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	Hierarchical models of object recognition in cortex. Nature Neuroscience, 1999, 2, 1019-1025.	14.8	2,665
2	Prediction of central nervous system embryonal tumour outcome based on gene expression. Nature, 2002, 415, 436-442.	27.8	2,154
3	Robust Object Recognition with Cortex-Like Mechanisms. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2007, 29, 411-426.	13.9	1,408
4	Computational vision and regularization theory. Nature, 1985, 317, 314-319.	27.8	1,382
5	Regularization Theory and Neural Networks Architectures. Neural Computation, 1995, 7, 219-269.	2.2	1,105
6	A Trainable System for Object Detection. International Journal of Computer Vision, 2000, 38, 15-33.	15.6	1,056
7	Categorical Representation of Visual Stimuli in the Primate Prefrontal Cortex. Science, 2001, 291, 312-316.	12.6	983
8	Shape representation in the inferior temporal cortex of monkeys. Current Biology, 1995, 5, 552-563.	3.9	919
9	Regularization Networks and Support Vector Machines. Advances in Computational Mathematics, 2000, 13, 1-50.	1.6	850
10	Neural mechanisms for the recognition of biological movements. Nature Reviews Neuroscience, 2003, 4, 179-192.	10.2	849
11	On Edge Detection. IEEE Transactions on Pattern Analysis and Machine Intelligence, 1986, PAMI-8, 147-163.	13.9	783
12	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
13	Fast Readout of Object Identity from Macaque Inferior Temporal Cortex. Science, 2005, 310, 863-866.	12.6	720
14	Models of object recognition. Nature Neuroscience, 2000, 3, 1199-1204.	14.8	564
15	Scaling Theorems for Zero Crossings. IEEE Transactions on Pattern Analysis and Machine Intelligence, 1986, PAMI-8, 15-25.	13.9	493
16	A Comparison of Primate Prefrontal and Inferior Temporal Cortices during Visual Categorization. Journal of Neuroscience, 2003, 23, 5235-5246.	3.6	464
17	A Nonparametric Approach to Pricing and Hedging Derivative Securities Via Learning Networks. Journal of Finance, 1994, 49, 851-889.	5.1	435
18	Visual control of orientation behaviour in the fly: Part I. A quantitative analysis. Quarterly Reviews of Biophysics, 1976, 9, 311-375.	5.7	414

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19	Dynamic Population Coding of Category Information in Inferior Temporal and Prefrontal Cortex. Journal of Neurophysiology, 2008, 100, 1407-1419.	1.8	343
20	Generalization in vision and motor control. Nature, 2004, 431, 768-774.	27.8	340
21	Face recognition: component-based versus global approaches. Computer Vision and Image Understanding, 2003, 91, 6-21.	4.7	327
22	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
23	Neural mechanisms of object recognition. Current Opinion in Neurobiology, 2002, 12, 162-168.	4.2	319
24	Object Selectivity of Local Field Potentials and Spikes in the Macaque Inferior Temporal Cortex. Neuron, 2006, 49, 433-445.	8.1	274
25	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
26	The dynamics of invariant object recognition in the human visual system. Journal of Neurophysiology, 2014, 111, 91-102.	1.8	237
27	A Model of V4 Shape Selectivity and Invariance. Journal of Neurophysiology, 2007, 98, 1733-1750.	1.8	225
28	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
29	Visual Categorization and the Primate Prefrontal Cortex: Neurophysiology and Behavior. Journal of Neurophysiology, 2002, 88, 929-941.	1.8	203
30	Figure-ground discrimination by relative movement in the visual system of the fly. Biological Cybernetics, 1983, 46, 1-30.	1.3	200
31	Automated fault detection without seismic processing. The Leading Edge, 2017, 36, 208-214.	0.7	198
32	General conditions for predictivity in learning theory. Nature, 2004, 428, 419-422.	27.8	195
33	Role of learning in three-dimensional form perception. Nature, 1996, 384, 460-463.	27.8	170
34	A quantitative theory of immediate visual recognition. Progress in Brain Research, 2007, 165, 33-56.	1.4	168
35	What and where: A Bayesian inference theory of attention. Vision Research, 2010, 50, 2233-2247.	1.4	168
36	Are Cortical Models Really Bound by the â€œBinding Problemâ€?. Neuron, 1999, 24, 87-93.	8.1	160

