Tomaso A Poggio

List of Publications by Year
in descending order

115 papers	26,121 citations	23567 58 h-index	28297 105 g-index
121 all docs	121 docs citations	121 times ranked	15442 citing authors

#	Article	IF	Citations
1	Deep Learning for Seismic Inverse Problems: Toward the Acceleration of Geophysical Analysis Workflows. IEEE Signal Processing Magazine, 2021, 38, 89-119.	5.6	65
2	Biologically plausible illumination-invariant face representations. Journal of Vision, 2021, 21, 2232.	0.3	0
3	Quantifying Adversarial Sensitivity of a Model as a Function of the Image Distribution. Journal of Vision, 2021, 21, 2841.	0.3	0
4	Machine Recognition of Objects. , 2021, , 781-784.		0
5	An Overview of Some Issues in the Theory of Deep Networks. IEEJ Transactions on Electrical and Electronic Engineering, 2020, 15, 1560-1571.	1.4	0
6	Theoretical issues in deep networks. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 30039-30045.	7.1	70
7	Scale and translation-invariance for novel objects in human vision. Scientific Reports, 2020, 10, 1411.	3.3	21
8	Complexity control by gradient descent in deep networks. Nature Communications, 2020, 11, 1027.	12.8	14
9	Symmetry-adapted representation learning. Pattern Recognition, 2019, 86, 201-208.	8.1	13
10	Eccentricity Dependent Neural Network with Recurrent Attention for Scale, Translation and Clutter Invariance. Journal of Vision, 2019, 19, 209.	0.3	1
11	Properties of invariant object recognition in human one-shot learning suggests a hierarchical architecture different from deep convolutional neural networks. Journal of Vision, 2019, 19, 28d.	0.3	0
12	A fast, invariant representation for human action in the visual system. Journal of Neurophysiology, 2018, 119, 631-640.	1.8	26
13	Invariant Recognition Shapes Neural Representations of Visual Input. Annual Review of Vision Science, 2018, 4, 403-422.	4.4	27
14	Do Deep Neural Networks Suffer from Crowding?. Journal of Vision, 2018, 18, 902.	0.3	2
15	Automated fault detection without seismic processing. The Leading Edge, 2017, 36, 208-214.	0.7	198
16	Why and when can deep-but not shallow-networks avoid the curse of dimensionality: A review. International Journal of Automation and Computing, 2017, 14, 503-519.	4.5	323
17	View-Tolerant Face Recognition and Hebbian Learning Imply Mirror-Symmetric Neural Tuning to Head Orientation. Current Biology, 2017, 27, 62-67.	3.9	47
18	Invariant recognition drives neural representations of action sequences. PLoS Computational Biology, 2017, 13, e1005859.	3.2	11

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19	Eccentricity Dependent Deep Neural Networks for Modeling Human Vision. Journal of Vision, 2017, 17, 808.	0.3	4
20	Turing++ Questions: A Test for the Science of (Human) Intelligence. AI Magazine, 2016, 37, 73-77.	1.6	2
21	IntroductionSpecial issue: Deep learning. Information and Inference, 2016, 5, 103-104.	1.6	0
22	On invariance and selectivity in representation learning. Information and Inference, 2016, 5, 134-158.	1.6	27
23	Unsupervised learning of invariant representations. Theoretical Computer Science, 2016, 633, 112-121.	0.9	74
24	Neural Tuning Size in a Model of Primate Visual Processing Accounts for Three Key Markers of Holistic Face Processing. PLoS ONE, 2016, 11, e0150980.	2.5	9
25	The Invariance Hypothesis Implies Domain-Specific Regions in Visual Cortex. PLoS Computational Biology, 2015, 11, e1004390.	3.2	22
26	Invariant representations for action recognition in the visual system. Journal of Vision, 2015, 15, 558.	0.3	1
27	The dynamics of invariant object recognition in the human visual system. Journal of Neurophysiology, 2014, 111, 91-102.	1.8	237
28	Machine Recognition of Objects. , 2014, , 469-472.		0
29	DONALD ARTHUR GLASER: 21 SEPTEMBER 1926 - 28 FEBRUARY 2013. Proceedings of the American Philosophical Society, 2014, 158, 311-5.	0.5	0
30	Donald Arthur Glaser (1926â€“2013). Nature, 2013, 496, 32-32.	27.8	1
31	Vision: are models of object recognition catching up with the brain?. Annals of the New York Academy of Sciences, 2013, 1305, 72-82.	3.8	26
32	On Learnability, Complexity and Stability. , 2013, , 59-69.		0
33	The <i>Levels of Understanding</i> Framework, Revised. Perception, 2012, 41, 1017-1023.	1.2	48
34	Learning and disrupting invariance in visual recognition with a temporal association rule. Frontiers in Computational Neuroscience, 2012, 6, 37.	2.1	29
35	Securities Trading of Concepts (STOC). Journal of Marketing Research, 2011, 48, 497-517.	4.8	34
36	Object decoding with attention in inferior temporal cortex. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 8850-8855.	7.1	150

