Demis Hassabis

List of Publications by Year
in descending order

62 papers	81,034 citations	29994 54 h-index	114278 63 g-index
64 all docs	64 docs citations	64 times ranked	50451 citing authors

#	Article	IF	Citations
1	Highly accurate protein structure prediction with AlphaFold. Nature, 2021, 596, 583-589.	13.7	17,754
2	Human-level control through deep reinforcement learning. Nature, 2015, 518, 529-533.	13.7	15,934
3	Mastering the game of Go with deep neural networks and tree search. Nature, 2016, 529, 484-489.	13.7	9,796
4	Mastering the game of Go without human knowledge. Nature, 2017, 550, 354-359.	13.7	5,208
5	AlphaFold Protein Structure Database: massively expanding the structural coverage of protein-sequence space with high-accuracy models. Nucleic Acids Research, 2022, 50, D439-D444.	6.5	3,692
6	Overcoming catastrophic forgetting in neural networks. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 3521-3526.	3.3	2,653
7	Improved protein structure prediction using potentials from deep learning. Nature, 2020, 577, 706-710.	13.7	2,112
8	Highly accurate protein structure prediction for the human proteome. Nature, 2021, 596, 590-596.	13.7	1,773
9	A general reinforcement learning algorithm that masters chess, shogi, and Go through self-play. Science, 2018, 362, 1140-1144.	6.0	1,704
10	Clinically applicable deep learning for diagnosis and referral in retinal disease. Nature Medicine, 2018, 24, 1342-1350.	15.2	1,551
11	Grandmaster level in StarCraft II using multi-agent reinforcement learning. Nature, 2019, 575, 350-354.	13.7	1,491
12	International evaluation of an AI system for breast cancer screening. Nature, 2020, 577, 89-94.	13.7	1,458
13	Patients with hippocampal amnesia cannot imagine new experiences. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 1726-1731.	3.3	1,212
14	The Future of Memory: Remembering, Imagining, and the Brain. Neuron, 2012, 76, 677-694.	3.8	1,066
15	Deconstructing episodic memory with construction. Trends in Cognitive Sciences, 2007, 11, 299-306.	4.0	995
16	Neuroscience-Inspired Artificial Intelligence. Neuron, 2017, 95, 245-258.	3.8	934
17	Hybrid computing using a neural network with dynamic external memory. Nature, 2016, 538, 471-476.	13.7	799
18	When Fear Is Near: Threat Imminence Elicits Prefrontal-Periaqueductal Gray Shifts in Humans. Science, 2007, 317, 1079-1083.	6.0	798

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19	Using Imagination to Understand the Neural Basis of Episodic Memory. Journal of Neuroscience, 2007, 27, 14365-14374.	1.7	675
20	A clinically applicable approach to continuous prediction of future acute kidney injury. Nature, 2019, 572, 116-119.	13.7	652
21	Mastering Atari, Go, chess and shogi by planning with a learned model. Nature, 2020, 588, 604-609.	13.7	570
22	Vector-based navigation using grid-like representations in artificial agents. Nature, 2018, 557, 429-433.	13.7	414
23	What Learning Systems do Intelligent Agents Need? Complementary Learning Systems Theory Updated. Trends in Cognitive Sciences, 2016, 20, 512-534.	4.0	386
24	From Threat to Fear: The Neural Organization of Defensive Fear Systems in Humans. Journal of Neuroscience, 2009, 29, 12236-12243.	1.7	384
25	Prefrontal cortex as a meta-reinforcement learning system. Nature Neuroscience, 2018, 21, 860-868.	7.1	378
26	Reinforcement Learning, Fast and Slow. Trends in Cognitive Sciences, 2019, 23, 408-422.	4.0	364
27	Human-level performance in 3D multiplayer games with population-based reinforcement learning. Science, 2019, 364, 859-865.	6.0	286
28	Neural scene representation and rendering. Science, 2018, 360, 1204-1210.	6.0	285
29	A distributional code for value in dopamine-based reinforcement learning. Nature, 2020, 577, 671-675.	13.7	262
30	Magnetic control of tokamak plasmas through deep reinforcement learning. Nature, 2022, 602, 414-419.	13.7	244
31	Protein structure prediction using multiple deep neural networks in the 13th Critical Assessment of Protein Structure Prediction (CASP13). Proteins: Structure, Function and Bioinformatics, 2019, 87, 1141-1148.	1.5	242
32	Applying and improving <scp>AlphaFold</scp> at <scp>CASP14</scp>. Proteins: Structure, Function and Bioinformatics, 2021, 89, 1711-1721.	1.5	231
33	Tracking the Emergence of Conceptual Knowledge during Human Decision Making. Neuron, 2009, 63, 889-901.	3.8	227
34	Hippocampal place cells construct reward related sequences through unexplored space. ELife, 2015, 4, e06063.	2.8	206
35	Decoding Neuronal Ensembles in the Human Hippocampus. Current Biology, 2009, 19, 546-554.	1.8	197
36	Detecting Representations of Recent and Remote Autobiographical Memories in vmPFC and Hippocampus. Journal of Neuroscience, 2012, 32, 16982-16991.	1.7	191

