Luis Alvarez

List of Publications by Year
in descending order

96 papers	4,177 citations	393982 19 h-index	128067 60 g-index
104 all docs	104 docs citations	104 times ranked	2393 citing authors

#	Article	IF	Citations
1	Image Selective Smoothing and Edge Detection by Nonlinear Diffusion. II. SIAM Journal on Numerical Analysis, 1992, 29, 845-866.	1.1	1,377
2	Axioms and fundamental equations of image processing. Archive for Rational Mechanics and Analysis, 1993, 123, 199-257.	1.1	752
3	Signal and Image Restoration Using Shock Filters and Anisotropic Diffusion. SIAM Journal on Numerical Analysis, 1994, 31, 590-605.	1.1	310
4	Reliable Estimation of Dense Optical Flow Fields with Large Displacements. International Journal of Computer Vision, 2000, 39, 41-56.	10.9	245
5	A Morphological Approach to Curvature-Based Evolution of Curves and Surfaces. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2014, 36, 2-17.	9.7	193
6	Dense Disparity Map Estimation Respecting Image Discontinuities: A PDE and Scale-Space Based Approach. Journal of Visual Communication and Image Representation, 2002, 13, 3-21.	1.7	137
7	Symmetrical Dense Optical Flow Estimation with Occlusions Detection. International Journal of Computer Vision, 2007, 75, 371-385.	10.9	107
8	Formalization and computational aspects of image analysis. Acta Numerica, 1994, 3, 1-59.	6.3	82
9	Texture-Oriented Anisotropic Filtering and Geodesic Active Contours in Breast Tumor Ultrasound Segmentation. Journal of Mathematical Imaging and Vision, 2007, 28, 81-97.	0.8	66
10	An Algebraic Approach to Lens Distortion by Line Rectification. Journal of Mathematical Imaging and Vision, 2009, 35, 36-50.	0.8	60
11	Automatic Lens Distortion Correction Using One-Parameter Division Models. Image Processing on Line, 0, 4, 327-343.	0.0	47
12	The Size of Objects in Natural and Artificial Images. Advances in Imaging and Electron Physics, 1999, , 167-242.	0.1	42
13	Morphological snakes. , 2010, , .		38
14	A Scale-Space Approach to Nonlocal Optical Flow Calculations. Lecture Notes in Computer Science, 1999, , 235-246.	1.0	38
15	Affine Morphological Multiscale Analysis of Corners and Multiple Junctions. International Journal of Computer Vision, 1997, 25, 95-107.	10.9	37
16	An Iterative Optimization Algorithm for Lens Distortion Correction Using Two-Parameter Models. Image Processing on Line, 0, 6, 326-364.	0.0	37
17	Symmetrical Dense Optical Flow Estimation with Occlusions Detection. Lecture Notes in Computer Science, 2002, , 721-735.	1.0	36
18	Image Quantization Using Reaction-Diffusion Equations. SIAM Journal on Applied Mathematics, 1997, 57, 153-175.	0.8	32

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19	Algebraic Lens Distortion Model Estimation. Image Processing on Line, 0, 1, 1-10.	0.0	24
20	Scales in Natural Images and a Consequence on Their Bounded Variation Norm. Lecture Notes in Computer Science, 1999, , 247-258.	1.0	22
21	Camera calibration in sport event scenarios. Pattern Recognition, 2014, 47, 89-95.	5.1	22
22	Fully PolSAR image classification using machine learning techniques and reaction-diffusion systems. Neurocomputing, 2017, 255, 52-60.	3.5	22
23	Accurate Depth Dependent Lens Distortion Models: AnÂApplication to Planar View Scenarios. Journal of Mathematical Imaging and Vision, 2011, 39, 75-85.	0.8	20
24	Line detection in images showing significant lens distortion and application to distortion correction. Pattern Recognition Letters, 2014, 36, 261-271.	2.6	20
25	Automatic correction of perspective and optical distortions. Computer Vision and Image Understanding, 2017, 161, 1-10.	3.0	20
26	Zoom Dependent Lens Distortion Mathematical Models. Journal of Mathematical Imaging and Vision, 2012, 44, 480-490.	0.8	19
27	A Real Time Morphological Snakes Algorithm. Image Processing on Line, 0, 2, 1-7.	0.0	19
28	Invertibility and Estimation of Two-Parameter Polynomial and Division Lens Distortion Models. SIAM Journal on Imaging Sciences, 2015, 8, 1574-1606.	1.3	18
29	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
30	Morphological Approach to Multiscale Analysis: From Principles to Equations. Computational Imaging and Vision, 1994, , 229-254.	0.6	16
31	A new energy-based method for 3D motion estimation of incompressible PIV flows. Computer Vision and Image Understanding, 2009, 113, 802-810.	3.0	14
32	Automatic estimation of the aortic lumen geometry by ellipse tracking. International Journal of Computer Assisted Radiology and Surgery, 2019, 14, 345-355.	1.7	14
33	Variational second order flow estimation for PIV sequences. Experiments in Fluids, 2008, 44, 291-304.	1.1	13
34	Sufficient and necessary initial mass conditions for the existence of a waiting time in nonlinear-convection processes. Journal of Mathematical Analysis and Applications, 1991, 155, 378-392.	0.5	11
35	Estimation of the Lens Distortion Model by Minimizing a Line Reprojection Error. IEEE Sensors Journal, 2017, 17, 2848-2855.	2.4	11
36	Automatic detection of anatomical landmarks of the aorta in CTA images. Medical and Biological Engineering and Computing, 2020, 58, 903-919.	1.6	11