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37	Computing texture boundaries from images. Nature, 1988, 333, 364-367.	27.8	152
38	Hierarchical classification and feature reduction for fast face detection with support vector machines. Pattern Recognition, 2003, 36, 2007-2017.	8.1	152
39	A Canonical Neural Circuit for Cortical Nonlinear Operations. Neural Computation, 2008, 20, 1427-1451.	2.2	152
40	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
41	Figure-ground discrimination by relative movement in the visual system of the fly. Biological Cybernetics, 1979, 35, 81-100.	1.3	145
42	Trade-Off between Object Selectivity and Tolerance in Monkey Inferotemporal Cortex. Journal of Neuroscience, 2007, 27, 12292-12307.	3.6	141
43	Attentional Selection for Object Recognition â€" A Gentle Way. Lecture Notes in Computer Science, 2002, , 472-479.	1.3	136
44	Prefrontal Cortex Activity during Flexible Categorization. Journal of Neuroscience, 2010, 30, 8519-8528.	3.6	135
45	Predicting the visual world: silence is golden. Nature Neuroscience, 1999, 2, 9-10.	14.8	119
46	Morphable Models for the Analysis and Synthesis of Complex Motion Patterns. International Journal of Computer Vision, 2000, 38, 59-73.	15.6	117
47	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
48	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
49	Tracking and chasing in houseflies (Musca). Biological Cybernetics, 1982, 45, 123-130.	1.3	107
50	Trainable videorealistic speech animation. ACM Transactions on Graphics, 2002, 21, 388-398.	7.2	104
51	Full-body person recognition system. Pattern Recognition, 2003, 36, 1997-2006.	8.1	104
52	Multidimensional Morphable Models: A Framework for Representing and Matching Object Classes. International Journal of Computer Vision, 1998, 29, 107-131.	15.6	101
53	Representation Properties of Networks: Kolmogorov's Theorem Is Irrelevant. Neural Computation, 1989, 1, 465-469.	2.2	99
54	Visual Speech Synthesis by Morphing Visemes. International Journal of Computer Vision, 2000, 38, 45-57.	15.6	87

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55	Biophysiologically Plausible Implementations of the Maximum Operation. Neural Computation, 2002, 14, 2857-2881.	2.2	79
56	Unsupervised learning of invariant representations. Theoretical Computer Science, 2016, 633, 112-121.	0.9	74
57	A Sparse Representation for Function Approximation. Neural Computation, 1998, 10, 1445-1454.	2.2	72
58	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
59	Deep Learning for Seismic Inverse Problems: Toward the Acceleration of Geophysical Analysis Workflows. IEEE Signal Processing Magazine, 2021, 38, 89-119.	5.6	65
60	Statistical Learning Theory: A Primer. International Journal of Computer Vision, 2000, 38, 9-13.	15.6	60
61	A neuromorphic approach to computer vision. Communications of the ACM, 2010, 53, 54-61.	4.5	60
62	An Analytical Method for Multiclass Molecular Cancer Classification. SIAM Review, 2003, 45, 706-723.	9.5	59
63	Regularization and statistical learning theory for data analysis. Computational Statistics and Data Analysis, 2002, 38, 421-432.	1.2	56
64	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
65	Last but Not Least. Perception, 2002, 31, 133-133.	1.2	51
66	The <i>Levels of Understanding</i> Framework, Revised. Perception, 2012, 41, 1017-1023.	1.2	48
67	View-Tolerant Face Recognition and Hebbian Learning Imply Mirror-Symmetric Neural Tuning to Head Orientation. Current Biology, 2017, 27, 62-67.	3.9	47
68	Vision by Man and Machine. Scientific American, 1984, 250, 106-116.	1.0	46
69	Computations in the vertebrate retina: gain enhancement, differentiation and motion discrimination. Trends in Neurosciences, 1986, 9, 204-211.	8.6	42
70	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
71	Topâ€“down learning of low-level vision tasks. Current Biology, 1997, 7, 991-994.	3.9	35
72	GEM: A global electronic market system. Information Systems, 1999, 24, 495-518.	3.6	35

