Jean-Michel Morel

List of Publications by Year
in descending order

158 papers	13,922 citations	101384 36 h-index	40881 93 g-index
162 all docs	162 docs citations	162 times ranked	9434 citing authors

#	Article	IF	Citations
1	A Review of Image Denoising Algorithms, with a New One. Multiscale Modeling and Simulation, 2005, 4, 490-530.	0.6	3,516
2	LSD: A Fast Line Segment Detector with a False Detection Control. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2010, 32, 722-732.	9.7	1,366
3	ASIFT: A New Framework for Fully Affine Invariant Image Comparison. SIAM Journal on Imaging Sciences, 2009, 2, 438-469.	1.3	1,215
4	Nonlocal Image and Movie Denoising. International Journal of Computer Vision, 2008, 76, 123-139.	10.9	640
5	Non-Local Means Denoising. Image Processing on Line, 0, 1, 208-212.	0.0	616
6	LSD: a Line Segment Detector. Image Processing on Line, 0, 2, 35-55.	0.0	577
7	Image Denoising Methods. A New Nonlocal Principle. SIAM Review, 2010, 52, 113-147.	4.2	358
8	Meaningful Alignments. International Journal of Computer Vision, 2000, 40, 7-23.	10.9	271
9	An axiomatic approach to image interpolation. IEEE Transactions on Image Processing, 1998, 7, 376-386.	6.0	263
10	A Nonlocal Bayesian Image Denoising Algorithm. SIAM Journal on Imaging Sciences, 2013, 6, 1665-1688.	1.3	238
11	Multiscale Retinex. Image Processing on Line, 0, 4, 71-88.	0.0	230
12	ASIFT: An Algorithm for Fully Affine Invariant Comparison. Image Processing on Line, 0, 1, 11-38.	0.0	223
13	Secrets of image denoising cuisine. Acta Numerica, 2012, 21, 475-576.	6.3	206
14	From Gestalt Theory to Image Analysis. Interdisciplinary Applied Mathematics, 2008, , .	0.2	204
15	The staircasing effect in neighborhood filters and its solution. IEEE Transactions on Image Processing, 2006, 15, 1499-1505.	6.0	187
16	Fast Cartoon + Texture Image Filters. IEEE Transactions on Image Processing, 2010, 19, 1978-1986.	6.0	172
17	A PDE Formalization of Retinex Theory. IEEE Transactions on Image Processing, 2010, 19, 2825-2837.	6.0	160
18	Edge Detection by Helmholtz Principle. Journal of Mathematical Imaging and Vision, 2001, 14, 271-284.	0.8	141

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19	Topographic Maps and Local Contrast Changes in Natural Images. International Journal of Computer Vision, 1999, 33, 5-27.	10.9	136
20	The Noise Clinic: a Blind Image Denoising Algorithm. Image Processing on Line, 0, 5, 1-54.	0.0	120
21	Neighborhood filters and PDEâ€™s. Numerische Mathematik, 2006, 105, 1-34.	0.9	119
22	A grouping principle and four applications. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2003, 25, 508-513.	9.7	117
23	Random Phase Textures: Theory and Synthesis. IEEE Transactions on Image Processing, 2011, 20, 257-267.	6.0	115
24	Self-Similarity Driven Color Demosaicking. IEEE Transactions on Image Processing, 2009, 18, 1192-1202.	6.0	113
25	Connected components of sets of finite perimeter and applications to image processing. Journal of the European Mathematical Society, 2001, 3, 39-92.	0.7	107
26	A fully affine invariant image comparison method. , 2009, , .		96
27	Simplest Color Balance. Image Processing on Line, 0, 1, 297-315.	0.0	81
28	Are Natural Images of Bounded Variation?. SIAM Journal on Mathematical Analysis, 2001, 33, 634-648.	0.9	79
29	On Straight Line Segment Detection. Journal of Mathematical Imaging and Vision, 2008, 32, 313-347.	0.8	79
30	Multiscale Image Blind Denoising. IEEE Transactions on Image Processing, 2015, 24, 3149-3161.	6.0	75
31	A Precision Analysis of Camera Distortion Models. IEEE Transactions on Image Processing, 2017, 26, 2694-2704.	6.0	74
32	A variational model of irrigation patterns. Interfaces and Free Boundaries, 2003, 5, 391-416.	0.2	67
33	Implementation of the "Non-Local Bayes" (NL-Bayes) Image Denoising Algorithm. Image Processing on Line, 0, 3, 1-42.	0.0	65
34	Finding Vanishing Points via Point Alignments in Image Primal and Dual Domains. , 2014, , .		57
35	Geometry and Color in Natural Images. Journal of Mathematical Imaging and Vision, 2002, 16, 89-105.	0.8	56
36	An A Contrario Decision Method for Shape Element Recognition. International Journal of Computer Vision, 2006, 69, 295-315.	10.9	56

