

# Laurent Itti

## List of Publications by Year in descending order

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111  
papers

15,752  
citations

71102

41  
h-index

85541

71  
g-index

111  
all docs

111  
docs citations

111  
times ranked

9408  
citing authors

#	ARTICLE	IF	CITATIONS
1	Computational modelling of visual attention. <i>Nature Reviews Neuroscience</i> , 2001, 2, 194-203.	10.2	3,766
2	A saliency-based search mechanism for overt and covert shifts of visual attention. <i>Vision Research</i> , 2000, 40, 1489-1506.	1.4	2,623
3	Bayesian surprise attracts human attention. <i>Vision Research</i> , 2009, 49, 1295-1306.	1.4	850
4	Automatic Foveation for Video Compression Using a Neurobiological Model of Visual Attention. <i>IEEE Transactions on Image Processing</i> , 2004, 13, 1304-1318.	9.8	637
5	Components of bottom-up gaze allocation in natural images. <i>Vision Research</i> , 2005, 45, 2397-2416.	1.4	591
6	Modeling the influence of task on attention. <i>Vision Research</i> , 2005, 45, 205-231.	1.4	543
7	Rapid Biologically-Inspired Scene Classification Using Features Shared with Visual Attention. <i>IEEE Transactions on Pattern Analysis and Machine Intelligence</i> , 2007, 29, 300-312.	13.9	467
8	Feature combination strategies for saliency-based visual attention systems. <i>Journal of Electronic Imaging</i> , 2001, 10, 161.	0.9	375
9	Mechanisms of top-down attention. <i>Trends in Neurosciences</i> , 2011, 34, 210-224.	8.6	364
10	Search Goal Tunes Visual Features Optimally. <i>Neuron</i> , 2007, 53, 605-617.	8.1	279
11	Quantifying the contribution of low-level saliency to human eye movements in dynamic scenes. <i>Visual Cognition</i> , 2005, 12, 1093-1123.	1.6	263
12	Exploiting local and global patch rarities for saliency detection. , 2012, , .		259
13	Salient Object Detection: A Benchmark. <i>Lecture Notes in Computer Science</i> , 2012, , 414-429.	1.3	241
14	Of bits and wows: A Bayesian theory of surprise with applications to attention. <i>Neural Networks</i> , 2010, 23, 649-666.	5.9	223
15	Visual causes versus correlates of attentional selection in dynamic scenes. <i>Vision Research</i> , 2006, 46, 4333-4345.	1.4	197
16	Biologically Inspired Mobile Robot Vision Localization. <i>IEEE Transactions on Robotics</i> , 2009, 25, 861-873.	10.3	191
17	Visual attention guided bit allocation in video compression. <i>Image and Vision Computing</i> , 2011, 29, 1-14.	4.5	191
18	Defending Yarbus: Eye movements reveal observers' task. <i>Journal of Vision</i> , 2014, 14, 29-29.	0.3	180

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19	Saliency and Gist Features for Target Detection in Satellite Images. IEEE Transactions on Image Processing, 2011, 20, 2017-2029.	9.8	167
20	Beyond bottom-up: Incorporating task-dependent influences into a computational model of spatial attention. , 2007, , .		165
21	Analysis of Scores, Datasets, and Models in Visual Saliency Prediction. , 2013, , .		146
22	Realistic avatar eye and head animation using a neurobiological model of visual attention. , 2004, , .		141
23	Attentional Selection for Object Recognition " A Gentle Way. Lecture Notes in Computer Science, 2002, , 472-479.	1.3	136
24	shapeDTW: Shape Dynamic Time Warping. Pattern Recognition, 2018, 74, 171-184.	8.1	134
25	Superior colliculus neurons encode a visual saliency map during free viewing of natural dynamic video. Nature Communications, 2017, 8, 14263.	12.8	127
26	High-throughput classification of clinical populations from natural viewing eye movements. Journal of Neurology, 2013, 260, 275-284.	3.6	123
27	What stands out in a scene? A study of human explicit saliency judgment. Vision Research, 2013, 91, 62-77.	1.4	120
28	Adaptive object tracking by learning background context. , 2012, , .		113
29	Superior colliculus encodes visual saliency before the primary visual cortex. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 9451-9456.	7.1	102
30	A Bayesian model for efficient visual search and recognition. Vision Research, 2010, 50, 1338-1352.	1.4	98
31	Color-Related Signals in the Primate Superior Colliculus. Journal of Neuroscience, 2009, 29, 12159-12166.	3.6	91
32	Linking visual response properties in the superior colliculus to saccade behavior. European Journal of Neuroscience, 2012, 35, 1738-1752.	2.6	87
33	Transient Pupil Response Is Modulated by Contrast-Based Saliency. Journal of Neuroscience, 2014, 34, 408-417.	3.6	83
34	Effect of ecstasy [3,4-methylenedioxymethamphetamine (MDMA)] on cerebral blood flow: a co-registered SPECT and MRI study. Psychiatry Research - Neuroimaging, 2000, 98, 15-28.	1.8	81
35	What/Where to Look Next? Modeling Top-Down Visual Attention in Complex Interactive Environments. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2014, 44, 523-538.	9.3	80
36	Revisiting spatial vision: toward a unifying model. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2000, 17, 1899.	1.5	79

