear Sparse Coding for Invariant Vision. Neural Computation, 2005, 17, 47-73.	2.2	68
31	Nonlinear Phaseâ€"Phase Cross-Frequency Coupling Mediates Communication between Distant Sites in Human Neocortex. Journal of Neuroscience, 2009, 29, 426-435.	3.6	65
32	Dynamic Modulation of Local Population Activity by Rhythm Phase in Human Occipital Cortex During a Visual Search Task. Frontiers in Human Neuroscience, 2010, 4, 197.	2.0	65
33	Localization and classification of phonemes using high spatial resolution electrocorticography (ECoG) grids. , 2008, 2008, 4964-7.		64
34	Task-Specific Somatosensory Feedback via Cortical Stimulation in Humans. IEEE Transactions on Haptics, 2016, 9, 515-522.	2.7	58
35	Beyond the Gamma Band: The Role of High-Frequency Features in Movement Classification. IEEE Transactions on Biomedical Engineering, 2008, 55, 1634-1637.	4.2	57
36	A probabilistic model of gaze imitation and shared attention. Neural Networks, 2006, 19, 299-310.	5.9	56

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37	Brain-Computer Interfacing [In the Spotlight. IEEE Signal Processing Magazine, 2010, 27, 152-150.	5.6	56
38	Efficient human-robot collaboration: When should a robot take initiative?. International Journal of Robotics Research, 2017, 36, 563-579.	8.5	55
39	Optimal Smoothing in Visual Motion Perception. Neural Computation, 2001, 13, 1243-1253.	2.2	54
40	Classification of contralateral and ipsilateral finger movements for electrocorticographic brain-computer interfaces. Neurosurgical Focus, 2009, 27, E12.	2.3	54
41	Entropic Evidence for Linguistic Structure in the Indus Script. Science, 2009, 324, 1165-1165.	12.6	50
42	An adaptive brain-computer interface for humanoid robot control. , 2011, , .		47
43	Direct Electrical Stimulation in Electrocorticographic Brain–Computer Interfaces: Enabling Technologies for Input to Cortex. Frontiers in Neuroscience, 2019, 13, 804.	2.8	46
44	Brain–computer interfaces: a powerful tool for scientific inquiry. Current Opinion in Neurobiology, 2014, 25, 70-75.	4.2	40
45	Towards a Real-Time Bayesian Imitation System for a Humanoid Robot. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	39
46	Robot Programming by Demonstration with situated spatial language understanding. , 2015, , .		37
47	Towards neural co-processors for the brain: combining decoding and encoding in brain–computer interfaces. Current Opinion in Neurobiology, 2019, 55, 142-151.	4.2	36
48	Playing 20 Questions with the Mind: Collaborative Problem Solving by Humans Using a Brain-to-Brain Interface. PLoS ONE, 2015, 10, e0137303.	2.5	32
49	Modeling other minds: Bayesian inference explains human choices in group decision-making. Science Advances, 2019, 5, eaax8783.	10.3	31
50	A Bayesian model of imitation in infants and robots. , 2007, , 217-248.		30
51	Identifying with all humanity predicts cooperative health behaviors and helpful responding during COVID-19. PLoS ONE, 2021, 16, e0248234.	2.5	30
52	Bayesian inference with incomplete knowledge explains perceptual confidence and its deviations from accuracy. Nature Communications, 2021, 12, 5704.	12.8	28
53	Direct stimulation of somatosensory cortex results in slower reaction times compared to peripheral touch in humans. Scientific Reports, 2019, 9, 3292.	3.3	27
54	Finger Movement Classification for an Electrocorticographic BCI. , 2007, , .		26

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55	Probabilistic co-adaptive brain–computer interfacing. Journal of Neural Engineering, 2013, 10, 066008.	3.5	26
56	Reward Optimization in the Primate Brain: A Probabilistic Model of Decision Making under Uncertainty. PLoS ONE, 2013, 8, e53344.	2.5	26
57	Non-invasive detection of high gamma band activity during motor imagery. Frontiers in Human Neuroscience, 2014, 8, 817.	2.0	26
58	Self–organizing neural systems based on predictive learning. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2003, 361, 1149-1175.	3.4	25
59	Upward separation for FewP and related classes. Information Processing Letters, 1994, 52, 175-180.	0.6	24
60	Learning the Lie Groups of Visual Invariance. Neural Computation, 2007, 19, 2665-2693.	2.2	24
61	Generalized neural decoders for transfer learning across participants and recording modalities. Journal of Neural Engineering, 2021, 18, 026014.	3.5	24
62	Probabilistic Models of Attention Based on Iconic Representations and Predictive Coding. , 2005, , 553-561.		23
63	A Markov model of the Indus script. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 13685-13690.	7.1	23
64	New Perspectives on Neuroengineering and Neurotechnologies: NSF-DFG Workshop Report. IEEE Transactions on Biomedical Engineering, 2016, 63, 1354-1367.	4.2	23
65	Title is missing!. Machine Learning, 1998, 31, 87-113.	5.4	20
66	Learning full-body motions from monocular vision: dynamic imitation in a humanoid robot. , 2007, , .		20
67	Probabilistic Analysis of an Ancient Undeciphered Script. Computer, 2010, 43, 76-80.	1.1	19
68	Statistical Analysis of the Indus Script Using n-Grams. PLoS ONE, 2010, 5, e9506.	2.5	19
69	Learning Actions through Imitation and Exploration: Towards Humanoid Robots That Learn from Humans. Lecture Notes in Computer Science, 2009, , 103-138.	1.3	19
70	The physiology of perception in human temporal lobe is specialized for contextual novelty. Journal of Neurophysiology, 2015, 114, 256-263.	1.8	18
71	Learning deep generative spatial models for mobile robots. , 2017, , .		17
72	Neural circuits in silicon. Nature, 2000, 405, 891-892.	27.8	16