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37	Decoding Individual Episodic Memory Traces in the Human Hippocampus. Current Biology, 2010, 20, 544-547.	1.8	187
38	Predicting conversion to wet age-related macular degeneration using deep learning. Nature Medicine, 2020, 26, 892-899.	15.2	178
39	Cortical midline involvement in autobiographical memory. NeuroImage, 2009, 44, 1188-1200.	2.1	177
40	Pushing the frontiers of density functionals by solving the fractional electron problem. Science, 2021, 374, 1385-1389.	6.0	174
41	Advancing mathematics by guiding human intuition with AI. Nature, 2021, 600, 70-74.	13.7	158
42	Protein structure predictions to atomic accuracy with AlphaFold. Nature Methods, 2022, 19, 11-12.	9.0	145
43	Neural Mechanisms of Hierarchical Planning in a Virtual Subway Network. Neuron, 2016, 90, 893-903.	3.8	128
44	Differential engagement of brain regions within a â€˜coreâ€™ network during scene construction. Neuropsychologia, 2010, 48, 1501-1509.	0.7	125
45	Scene Construction in Amnesia: An fMRI Study. Journal of Neuroscience, 2012, 32, 5646-5653.	1.7	117
46	Computations Underlying Social Hierarchy Learning: Distinct Neural Mechanisms for Updating and Representing Self-Relevant Information. Neuron, 2016, 92, 1135-1147.	3.8	117
47	Imagining fictitious and future experiences: Evidence from developmental amnesia. Neuropsychologia, 2010, 48, 3187-3192.	0.7	114
48	A Goal Direction Signal in the Human Entorhinal/Subicular Region. Current Biology, 2015, 25, 87-92.	1.8	114
49	How cognitive and reactive fear circuits optimize escape decisions in humans. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 3186-3191.	3.3	102
50	Autobiographical memory in semantic dementia: A longitudinal fMRI study. Neuropsychologia, 2010, 48, 123-136.	0.7	83
51	Semantic representations in the temporal pole predict false memories. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 10180-10185.	3.3	80
52	Multi-voxel pattern analysis in human hippocampal subfields. Frontiers in Human Neuroscience, 2012, 6, 290.	1.0	74
53	Role of the hippocampus in imagination and future thinking. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, E39.	3.3	71
54	Decoding representations of scenes in the medial temporal lobes. Hippocampus, 2012, 22, 1143-1153.	0.9	62

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55	Slow escape decisions are swayed by trait anxiety. Nature Human Behaviour, 2019, 3, 702-708.	6.2	60
56	Decoding overlapping memories in the medial temporal lobes using high-resolution fMRI. Learning and Memory, 2011, 18, 742-746.	0.5	53
57	Foraging under Competition: The Neural Basis of Input-Matching in Humans. Journal of Neuroscience, 2013, 33, 9866-9872.	1.7	48
58	Use of deep learning to develop continuous-risk models for adverse event prediction from electronic health records. Nature Protocols, 2021, 16, 2765-2787.	5.5	41
59	Unsupervised deep learning identifies semantic disentanglement in single inferotemporal face patch neurons. Nature Communications, 2021, 12, 6456.	5.8	40
60	Impaired spatial and non-spatial configural learning in patients with hippocampal pathology. Neuropsychologia, 2007, 45, 2699-2711.	0.7	38
61	Is the brain a good model for machine intelligence?. Nature, 2012, 482, 462-463.	13.7	28
62	Reply to HuszÃ¡r: The elastic weight consolidation penalty is empirically valid. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E2498.	3.3	5