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37	Computerized ultrasound characterization of breast tumors. International Congress Series, 2005, 1281, 1063-1068.	0.2	10
38	On the retention of the interfaces in some elliptic and parabolic nonlinear problems. Discrete and Continuous Dynamical Systems, 2009, 25, 1-17.	0.5	9
39	Normalization and feature extraction on ear images. , 2012, , .		9
40	Classification of complex Wishart matrices with a diffusion–reaction system guided by stochastic distances. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2015, 373, 20150118.	1.6	9
41	Fast and accurate circle tracking using active contour models. Journal of Real-Time Image Processing, 2018, 14, 793-802.	2.2	9
42	Despeckling PolSAR Images With a Structure Tensor Filter. IEEE Geoscience and Remote Sensing Letters, 2020, 17, 357-361.	1.4	9
43	Images and PDE's. Lecture Notes in Control and Information Sciences, 1996, , 3-14.	0.6	9
44	Homography estimation using one ellipse correspondence and minimal additional information. , 2014, , .		7
45	Tracking futsal players with a wide-angle lens camera: accuracy analysis of the radial distortion correction based on an improved Hough transform algorithm. Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization, 2017, 5, 221-231.	1.3	7
46	Tracking the Aortic Lumen Geometry byÂOptimizing the 3D Orientation ofÂItsÂCross-sections. Lecture Notes in Computer Science, 2017, , 174-181.	1.0	7
47	Cost analysis in RO desalination plants production lines: mathematical model and simulation. Desalination and Water Treatment, 2013, 51, 4800-4805.	1.0	6
48	Real-time camera motion tracking in planar view scenarios. Journal of Real-Time Image Processing, 2016, 11, 287-299.	2.2	6
49	Level Set Regularization Using Geometric Flows. SIAM Journal on Imaging Sciences, 2018, 11, 1493-1523.	1.3	6
50	On the behaviour of the free boundary of some nonhomogeneous elliptic problems. Applicable Analysis, 1990, 36, 131-144.	0.6	5
51	On the initial growth of interfaces in reaction–diffusion equations with strong absorption. Proceedings of the Royal Society of Edinburgh Section A: Mathematics, 1993, 123, 803-817.	0.8	5
52	Robust detection and ordering of ellipses on a calibration pattern. Pattern Recognition and Image Analysis, 2007, 17, 508-522.	0.6	5
53	Computer Vision Techniques for Breast Tumor Ultrasound Analysis. Breast Journal, 2008, 14, 483-486.	0.4	5
54	Morphological Thick Line Center Detection. Lecture Notes in Computer Science, 2010, , 71-80.	1.0	5