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73	Non-invasive Brain-Computer Interfaces: Enhanced Gaming and Robotic Control. Lecture Notes in Computer Science, 2011, , 362-369.	1.3	16
74	Predictive Learning of Temporal Sequences in Recurrent Neocortical Circuits. Novartis Foundation Symposium, 2008, 239, 208-233.	1.1	15
75	Unsupervised Decoding of Long-Term, Naturalistic Human Neural Recordings with Automated Video and Audio Annotations. Frontiers in Human Neuroscience, 2016, 10, 165.	2.0	15
76	Navigating a 2D Virtual World Using Direct Brain Stimulation. Frontiers in Robotics and AI, 2016, 3, .	3.2	15
77	Automatic extraction of command hierarchies for adaptive brain-robot interfacing. , 2012, , .		14
78	Neural correlates of learning in an electrocorticographic motor-imagery brain-computer interface. Brain-Computer Interfaces, 2014, 1, 147-157.	1.8	14
79	Accelerating imitation learning through crowdsourcing. , 2014, , .		14
80	Planning and Acting in Uncertain Environments using Probabilistic Inference. , 2006, , .		13
81	Cortical Topography of Error-Related High-Frequency Potentials During Erroneous Control in a Continuous Control Brain–Computer Interface. Frontiers in Neuroscience, 2019, 13, 502.	2.8	13
82	Entropy, the Indus Script, and Language:A Reply to R. Sproat. Computational Linguistics, 2010, 36, 795-805.	3.3	12
83	A COGNITIVE MODEL OF IMITATIVE DEVELOPMENT IN HUMANS AND MACHINES. International Journal of Humanoid Robotics, 2007, 04, 387-406.	1.1	11
84	Statistical Pattern Recognition and Machine Learning in Brain–Computer Interfaces. , 2010, , 335-367.		11
85	Concurrent control of a brain–computer interface and natural overt movements. Journal of Neural Engineering, 2018, 15, 066021.	3.5	11
86	Localized High Gamma Motor Oscillations Respond to Perceived Biologic Motion. Journal of Clinical Neurophysiology, 2013, 30, 299-307.	1.7	10
87	Mining naturalistic human behaviors in long-term video and neural recordings. Journal of Neuroscience Methods, 2021, 358, 109199.	2.5	10
88	When Two Brains Connect. Scientific American Mind, 2014, 25, 36-39.	0.0	9
89	Bayesian Inference and Online Learning in Poisson Neuronal Networks. Neural Computation, 2016, 28, 1503-1526.	2.2	9
90	Brain surface electrode co-registration using MRI and x-ray. , 2010, 2010, 6015-8.		8