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73	Mathematics of the Neural Response. Foundations of Computational Mathematics, 2010, 10, 67-91.	2.5	35
74	Securities Trading of Concepts (STOC). Journal of Marketing Research, 2011, 48, 497-517.	4.8	34
75	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
76	The orientation of flies towards visual patterns: On the search for the underlying functional interactions. Biological Cybernetics, 1975, 19, 39-54.	1.3	31
77	Learning and disrupting invariance in visual recognition with a temporal association rule. Frontiers in Computational Neuroscience, 2012, 6, 37.	2.1	29
78	Analog VLSI systems for image acquisition and fast early vision processing. International Journal of Computer Vision, 1992, 8, 217-230.	15.6	28
79	On invariance and selectivity in representation learning. Information and Inference, 2016, 5, 134-158.	1.6	27
80	Invariant Recognition Shapes Neural Representations of Visual Input. Annual Review of Vision Science, 2018, 4, 403-422.	4.4	27
81	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
82	A fast, invariant representation for human action in the visual system. Journal of Neurophysiology, 2018, 119, 631-640.	1.8	26
83	A project for an intelligent system: Vision and learning. International Journal of Quantum Chemistry, 1992, 42, 727-739.	2.0	23
84	The Invariance Hypothesis Implies Domain-Specific Regions in Visual Cortex. PLoS Computational Biology, 2015, 11, e1004390.	3.2	22
85	Scale and translation-invariance for novel objects in human vision. Scientific Reports, 2020, 10, 1411.	3.3	21
86	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
87	Models of object recognition. Current Opinion in Neurobiology, 1991, 1, 270-273.	4.2	17
88	Visual information: Do computers need attention?. Nature, 1986, 321, 651-652.	27.8	16
89	Complexity control by gradient descent in deep networks. Nature Communications, 2020, 11, 1027.	12.8	14
90	Symmetry-adapted representation learning. Pattern Recognition, 2019, 86, 201-208.	8.1	13

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91	A special class of nonlinear interactions in the visual system of the fly. Biological Cybernetics, 1976, 21, 103-105.	1.3	12
92	Learning of visual modules from examples: A framework for understanding adaptive visual performance. CVGIP Image Understanding, 1992, 56, 22-30.	1.3	11
93	Invariant recognition drives neural representations of action sequences. PLoS Computational Biology, 2017, 13, e1005859.	3.2	11
94	Introduction: Learning and Vision at CBCL. International Journal of Computer Vision, 2000, 38, 5-7.	15.6	9
95	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
96	CBF: A New Framework for Object Categorization in Cortex. Lecture Notes in Computer Science, 2000, , 1-10.	1.3	8
97	Learning in brains and machines. Spatial Vision, 2000, 13, 287-296.	1.4	5
98	Eccentricity Dependent Deep Neural Networks for Modeling Human Vision. Journal of Vision, 2017, 17, 808.	0.3	4
99	Turing++ Questions: A Test for the Science of (Human) Intelligence. AI Magazine, 2016, 37, 73-77.	1.6	2
100	Do Deep Neural Networks Suffer from Crowding?. Journal of Vision, 2018, 18, 902.	0.3	2
101	Donald Arthur Glaser (1926â€“2013). Nature, 2013, 496, 32-32.	27.8	1
102	Invariant representations for action recognition in the visual system. Journal of Vision, 2015, 15, 558.	0.3	1
103	Eccentricity Dependent Neural Network with Recurrent Attention for Scale, Translation and Clutter Invariance. Journal of Vision, 2019, 19, 209.	0.3	1
104	Stereopsis: some computational reflections. Spatial Vision, 1993, 7, 82.	1.4	0
105	IntroductionSpecial issue: Deep learning. Information and Inference, 2016, 5, 103-104.	1.6	0
106	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
107	Biologically plausible illumination-invariant face representations. Journal of Vision, 2021, 21, 2232.	0.3	0
108	Quantifying Adversarial Sensitivity of a Model as a Function of the Image Distribution. Journal of Vision, 2021, 21, 2841.	0.3	0

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109	Machine Recognition of Objects. , 2021, , 781-784.		0
110	Object Recognition Using Boosted Oriented Filter Based Local Descriptors. IEEJ Transactions on Electronics, Information and Systems, 2009, 129, 806-811.	0.2	0
111	A Contour-Based Moving Object Detection. IEEJ Transactions on Electronics, Information and Systems, 2009, 129, 812-817.	0.2	0
112	On Learnability, Complexity and Stability. , 2013, , 59-69.		0
113	Machine Recognition of Objects. , 2014, , 469-472.		0
114	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
115	DONALD ARTHUR GLASER: 21 SEPTEMBER 1926 - 28 FEBRUARY 2013. Proceedings of the American Philosophical Society, 2014, 158, 311-5.	0.5	0