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37	Mathematics of the Neural Response. Foundations of Computational Mathematics, 2010, 10, 67-91.	2.5	35
38	What and where: A Bayesian inference theory of attention. Vision Research, 2010, 50, 2233-2247.	1.4	168
39	Prefrontal Cortex Activity during Flexible Categorization. Journal of Neuroscience, 2010, 30, 8519-8528.	3.6	135
40	A neuromorphic approach to computer vision. Communications of the ACM, 2010, 53, 54-61.	4.5	60
41	Object Recognition Using Boosted Oriented Filter Based Local Descriptors. IEEJ Transactions on Electronics, Information and Systems, 2009, 129, 806-811.	0.2	0
42	A Contour-Based Moving Object Detection. IEEJ Transactions on Electronics, Information and Systems, 2009, 129, 812-817.	0.2	0
43	Dynamic Population Coding of Category Information in Inferior Temporal and Prefrontal Cortex. Journal of Neurophysiology, 2008, 100, 1407-1419.	1.8	343
44	A Canonical Neural Circuit for Cortical Nonlinear Operations. Neural Computation, 2008, 20, 1427-1451.	2.2	152
45	A Model of V4 Shape Selectivity and Invariance. Journal of Neurophysiology, 2007, 98, 1733-1750.	1.8	225
46	Trade-Off between Object Selectivity and Tolerance in Monkey Inferotemporal Cortex. Journal of Neuroscience, 2007, 27, 12292-12307.	3.6	141
47	A quantitative theory of immediate visual recognition. Progress in Brain Research, 2007, 165, 33-56.	1.4	168
48	Robust Object Recognition with Cortex-Like Mechanisms. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2007, 29, 411-426.	13.9	1,408
49	A feedforward architecture accounts for rapid categorization. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 6424-6429.	7.1	760
50	Object Selectivity of Local Field Potentials and Spikes in the Macaque Inferior Temporal Cortex. Neuron, 2006, 49, 433-445.	8.1	274
51	Learning theory: stability is sufficient for generalization and necessary and sufficient for consistency of empirical risk minimization. Advances in Computational Mathematics, 2006, 25, 161-193.	1.6	112
52	Fast Readout of Object Identity from Macaque Inferior Temporal Cortex. Science, 2005, 310, 863-866.	12.6	720
53	Identification and analysis of alternative splicing events conserved in human and mouse. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 2850-2855.	7.1	263
54	Intracellular Measurements of Spatial Integration and the MAX Operation in Complex Cells of the Cat Primary Visual Cortex. Journal of Neurophysiology, 2004, 92, 2704-2713.	1.8	116