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37	Quantitative modelling of perceptual salience at human eye position. <i>Visual Cognition</i> , 2006, 14, 959-984.	1.6	79
38	A Goal Oriented Attention Guidance Model. <i>Lecture Notes in Computer Science</i> , 2002, , 453-461.	1.3	66
39	The role of memory in guiding attention during natural vision. <i>Journal of Vision</i> , 2006, 6, 4.	0.3	64
40	Residual Attention Guidance in Blindsight Monkeys Watching Complex Natural Scenes. <i>Current Biology</i> , 2012, 22, 1429-1434.	3.9	57
41	Finding planes in LiDAR point clouds for real-time registration. , 2013, , .		53
42	Visual adaptation and novelty responses in the superior colliculus. <i>European Journal of Neuroscience</i> , 2011, 34, 766-779.	2.6	51
43	Evidence for Arousal-Biased Competition in Perceptual Learning. <i>Frontiers in Psychology</i> , 2012, 3, 241.	2.1	50
44	Learning a Combined Model of Visual Saliency for Fixation Prediction. <i>IEEE Transactions on Image Processing</i> , 2016, 25, 1566-1579.	9.8	50
45	Changes in cerebral metabolism are detected prior to perfusion changes in early HIV-CMC: A coregistered 1H MRS and SPECT study. <i>Journal of Magnetic Resonance Imaging</i> , 2000, 12, 859-865.	3.4	48
46	Robust multimodality registration for brain mapping. , 1997, 5, 3-17.		47
47	Complementary effects of gaze direction and early saliency in guiding fixations during free viewing. <i>Journal of Vision</i> , 2014, 14, 3-3.	0.3	45
48	New Eye-Tracking Techniques May Revolutionize Mental Health Screening. <i>Neuron</i> , 2015, 88, 442-444.	8.1	42
49	Top-down influences on visual attention during listening are modulated by observer sex. <i>Vision Research</i> , 2012, 65, 62-76.	1.4	38
50	Correlation of regional cerebral blood flow from perfusion MRI and SPECT in normal subjects. <i>Magnetic Resonance Imaging</i> , 1999, 17, 349-354.	1.8	37
51	Biologically-inspired robotics vision monte-carlo localization in the outdoor environment. , 2007, , .		35
52	Augmented saliency model using automatic 3D head pose detection and learned gaze following in natural scenes. <i>Vision Research</i> , 2015, 116, 113-126.	1.4	35
53	Computational modeling and exploration of contour integration for visual saliency. <i>Biological Cybernetics</i> , 2005, 93, 188-212.	1.3	32
54	Scene classification with a sparse set of salient regions. , 2011, , .		32

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55	Mobile robot monocular vision navigation based on road region and boundary estimation. , 2012, , .		32
56	Mobile robot vision navigation & localization using Gist and Saliency. , 2010, , .		31
57	Classifying Time Series Using Local Descriptors with Hybrid Sampling. IEEE Transactions on Knowledge and Data Engineering, 2016, 28, 623-637.	5.7	31
58	Efficient Velodyne SLAM with point and plane features. Autonomous Robots, 2019, 43, 1207-1224.	4.8	31
59	iLab-20M: A Large-Scale Controlled Object Dataset to Investigate Deep Learning. , 2016, , .		29
60	Human vs. Computer in Scene and Object Recognition. , 2014, , .		27
61	Detection of Children/Youth With Fetal Alcohol Spectrum Disorder Through Eye Movement, Psychometric, and Neuroimaging Data. Frontiers in Neurology, 2019, 10, 80.	2.4	26
62	Segmentation of Progressive Multifocal Leukoencephalopathy Lesions in Fluid-Attenuated Inversion Recovery Magnetic Resonance Imaging. Journal of Neuroimaging, 2001, 11, 412-417.	2.0	22
63	Mobile robot navigation system in outdoor pedestrian environment using vision-based road recognition. , 2013, , .		22
64	Attention and the minimal subscene. , 2006, , 289-346.		19
65	Attention and Scene Understanding. , 2005, , 197-203.		19
66	A Brief and Selective History of Attention. , 2005, , xxiii-xxxii.		17
67	Photorealistic Attention-Based Gaze Animation. , 2006, , .		17
68	Superior colliculus encodes visual saliency during smooth pursuit eye movements. European Journal of Neuroscience, 2021, 54, 4258-4268.	2.6	17
69	Training Top-Down Attention Improves Performance on a Triple-Conjunction Search Task. PLoS ONE, 2010, 5, e9127.	2.5	16
70	Multi-Scale Adversarial Feature Learning for Saliency Detection. Symmetry, 2018, 10, 457.	2.2	16
71	Multilayer real-time video image stabilization. , 2011, , .		15
72	Vision-Based Autonomous Path Following Using a Human Driver Control Model With Reliable Input-Feature Value Estimation. IEEE Transactions on Intelligent Vehicles, 2019, 4, 497-506.	12.7	15

