Demis Hassabis

List of Publications by Year
in descending order

67 papers	92,810 citations	21183 57 h-index	73373 71 g-index
72 all docs	72 docs citations	72 times ranked	79022 citing authors

#	Article	IF	Citations
1	Highly accurate protein structure prediction with AlphaFold. Nature, 2021, 596, 583-589.	36.3	22,334
2	Human-level control through deep reinforcement learning. Nature, 2015, 518, 529-533.	36.3	17,308
3	Mastering the game of Go with deep neural networks and tree search. Nature, 2016, 529, 484-489.	36.3	10,303
4	Mastering the game of Go without human knowledge. Nature, 2017, 550, 354-359.	36.3	5,602
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.	14.2	4,705
6	Overcoming catastrophic forgetting in neural networks. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 3521-3526.	7.6	3,037
7	Improved protein structure prediction using potentials from deep learning. Nature, 2020, 577, 706-710.	36.3	2,283
8	Highly accurate protein structure prediction for the human proteome. Nature, 2021, 596, 590-596.	36.3	2,012
9	Grandmaster level in StarCraft II using multi-agent reinforcement learning. Nature, 2019, 575, 350-354.	36.3	1,709
10	Clinically applicable deep learning for diagnosis and referral in retinal disease. Nature Medicine, 2018, 24, 1342-1350.	30.5	1,648
11	International evaluation of an AI system for breast cancer screening. Nature, 2020, 577, 89-94.	36.3	1,632
12	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.	7.6	1,254
13	The Future of Memory: Remembering, Imagining, and the Brain. Neuron, 2012, 76, 677-694.	8.1	1,113
14	Deconstructing episodic memory with construction. Trends in Cognitive Sciences, 2007, 11, 299-306.	8.1	1,035
15	Neuroscience-Inspired Artificial Intelligence. Neuron, 2017, 95, 245-258.	8.1	995
16	Hybrid computing using a neural network with dynamic external memory. Nature, 2016, 538, 471-476.	36.3	850
17	When Fear Is Near: Threat Imminence Elicits Prefrontal-Periaqueductal Gray Shifts in Humans. Science, 2007, 317, 1079-1083.	13.9	829
18	A clinically applicable approach to continuous prediction of future acute kidney injury. Nature, 2019, 572, 116-119.	36.3	697

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19	Using Imagination to Understand the Neural Basis of Episodic Memory. Journal of Neuroscience, 2007, 27, 14365-14374.	3.8	685
20	Mastering Atari, Go, chess and shogi by planning with a learned model. Nature, 2020, 588, 604-609.	36.3	670
21	Vector-based navigation using grid-like representations in artificial agents. Nature, 2018, 557, 429-433.	36.3	464
22	Reinforcement Learning, Fast and Slow. Trends in Cognitive Sciences, 2019, 23, 408-422.	8.1	423
23	What Learning Systems do Intelligent Agents Need? Complementary Learning Systems Theory Updated. Trends in Cognitive Sciences, 2016, 20, 512-534.	8.1	416
24	Prefrontal cortex as a meta-reinforcement learning system. Nature Neuroscience, 2018, 21, 860-868.	14.6	411
25	From Threat to Fear: The Neural Organization of Defensive Fear Systems in Humans. Journal of Neuroscience, 2009, 29, 12236-12243.	3.8	403
26	Human-level performance in 3D multiplayer games with population-based reinforcement learning. Science, 2019, 364, 859-865.	13.9	327
27	Magnetic control of tokamak plasmas through deep reinforcement learning. Nature, 2022, 602, 414-419.	36.3	314
28	Neural scene representation and rendering. Science, 2018, 360, 1204-1210.	13.9	296
29	A distributional code for value in dopamine-based reinforcement learning. Nature, 2020, 577, 671-675.	36.3	285
30	Accurate structure prediction of biomolecular interactions with AlphaFold 3. Nature, 2024, 630, 493-500.	36.3	283
31	Applying and improving <scp>AlphaFold</scp> at <scp>CASP14</scp>. Proteins: Structure, Function and Bioinformatics, 2021, 89, 1711-1721.	3.2	268
32	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.	3.2	254
33	Tracking the Emergence of Conceptual Knowledge during Human Decision Making. Neuron, 2009, 63, 889-901.	8.1	234
34	Advancing mathematics by guiding human intuition with AI. Nature, 2021, 600, 70-74.	36.3	201
35	Decoding Neuronal Ensembles in the Human Hippocampus. Current Biology, 2009, 19, 546-554.	4.0	200
36	Detecting Representations of Recent and Remote Autobiographical Memories in vmPFC and Hippocampus. Journal of Neuroscience, 2012, 32, 16982-16991.	3.8	200