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55	General conditions for predictivity in learning theory. Nature, 2004, 428, 419-422.	27.8	195
56	Generalization in vision and motor control. Nature, 2004, 431, 768-774.	27.8	340
57	Full-body person recognition system. Pattern Recognition, 2003, 36, 1997-2006.	8.1	104
58	Hierarchical classification and feature reduction for fast face detection with support vector machines. Pattern Recognition, 2003, 36, 2007-2017.	8.1	152
59	Face recognition: component-based versus global approaches. Computer Vision and Image Understanding, 2003, 91, 6-21.	4.7	327
60	An Analytical Method for Multiclass Molecular Cancer Classification. SIAM Review, 2003, 45, 706-723.	9.5	59
61	Neural mechanisms for the recognition of biological movements. Nature Reviews Neuroscience, 2003, 4, 179-192.	10.2	849
62	A Comparison of Primate Prefrontal and Inferior Temporal Cortices during Visual Categorization. Journal of Neuroscience, 2003, 23, 5235-5246.	3.6	464
63	Biophysiologically Plausible Implementations of the Maximum Operation. Neural Computation, 2002, 14, 2857-2881.	2.2	79
64	Trainable videorealistic speech animation. ACM Transactions on Graphics, 2002, 21, 388-398.	7.2	104
65	Last but Not Least. Perception, 2002, 31, 133-133.	1.2	51
66	Visual Categorization and the Primate Prefrontal Cortex: Neurophysiology and Behavior. Journal of Neurophysiology, 2002, 88, 929-941.	1.8	203
67	Neural mechanisms of object recognition. Current Opinion in Neurobiology, 2002, 12, 162-168.	4.2	319
68	Regularization and statistical learning theory for data analysis. Computational Statistics and Data Analysis, 2002, 38, 421-432.	1.2	56
69	Prediction of central nervous system embryonal tumour outcome based on gene expression. Nature, 2002, 415, 436-442.	27.8	2,154
70	Attentional Selection for Object Recognition â€" A Gentle Way. Lecture Notes in Computer Science, 2002, , 472-479.	1.3	136
71	Categorical Representation of Visual Stimuli in the Primate Prefrontal Cortex. Science, 2001, 291, 312-316.	12.6	983
72	Models of object recognition. Nature Neuroscience, 2000, 3, 1199-1204.	14.8	564

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73	Statistical Learning Theory: A Primer. International Journal of Computer Vision, 2000, 38, 9-13.	15.6	60
74	Morphable Models for the Analysis and Synthesis of Complex Motion Patterns. International Journal of Computer Vision, 2000, 38, 59-73.	15.6	117
75	Introduction: Learning and Vision at CBCL. International Journal of Computer Vision, 2000, 38, 5-7.	15.6	9
76	A Trainable System for Object Detection. International Journal of Computer Vision, 2000, 38, 15-33.	15.6	1,056
77	Visual Speech Synthesis by Morphing Visemes. International Journal of Computer Vision, 2000, 38, 45-57.	15.6	87
78	Regularization Networks and Support Vector Machines. Advances in Computational Mathematics, 2000, 13, 1-50.	1.6	850
79	Learning in brains and machines. Spatial Vision, 2000, 13, 287-296.	1.4	5
80	CBF: A New Framework for Object Categorization in Cortex. Lecture Notes in Computer Science, 2000, , 1-10.	1.3	8
81	GEM: A global electronic market system. Information Systems, 1999, 24, 495-518.	3.6	35
82	Hierarchical models of object recognition in cortex. Nature Neuroscience, 1999, 2, 1019-1025.	14.8	2,665
83	Predicting the visual world: silence is golden. Nature Neuroscience, 1999, 2, 9-10.	14.8	119
84	Are Cortical Models Really Bound by the â€œBinding Problemâ€?. Neuron, 1999, 24, 87-93.	8.1	160
85	Multidimensional Morphable Models: A Framework for Representing and Matching Object Classes. International Journal of Computer Vision, 1998, 29, 107-131.	15.6	101
86	A Sparse Representation for Function Approximation. Neural Computation, 1998, 10, 1445-1454.	2.2	72
87	Topâ€“down learning of low-level vision tasks. Current Biology, 1997, 7, 991-994.	3.9	35
88	Role of learning in three-dimensional form perception. Nature, 1996, 384, 460-463.	27.8	170
89	Shape representation in the inferior temporal cortex of monkeys. Current Biology, 1995, 5, 552-563.	3.9	919
90	Optical flow from 1-D correlation: Application to a simple time-to-crash detector. International Journal of Computer Vision, 1995, 14, 131-146.	15.6	40