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37	Video Denoising via Empirical Bayesian Estimation of Space-Time Patches. Journal of Mathematical Imaging and Vision, 2018, 60, 70-93.	0.8	55
38	Computational gestalts and perception thresholds. Journal of Physiology (Paris), 2003, 97, 311-324.	2.1	54
39	Model-Blind Video Denoising via Frame-To-Frame Training. , 2019, , .		54
40	A Theory of Shape Identification. Lecture Notes in Mathematics, 2008, , .	0.1	52
41	Is SIFT scale invariant?. Inverse Problems and Imaging, 2011, 5, 115-136.	0.6	51
42	Scale Space Meshing of Raw Data Point Sets. Computer Graphics Forum, 2011, 30, 1630-1642.	1.8	50
43	Maximal meaningful events and applications to image analysis. Annals of Statistics, 2003, 31, 1822.	1.4	48
44	Gestalt Theory and Computer Vision. , 2004, , 71-101.		48
45	Screened Poisson Equation for Image Contrast Enhancement. Image Processing on Line, 0, 4, 16-29.	0.0	48
46	A Non-Local CNN for Video Denoising. , 2019, , .		45
47	Boosting monte carlo rendering by ray histogram fusion. ACM Transactions on Graphics, 2014, 33, 1-15.	4.9	45
48	The Size of Objects in Natural and Artificial Images. Advances in Imaging and Electron Physics, 1999, , 167-242.	0.1	42
49	An L<inf>1</inf>-based variational model for Retinex theory and its application to medical images. , 2011, , .		39
50	SURE Guided Gaussian Mixture Image Denoising. SIAM Journal on Imaging Sciences, 2013, 6, 999-1034.	1.3	39
51	Meaningful Matches in Stereovision. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2012, 34, 930-942.	9.7	38
52	The Non-parametric Sub-pixel Local Point Spread Function Estimation Is a Well Posed Problem. International Journal of Computer Vision, 2012, 96, 175-194.	10.9	34
53	Fourier implementation of Poisson image editing. Pattern Recognition Letters, 2012, 33, 342-348.	2.6	33
54	Image Anomalies: A Review and Synthesis of Detection Methods. Journal of Mathematical Imaging and Vision, 2019, 61, 710-743.	0.8	32