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73	Rapid adaptation of brain-computer interfaces to new neuronal ensembles or participants via generative modelling. <i>Nature Biomedical Engineering</i> , 2023, 7, 546-558.	22.5	15
74	Autonomous Mobile Robot Localization and Navigation Using a Hierarchical Map Representation Primarily Guided by Vision. <i>Journal of Field Robotics</i> , 2014, 31, 408-440.	6.0	12
75	Automatic computation of an image's statistical surprise predicts performance of human observers on a natural image detection task. <i>Vision Research</i> , 2009, 49, 1620-1637.	1.4	11
76	Modelling Primate Visual Attention. <i>Chapman &amp; Hall/CRC Mathematical and Computational Biology Series</i> , 2003, , .	0.1	11
77	Biologically plausible learning in neural networks with modulatory feedback. <i>Neural Networks</i> , 2017, 88, 32-48.	5.9	10
78	Beobot 2.0: Cluster architecture for mobile robotics. <i>Journal of Field Robotics</i> , 2011, 28, 278-302.	6.0	9
79	Optimal attentional modulation of a neural population. <i>Frontiers in Computational Neuroscience</i> , 2014, 8, 34.	2.1	9
80	Inertial Machine Monitoring System for Automated Failure Detection. , 2018, , .		9
81	Learning visual variation for object recognition. <i>Image and Vision Computing</i> , 2020, 98, 103912.	4.5	8
82	Storing and recalling information for vision localization. , 2008, , .		7
83	Image salient object detection with refined deep features via convolution neural network. <i>Journal of Electronic Imaging</i> , 2017, 26, 1.	0.9	7
84	Attention-aware rendering, mobile graphics and games. , 2014, , .		6
85	Eye tracking identifies biomarkers in $\alpha$ -synucleinopathies versus progressive supranuclear palsy. <i>Journal of Neurology</i> , 2022, 269, 4920-4938.	3.6	6
86	Multi-scale pulmonary nodule classification with deep feature fusion via residual network. <i>Journal of Ambient Intelligence and Humanized Computing</i> , 2023, 14, 14829-14840.	4.9	5
87	Biologically inspired feature-based categorization of objects. , 2004, , .		4
88	Distributed biologically based real time tracking in the absence of prior target information. , 2005, , .		4
89	Combining bottom-up and top-down attentional influences. , 2006, , .		4
90	Feature-based attention is independent of object appearance. <i>Journal of Vision</i> , 2014, 14, 3-3.	0.3	4

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91	A New Robotics Platform for Neuromorphic Vision: Beobots. Lecture Notes in Computer Science, 2002, , 558-566.	1.3	4
92	Pose Augmentation: Class-Agnostic Object Pose Transformation for Object Recognition. Lecture Notes in Computer Science, 2020, , 138-155.	1.3	4
93	Mining Videos for Features that Drive Attention. , 2015, , 311-326.		3
94	Learning to Recognize Objects by Retaining Other Factors of Variation. , 2017, , .		3
95	Utilization and viability of biologically-inspired algorithms in a dynamic multiagent camera surveillance system. , 2003, , .		2
96	<title>Teaching the computer subjective notions of feature connectedness in a visual scene for real-time vision</title>. , 2004, , .		2
97	Modeling the influence of action on spatial attention in visual interactive environments. , 2012, , .		2
98	Influence of the amount of context learned for improving object classification when simultaneously learning object and contextual cues. Visual Cognition, 2012, 20, 580-602.	1.6	2
99	Saliency prediction based on new deep multi-layer convolution neural network. , 2017, , .		2
100	Capturing spike train temporal pattern with wavelet average coefficient for brain machine interface. Scientific Reports, 2021, 11, 19020.	3.3	2
101	Deep Learning on Natural Viewing Behaviors to Differentiate Children with Fetal Alcohol Spectrum Disorder. Lecture Notes in Computer Science, 2013, , 178-185.	1.3	2
102	Pupillary responses to differences in luminance, color and set size. Experimental Brain Research, 2022, 240, 1873-1885.	1.5	2
103	Centralized server environment for educational robotics. , 2009, , .		1
104	Saliency mapping enhanced by symmetry from local phase. , 2012, , .		1
105	Neuromorphic Bayesian Surprise for Far-Range Event Detection. , 2012, , .		1
106	Integrating human context and occlusion reasoning to improve handheld object tracking. , 2014, , .		1
107	Learning Invariant Features in Modulatory Networks through Conflict and Ambiguity. Neural Computation, 2019, 31, 344-387.	2.2	1
108	Until the demise of the functional field of view. Behavioral and Brain Sciences, 2017, 40, e140.	0.7	0

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109	Impact of Neuroscience in Robotic Vision Localization and Navigation. Cognitive Science and Technology, 2017, , 235-276.	0.4	0
110	Laminar organization of the superior colliculus priority map. Journal of Vision, 2019, 19, 133a.	0.3	0
111	Multilayer control of skiing robot. , 2011, , .		0