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91	Towards hierarchical BCIs for robotic control. , 2011, , .		8
92	A Bayesian Developmental Approach to Robotic Goal-Based Imitation Learning. PLoS ONE, 2015, 10, e0141965.	2.5	8
93	Implementing belief propagation in neural circuits. Neurocomputing, 2005, 65-66, 393-399.	5.9	7
94	Learning to Walk by Imitation in Low-Dimensional Subspaces. Advanced Robotics, 2010, 24, 207-232.	1.8	7
95	Pyneal: Open Source Real-Time fMRI Software. Frontiers in Neuroscience, 2020, 14, 900.	2.8	7
96	Projections and the Potential Societal Impact of the Future of Neurotechnologies. Frontiers in Neuroscience, 2021, 15, 658930.	2.8	7
97	AJILE12: Long-term naturalistic human intracranial neural recordings and pose. Scientific Data, 2022, 9, 184.	5.3	7
98	Title is missing!. Autonomous Robots, 1998, 5, 297-316.	4.8	6
99	Development of localized oriented receptive fields by learning a translation-invariant code for natural images. Network: Computation in Neural Systems, 1998, 9, 219-234.	3.6	6
100	Behavioral and Neural Variability of Naturalistic Arm Movements. ENeuro, 2021, 8, ENEURO.0007-21.2021.	1.9	6
101	Learning to Imitate Human Actions through Eigenposes. Studies in Computational Intelligence, 2010, , 357-381.	0.9	6
102	Cortico-Cortical Interactions during Acquisition and Use of a Neuroprosthetic Skill. PLoS Computational Biology, 2016, 12, e1004931.	3.2	6
103	An Image-based Brain-Computer Interface Using the P3 Response. , 2007, , .		5
104	Three cases of feature correlation in an electrocorticographic BCI. , 2008, 2008, 5318-21.		5
105	Imitation learning with hierarchical actions. , 2010, , .		5
106	Short-time windowed covariance: A metric for identifying non-stationary, event-related covariant cortical sites. Journal of Neuroscience Methods, 2014, 222, 24-33.	2.5	5
107	Autonomous question answering with mobile robots in human-populated environments. , 2016, , .		5
108	Imitation Learning Using Graphical Models. Lecture Notes in Computer Science, 2007, , 757-764.	1.3	5

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109	Seeing behind occlusions. Lecture Notes in Computer Science, 1994, , 274-285.	1.3	4
110	Complex Cell-like Direction Selectivity through Spike-Timing Dependent Plasticity. IETE Journal of Research, 2003, 49, 97-111.	2.6	4
111	Learning nonparametric policies by imitation. , 2008, , .		4
112	Detection of spontaneous class-specific visual stimuli with high temporal accuracy in human electrocorticography. , 2009, 2009, 6465-8.		4
113	Simultaneous brain-computer interfacing and motor control: Expanding the reach of non-invasive BCIs. , 2012, 2012, 6715-8.		4
114	Designing information gathering robots for human-populated environments. , 2015, , .		4
115	Electrocorticographic dynamics predict visually guided motor imagery of grasp shaping. , 2017, , .		3
116	Estimation of Vector Autoregressive Parameters and Granger Causality From Noisy Multichannel Data. IEEE Transactions on Biomedical Engineering, 2019, 66, 2231-2240.	4.2	3
117	Unsupervised Sleep and Wake State Identification in Long-Term Electrocorticography Recordings. , 2020, 2020, 629-632.		3
118	The Indus Script and Economics.. , 2018, , 518-525.		3
119	A single-spike model of predictive coding. Neurocomputing, 2000, 32-33, 17-23.	5.9	2
120	Learning temporal patterns by redistribution of synaptic efficacy. Neurocomputing, 2003, 52-54, 13-18.	5.9	2
121	Complementary Kernel Density Estimation. Pattern Recognition Letters, 2012, 33, 1381-1387.	4.2	2
122	On statistical measures and ancient writing systems. Language, 2015, 91, e198-e205.	0.6	2
123	Exploring the Potential of Information Gathering Robots. , 2015, , .		2
124	Multistep model for predicting upper-limb 3D isometric force application from pre-movement electrocorticographic features. , 2016, 2016, 1564-1567.		2
125	Touch restoration through electrical cortical stimulation in humans. , 2021, , 443-478.		2
126	Brain Co-processors: Using AI to Restore and Augment Brain Function. , 2021, , 1-36.		2

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127	A Computational Model of Spatial Representations that Explains Object-Centered Neglect in Parietal Patients. , 1997, , 779-785.		2
128	Learning temporal clusters with synaptic facilitation and lateral inhibition. Neurocomputing, 2005, 65-66, 877-884.	5.9	1
129	Task-Related Principal Component Analysis: Formalism and Illustration. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, 2007, 5469-72.	0.5	1
130	The Behavioral Split in the Gamma Band. , 2007, , .		1
131	Using eigenposes for lossless periodic human motion imitation. , 2009, , .		1
132	Fast Structured Prediction Using Large Margin Sigmoid Belief Networks. International Journal of Computer Vision, 2012, 99, 302-318.	15.6	1
133	Interactive web application for exploring matrices of neural connectivity. , 2017, , .		1
134	Electrocorticographic Dynamics Predict Sustained Grasping and Upper-Limb Kinetic Output. , 2018, , .		1
135	A note on P-selective sets and closeness. Information Processing Letters, 1995, 54, 179-185.	0.6	0
136	Pointing the way. Behavioral and Brain Sciences, 1997, 20, 758-763.	0.7	0
137	Receptive Field. , 2002, , 155-168.		0
138	Near-Instantaneous Classification of Perceptual States from Cortical Surface Recordings. Springer Briefs in Electrical and Computer Engineering, 2015, , 105-114.	0.5	0