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55	Nonparametric noise estimation method for raw images. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2014, 31, 863.	0.8	31
56	Self-similarity-based image denoising. Communications of the ACM, 2011, 54, 109-117.	3.3	30
57	Micro-Texture Synthesis by Phase Randomization. Image Processing on Line, 0, 1, 213-237.	0.0	30
58	Retinex Poisson Equation: a Model for Color Perception. Image Processing on Line, 0, 1, 39-50.	0.0	30
59	A Note on Two Classical Enhancement Filters and Their Associated PDE's. International Journal of Computer Vision, 2003, 52, 153-160.	10.9	29
60	On the Theory of Planar Shape. Multiscale Modeling and Simulation, 2003, 1, 1-24.	0.6	28
61	How Accurate Can Block Matches Be in Stereo Vision?. SIAM Journal on Imaging Sciences, 2011, 4, 472-500.	1.3	26
62	Can a Single Image Denoising Neural Network Handle All Levels of Gaussian Noise?. IEEE Signal Processing Letters, 2014, 21, 1150-1153.	2.1	23
63	A Contrario 2D Point Alignment Detection. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2015, 37, 499-512.	9.7	23
64	Dequantizing image orientation. IEEE Transactions on Image Processing, 2002, 11, 1129-1140.	6.0	22
65	Fast implementation of color constancy algorithms. , 2009, , .		22
66	Three-step image rectification. , 2010, , .		22
67	An Adaptive Neural Network for Unsupervised Mosaic Consistency Analysis in Image Forensics. , 2020, , .		20
68	Nonparametric Multiscale Blind Estimation of Intensity-Frequency-Dependent Noise. IEEE Transactions on Image Processing, 2015, 24, 3162-3175.	6.0	19
69	An Inquiry on Contrast Enhancement Methods for Satellite Images. IEEE Transactions on Geoscience and Remote Sensing, 2016, 54, 7044-7054.	2.7	18
70	Computing the daily reproduction number of COVID-19 by inverting the renewal equation using a variational technique. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	18
71	Photographing Paintings by Image Fusion. SIAM Journal on Imaging Sciences, 2012, 5, 1055-1087.	1.3	17
72	The Flutter Shutter Paradox. SIAM Journal on Imaging Sciences, 2013, 6, 813-847.	1.3	17

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73	High-precision camera distortion measurements with a "calibration harp". Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2012, 29, 2134.	0.8	16
74	SMOS-HR: A High Resolution L-Band Passive Radiometer for Earth Science and Applications. , 2019, , .		16
75	Self-similarity Driven Demosaicking. Image Processing on Line, 0, 1, 51-56.	0.0	16
76	Forgery Detection in Digital Images by Multi-Scale Noise Estimation. Journal of Imaging, 2021, 7, 119.	1.7	14
77	The IPOL Initiative: Publishing and Testing Algorithms on Line for Reproducible Research in Image Processing. Procedia Computer Science, 2011, 4, 716-725.	1.2	13
78	Monocular Depth by Nonlinear Diffusion. , 2008, , .		12
79	A Conditional Multiscale Locally Gaussian Texture Synthesis Algorithm. Journal of Mathematical Imaging and Vision, 2016, 56, 260-279.	0.8	12
80	A Review of an Old Dilemma: Demosaicking First, or Denoising First?. , 2020, , .		12
81	An Extended Exposure Fusion and its Application to Single Image Contrast Enhancement. , 2020, , .		12
82	Fattening Free Block Matching. Journal of Mathematical Imaging and Vision, 2011, 41, 109-121.	0.8	11
83	Subpixel Point Spread Function Estimation from Two Photographs at Different Distances. SIAM Journal on Imaging Sciences, 2012, 5, 1234-1260.	1.3	11
84	IPOL: A new journal for fully reproducible research; analysis of four years development. , 2015, , .		11
85	Reducing Anomaly Detection in Images to Detection in Noise. , 2018, , .		11
86	Kalman Filtering of Patches for Frame-Recursive Video Denoising. , 2019, , .		11
87	Fast, Nonlocal and Neural: A Lightweight High Quality Solution to Image Denoising. IEEE Signal Processing Letters, 2021, 28, 1515-1519.	2.1	11
88	Multi-Scale DCT Denoising. Image Processing on Line, 0, 7, 288-308.	0.0	11
89	Fast Affine Invariant Image Matching. Image Processing on Line, 0, 8, 251-281.	0.0	11
90	Topology Preserving Linear Filtering Applied to Medical Imaging. SIAM Journal on Imaging Sciences, 2008, 1, 26-50.	1.3	10