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91	Regularization Theory and Neural Networks Architectures. Neural Computation, 1995, 7, 219-269.	2.2	1,105
92	A Nonparametric Approach to Pricing and Hedging Derivative Securities Via Learning Networks. Journal of Finance, 1994, 49, 851-889.	5.1	435
93	Stereopsis: some computational reflections. Spatial Vision, 1993, 7, 82.	1.4	0
94	Analog VLSI systems for image acquisition and fast early vision processing. International Journal of Computer Vision, 1992, 8, 217-230.	15.6	28
95	A project for an intelligent system: Vision and learning. International Journal of Quantum Chemistry, 1992, 42, 727-739.	2.0	23
96	Learning of visual modules from examples: A framework for understanding adaptive visual performance. CVGIP Image Understanding, 1992, 56, 22-30.	1.3	11
97	Models of object recognition. Current Opinion in Neurobiology, 1991, 1, 270-273.	4.2	17
98	Representation Properties of Networks: Kolmogorov's Theorem Is Irrelevant. Neural Computation, 1989, 1, 465-469.	2.2	99
99	Computing texture boundaries from images. Nature, 1988, 333, 364-367.	27.8	152
100	Computations in the vertebrate retina: gain enhancement, differentiation and motion discrimination. Trends in Neurosciences, 1986, 9, 204-211.	8.6	42
101	Scaling Theorems for Zero Crossings. IEEE Transactions on Pattern Analysis and Machine Intelligence, 1986, PAMI-8, 15-25.	13.9	493
102	On Edge Detection. IEEE Transactions on Pattern Analysis and Machine Intelligence, 1986, PAMI-8, 147-163.	13.9	783
103	Visual information: Do computers need attention?. Nature, 1986, 321, 651-652.	27.8	16
104	The biophysical properties of spines as a basis for their electrical function: a comment on Kawato & Tsukahara (1983). Journal of Theoretical Biology, 1985, 113, 225-229.	1.7	18
105	Computational vision and regularization theory. Nature, 1985, 317, 314-319.	27.8	1,382
106	A simple algorithm for solving the cable equation in dendritic trees of arbitrary geometry. Journal of Neuroscience Methods, 1985, 12, 303-315.	2.5	55
107	Vision by Man and Machine. Scientific American, 1984, 250, 106-116.	1.0	46
108	Figure-ground discrimination by relative movement in the visual system of the fly. Biological Cybernetics, 1983, 46, 1-30.	1.3	200

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109	Tracking and chasing in houseflies (Musca). Biological Cybernetics, 1982, 45, 123-130.	1.3	107
110	3-D Analysis of the Flight Trajectories of Flies (Drosophila melanogaster). Zeitschrift Fur Naturforschung - Section C Journal of Biosciences, 1980, 35, 811-815.	1.4	34
111	Figure-ground discrimination by relative movement in the visual system of the fly. Biological Cybernetics, 1979, 35, 81-100.	1.3	145
112	Visual control of orientation behaviour in the fly: Part I. A quantitative analysis. Quarterly Reviews of Biophysics, 1976, 9, 311-375.	5.7	414
113	Visual control of orientation behaviour in the fly: Part II. Towards the underlying neural interactions. Quarterly Reviews of Biophysics, 1976, 9, 377-438.	5.7	217
114	A special class of nonlinear interactions in the visual system of the fly. Biological Cybernetics, 1976, 21, 103-105.	1.3	12
115	The orientation of flies towards visual patterns: On the search for the underlying functional interactions. Biological Cybernetics, 1975, 19, 39-54.	1.3	31