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37	Predicting conversion to wet age-related macular degeneration using deep learning. Nature Medicine, 2020, 26, 892-899.	30.5	193
38	Decoding Individual Episodic Memory Traces in the Human Hippocampus. Current Biology, 2010, 20, 544-547.	4.0	191
39	Discovering faster matrix multiplication algorithms with reinforcement learning. Nature, 2022, 610, 47-53.	36.3	191
40	Cortical midline involvement in autobiographical memory. NeuroImage, 2009, 44, 1188-1200.	4.4	186
41	Protein structure predictions to atomic accuracy with AlphaFold. Nature Methods, 2022, 19, 11-12.	19.6	177
42	Differential engagement of brain regions within a â€˜coreâ€™ network during scene construction. Neuropsychologia, 2010, 48, 1501-1509.	1.7	133
43	Neural Mechanisms of Hierarchical Planning in a Virtual Subway Network. Neuron, 2016, 90, 893-903.	8.1	130
44	A Goal Direction Signal in the Human Entorhinal/Subicular Region. Current Biology, 2015, 25, 87-92.	4.0	121
45	Computations Underlying Social Hierarchy Learning: Distinct Neural Mechanisms for Updating and Representing Self-Relevant Information. Neuron, 2016, 92, 1135-1147.	8.1	121
46	Scene Construction in Amnesia: An fMRI Study. Journal of Neuroscience, 2012, 32, 5646-5653.	3.8	119
47	Imagining fictitious and future experiences: Evidence from developmental amnesia. Neuropsychologia, 2010, 48, 3187-3192.	1.7	116
48	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.	7.6	110
49	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.	7.6	86
50	Autobiographical memory in semantic dementia: A longitudinal fMRI study. Neuropsychologia, 2010, 48, 123-136.	1.7	85
51	Multi-voxel pattern analysis in human hippocampal subfields. Frontiers in Human Neuroscience, 2012, 6, 290.	2.1	77
52	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.	7.6	72
53	Decoding representations of scenes in the medial temporal lobes. Hippocampus, 2012, 22, 1143-1153.	2.1	64
54	Slow escape decisions are swayed by trait anxiety. Nature Human Behaviour, 2019, 3, 702-708.	12.6	63

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55	Unsupervised deep learning identifies semantic disentanglement in single inferotemporal face patch neurons. Nature Communications, 2021, 12, 6456.	13.2	58
56	Decoding overlapping memories in the medial temporal lobes using high-resolution fMRI. Learning and Memory, 2011, 18, 742-746.	1.5	55
57	Mastering the game of Stratego with model-free multiagent reinforcement learning. Science, 2022, 378, 990-996.	13.9	51
58	Use of deep learning to develop continuous-risk models for adverse event prediction from electronic health records. Nature Protocols, 2021, 16, 2765-2787.	12.6	49
59	Foraging under Competition: The Neural Basis of Input-Matching in Humans. Journal of Neuroscience, 2013, 33, 9866-9872.	3.8	48
60	Impaired spatial and non-spatial configural learning in patients with hippocampal pathology. Neuropsychologia, 2007, 45, 2699-2711.	1.7	38
61	Acquisition of chess knowledge in AlphaZero. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	7.6	35
62	Is the brain a good model for machine intelligence?. Nature, 2012, 482, 462-463.	36.3	31
63	Faster sorting algorithms discovered using deep reinforcement learning. Nature, 2023, 618, 257-263.	36.3	31
64	Addendum: International evaluation of an AI system for breast cancer screening. Nature, 2020, 586, E19-E19.	36.3	23
65	3D-Beacons: decreasing the gap between protein sequences and structures through a federated network of protein structure data resources. GigaScience, 2022, 11, .	6.8	11
66	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.	7.6	6
67	Response to Comment on â€œPushing the frontiers of density functionals by solving the fractional electron problemâ€. Science, 2022, 377, .	13.9	2