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91	Comparison of distances between measures. Applied Mathematics Letters, 2007, 20, 427-432.	1.5	9
92	High Fidelity Scan Merging. Computer Graphics Forum, 2010, 29, 1643-1651.	1.8	9
93	Numerical analysis of differential operators on raw point clouds. Numerische Mathematik, 2014, 127, 255-289.	0.9	9
94	Non-Local Kalman: A Recursive Video Denoising Algorithm. , 2018, , .		9
95	Video Denoising by Combining Patch Search and CNNs. Journal of Mathematical Imaging and Vision, 2021, 63, 73-88.	0.8	9
96	The Image Curvature Microscope: Accurate Curvature Computation at Subpixel Resolution. Image Processing on Line, 0, 7, 197-217.	0.0	9
97	Towards a Bayesian Video Denoising Method. Lecture Notes in Computer Science, 2015, , 107-117.	1.0	8
98	Automatic Detection of Demosaicing Image Artifacts and Its Use in Tampering Detection. , 2018, , .		8
99	Non-Semantic Evaluation of Image Forensics Tools: Methodology and Database. , 2022, , .		8
100	An analysis of scale-space sampling in SIFT. , 2014, , .		7
101	Comparing feature detectors: A bias in the repeatability criteria. , 2015, , .		7
102	A Comparison of Patch-Based Models in Video Denoising. , 2018, , .		7
103	Analyzing center/surround retinex. Information Sciences, 2020, 512, 741-759.	4.0	7
104	Global Patch Search Boosts Video Denoising. , 2017, , .		7
105	Audio restoration from multiple copies. , 2013, , .		6
106	What is the right center/surround for Retinex?. , 2014, , .		6
107	Motion Smoothing Strategies for 2D Video Stabilization. SIAM Journal on Imaging Sciences, 2018, 11, 219-251.	1.3	6
108	A Flexible Solution to the Osmosis Equation for Seamless Cloning and Shadow Removal. , 2018, , .		6

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109	Covering the Space of Tilts. Application to Affine Invariant Image Comparison. SIAM Journal on Imaging Sciences, 2018, 11, 1230-1267.	1.3	6
110	Local Smoothing Neighborhood Filters. , 2015, , 1599-1643.		6
111	Locally Gaussian exemplar based texture synthesis. , 2014, , .		5
112	Conservative Scale Recomposition for Multiscale Denoising (The Devil is in the High Frequency Detail). SIAM Journal on Imaging Sciences, 2017, 10, 1603-1626.	1.3	5
113	Mesh Segmentation and Model Extraction. Lecture Notes in Computer Science, 2012, , 236-252.	1.0	5
114	How to Reduce Anomaly Detection in Images to Anomaly Detection in Noise. Image Processing on Line, 0, 9, 391-412.	0.0	5
115	A Daily Measure of the SARS-CoV-2 Effective Reproduction Number for all Countries. Image Processing on Line, 0, 10, 191-210.	0.0	5
116	Forgery Detection by Internal Positional Learning of Demosaicing Traces. , 2022, , .		5
117	Image Visualization and Restoration by Curvature Motions. Multiscale Modeling and Simulation, 2011, 9, 834-871.	0.6	4
118	The collaboration of grouping laws in vision. Journal of Physiology (Paris), 2012, 106, 266-283.	2.1	4
119	An Optimal Blind Temporal Motion Blur Deconvolution Filter. IEEE Signal Processing Letters, 2013, 20, 523-526.	2.1	4
120	Exploring the Space of Abstract Textures by Principles and Random Sampling. Journal of Mathematical Imaging and Vision, 2015, 53, 332-345.	0.8	4
121	An Analysis of the Factors Affecting Keypoint Stability in Scale-Space. Journal of Mathematical Imaging and Vision, 2016, 56, 554-572.	0.8	4
122	Affine Invariant Distance Using Multiscale Analysis. Journal of Mathematical Imaging and Vision, 2016, 55, 199-209.	0.8	4
123	Using the IPOL Journal for Online Reproducible Research in Remote Sensing. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2020, 13, 6384-6390.	2.3	4
124	Partial Differential Equations for Morphological Operators. , 2005, , 369-390.		4
125	An Unsupervised Point Alignment Detection Algorithm. Image Processing on Line, 0, 5, 296-310.	0.0	4
126	Numerical Simulation of Landscape Evolution Models. Image Processing on Line, 0, 8, 219-250.	0.0	4