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55	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
56	More efficient production line with Desalination plants using reverse osmosis. Desalination and Water Treatment, 2013, 51, 307-317.	1.0	4
57	Exploring the Space of Abstract Textures by Principles and Random Sampling. Journal of Mathematical Imaging and Vision, 2015, 53, 332-345.	0.8	4
58	Affine Invariant Distance Using Multiscale Analysis. Journal of Mathematical Imaging and Vision, 2016, 55, 199-209.	0.8	4
59	Ellipse Motion Estimation Using Parametric Snakes. Journal of Mathematical Imaging and Vision, 2018, 60, 1095-1110.	0.8	4
60	Texture Classification through Multiscale Orientation Histogram Analysis. Lecture Notes in Computer Science, 2003, , 479-493.	1.0	4
61	Anisotropic Interpolation of DT-MRI. Lecture Notes in Computer Science, 2004, , 343-350.	1.0	4
62	Segmentation of the Aorta Using Active Contours with Histogram-Based Descriptors. Lecture Notes in Computer Science, 2018, , 28-35.	1.0	3
63	Supervised Classification of Fully PolSAR Images Using Active Contour Models. IEEE Geoscience and Remote Sensing Letters, 2019, 16, 1165-1169.	1.4	3
64	Interactive Design of Random Aesthetic Abstract Textures by Composition Principles. Leonardo, 2021, 54, 179-184.	0.2	3
65	Finding the Skeleton of 2D Shape and Contours: Implementation of Hamilton-Jacobi Skeleton. Image Processing on Line, 0, 11, 18-36.	0.0	3
66	Corner Detection Using the Affine Morphological Scale Space. Lecture Notes in Computer Science, 2017, , 29-40.	1.0	3
67	Modeling COVID-19 Incidence by the Renewal Equation after Removal of Administrative Bias and Noise. Biology, 2022, 11, 540.	1.3	3
68	3D curve regularization. Revista De La Real Academia De Ciencias Exactas, Fisicas Y Naturales - Serie A: Matematicas, 2022, 116, 1.	0.6	3
69	Geometric Invariant Shape Representations Using Morphological Multiscale Analysis. Journal of Mathematical Imaging and Vision, 2003, 18, 145-168.	0.8	2
70	Computer Vision and Image Processing in Environmental Research. Systems Analysis Modelling Simulation, 2003, 43, 1229-1242.	0.1	2
71	Computer-Aided Measurement of Solid Breast Tumor Features on Ultrasound Images. Lecture Notes in Computer Science, 2004, , 353-364.	1.0	2
72	Multi-Channel Satellite Image Analysis Using a Variational Approach. Pure and Applied Geophysics, 2008, 165, 1071-1093.	0.8	2

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73	Some qualitative properties for geometric flows and its Euler implicit discretization. Nonlinear Analysis: Theory, Methods & Applications, 2016, 137, 43-76.	0.6	2
74	Local Edginess Measures in PolSAR Imagery by Using Stochastic Distances. , 2018, , .		2
75	A cloud-based centerline algorithm for Studierfenster. , 2021, , .		2
76	A Variational Approach for 3D Motion Estimation of Incompressible PIV Flows. , 2007, , 837-847.		2
77	Texture-Based Filtering and Front-Propagation Techniques for the Segmentation of Ultrasound Images. , 2007, , 960-967.		2
78	Automatic Camera Pose Recognition in Planar View Scenarios. Lecture Notes in Computer Science, 2012, , 406-413.	1.0	2
79	Semiautomatic Snake-Based Segmentation of Solid Breast Nodules on Ultrasonography. Lecture Notes in Computer Science, 2005, , 467-472.	1.0	2
80	3D Motion Estimation Using a Combination of Correlation and Variational Methods for PIV. , 2007, , 612-620.		2
81	Image restoration scale space. , 1995, , .		1
82	Image quantization by nonlinear smoothing. , 1995, , .		1
83	Image enhancement using an optimum quantizer. Lecture Notes in Computer Science, 1997, , 444-452.	1.0	1
84	Special issue on real-time image and video processing for pattern recognition systems and applications. Journal of Real-Time Image Processing, 2016, 11, 247-249.	2.2	1
85	An Algorithm for 3D Curve Smoothing. Image Processing on Line, 0, 11, 37-55.	0.0	1
86	Breast Nodule Ultrasound Segmentation Through Texture-Based Active Contours. Mathematics in Industry, 2008, , 858-862.	0.1	1
87	Regularizing a Set of Unstructured 3D Points from a Sequence of Stereo Images. Lecture Notes in Computer Science, 2003, , 449-463.	1.0	1
88	Second Order Variational Optic Flow Estimation. , 2007, , 646-653.		1
89	3D Reconstruction from a Vascular Tree Model. Lecture Notes in Computer Science, 2003, , 616-626.	1.0	0
90	Segmentation of Computed Tomography 3D Images Using Partial Differential Equations. , 2011, , .		0

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91	Classification of PolSAR imagery by solving a diffusion-reaction system. , 2015, , .		0
92	Regularization of 3D Cylindrical Surfaces. Lecture Notes in Computer Science, 2003, , 37-44.	1.0	0
93	Video Segmentation Through Multiscale Texture Analysis. Lecture Notes in Computer Science, 2004, , 339-346.	1.0	0
94	A variational approach to camera motion smoothing. Differential Equations and Applications, 2011, , 555-564.	0.1	0
95	Automatic Corner Matching in Highly Distorted Images of Zhangâ€™s Calibration Pattern. Lecture Notes in Computer Science, 2014, , 754-761.	1.0	0
96	Mathematical Models for the Calibration of Cameras Mounted on a Tripod Using Primitive Tracking. Lecture Notes in Computer Science, 2012, , 304-311.	1.0	0