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127	Temporal Repetition Detector for Time Series of Spectrally Limited Satellite Imagers. Image Processing on Line, 0, 10, 62-77.	0.0	4
128	Local Smoothing Neighborhood Filters. , 2011, , 1159-1201.		3
129	A formalization of the*flutter shutter*. Journal of Physics: Conference Series, 2012, 386, 012001.	0.3	3
130	Reliable Demosaicing Detection for Image Forensics. , 2019, , .		3
131	Interactive Design of Random Aesthetic Abstract Textures by Composition Principles. Leonardo, 2021, 54, 179-184.	0.2	3
132	Image Color Cube Dimensional Filtering and Visualization. Image Processing on Line, 0, 1, 57-69.	0.0	3
133	Modeling COVID-19 Incidence by the Renewal Equation after Removal of Administrative Bias and Noise. Biology, 2022, 11, 540.	1.3	3
134	A Proof of Equivalence between Level Lines Shortening and Curvature Motion in Image Processing. SIAM Journal on Mathematical Analysis, 2013, 45, 1047-1067.	0.9	2
135	A contrario detection of good continuation of points. , 2014, , .		2
136	Influence of Unknown Exterior Samples on Interpolated Values for Band-Limited Images. SIAM Journal on Imaging Sciences, 2016, 9, 152-184.	1.3	2
137	Detection of Small Anomalies on Moving Background. , 2019, , .		2
138	Silhouette Vectorization by Affine Scale-Space. Journal of Mathematical Imaging and Vision, 2022, 64, 41-56.	0.8	2
139	Irregular Layout for a Satelliteâ€™s Interferometric Array. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2021, 14, 9408-9423.	2.3	2
140	Ego-Motion Classification for Body-Worn Videos. Mathematics and Visualization, 2018, , 221-239.	0.4	2
141	An Unsupervised Algorithm for Detecting Good. Image Processing on Line, 0, 7, 81-92.	0.0	2
142	Local JPEG Grid Detector via Blocking Artifacts, a Forgery Detection Tool. Image Processing on Line, 0, 10, 24-42.	0.0	2
143	Improving the matching precision of SIFT. , 2014, , .		1
144	A Theory of Optimal Flutter Shutter for Probabilistic Velocity Models. SIAM Journal on Imaging Sciences, 2016, 9, 445-480.	1.3	1

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145	On the Mathematical Foundations of Computational Photography. Journal of Mathematical Imaging and Vision, 2016, 54, 378-397.	0.8	1
146	Straight subjective contour detector. , 2017, , .		1
147	A contrario dip picking for borehole imaging. Geophysics, 2021, 86, V339-V351.	1.4	1
148	Accurate Silhouette Vectorization by Affine Scale-Space. , 2021, , .		1
149	Unsupervised Variability Normalization For Anomaly Detection. , 2021, , .		1
150	Shape Recognition Based on an a Contrario Methodology. Modeling and Simulation in Science, Engineering and Technology, 2006, , 107-136.	0.4	1
151	Multiscale Exemplar Based Texture Synthesis by Locally Gaussian Models. Lecture Notes in Computer Science, 2015, , 435-443.	1.0	1
152	Psychophysics, Gestalts and Games. Lecture Notes in Morphogenesis, 2014, , 217-242.	0.2	1
153	Variational Methods in Image Segmentation (Jean-Michel Morel and Sergio Solimini). SIAM Review, 1996, 38, 179-180.	4.2	0
154	Shape Smoothing and PDEs. , 2005, , 573-586.		0
155	Automatic JPEG Grid Detection with Controlled False Alarms, and Its Image Forensic Applications. , 2018, , .		0
156	Reverse Engineering. , 2019, , .		0
157	Optimizing the Data Adaptive Dual Domain Denoising Algorithm. Lecture Notes in Computer Science, 2015, , 358-365.	1.0	0
158	Accelerating Monte Carlo Renderers by Ray Histogram Fusion. Image Processing on Line, 0, 5, 55-72.	0.0	0