

Cornelia Fermuller

List of Publications by Year in descending order

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117
papers

2,664
citations

218677

26
h-index

276875

41
g-index

117
all docs

117
docs citations

117
times ranked

1740
citing authors

#	ARTICLE	IF	CITATIONS
1	Viewpoint Invariant Texture Description Using Fractal Analysis. International Journal of Computer Vision, 2009, 83, 85-100.	15.6	252
2	Event-Based Moving Object Detection and Tracking. , 2018, , .		170
3	Direct Perception of Three-Dimensional Motion from Patterns of Visual Motion. Science, 1995, 270, 1973-1976.	12.6	108
4	Robust Wavelet-Based Super-Resolution Reconstruction: Theory and Algorithm. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2009, 31, 649-660.	13.9	100
5	Scale-space texture description on SIFT-like textons. Computer Vision and Image Understanding, 2012, 116, 999-1013.	4.7	84
6	Effects of Errors in the Viewing Geometry on Shape Estimation. Computer Vision and Image Understanding, 1998, 71, 356-372.	4.7	74
7	Motion segmentation using occlusions. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2005, 27, 988-992.	13.9	74
8	GapFlyt: Active Vision Based Minimalist Structure-Less Gap Detection For Quadrotor Flight. IEEE Robotics and Automation Letters, 2018, 3, 2799-2806.	5.1	71
9	The Statistics of Optical Flow. Computer Vision and Image Understanding, 2001, 82, 1-32.	4.7	62
10	Learning sensorimotor control with neuromorphic sensors: Toward hyperdimensional active perception. Science Robotics, 2019, 4, .	17.6	60
11	The role of fixation in visual motion analysis. International Journal of Computer Vision, 1993, 11, 165-186.	15.6	53
12	Observability of 3D Motion. International Journal of Computer Vision, 2000, 37, 43-63.	15.6	47
13	Image Understanding using vision and reasoning through Scene Description Graph. Computer Vision and Image Understanding, 2018, 173, 33-45.	4.7	46
14	Ambiguity in Structure from Motion: Sphere versus Plane. International Journal of Computer Vision, 1998, 28, 137-154.	15.6	45
15	Uncertainty in visual processes predicts geometrical optical illusions. Vision Research, 2004, 44, 727-749.	1.4	44
16	EV-IMO: Motion Segmentation Dataset and Learning Pipeline for Event Cameras. , 2019, , .		43
17	Grasp type revisited: A modern perspective on a classical feature for vision. , 2015, , .		42
18	Real-Time Clustering and Multi-Target Tracking Using Event-Based Sensors. , 2018, , .		42

#	ARTICLE	IF	CITATIONS
19	Contour Motion Estimation for Asynchronous Event-Driven Cameras. Proceedings of the IEEE, 2014, 102, 1537-1556.	21.3	40
20	Detection of Manipulation Action Consequences (MAC). , 2013, , .		39
21	Passive navigation as a pattern recognition problem. International Journal of Computer Vision, 1995, 14, 147-158.	15.6	38
22	Tracking facilitates 3-D motion estimation. Biological Cybernetics, 1992, 67, 259-268.	1.3	36
23	The Ouchi illusion as an artifact of biased flow estimation. Vision Research, 2000, 40, 77-95.	1.4	36
24	Directions of Motion Fields are Hardly Ever Ambiguous. International Journal of Computer Vision, 1998, 26, 5-24.	15.6	35
25	Learning shift-invariant sparse representation of actions. , 2010, , .		34
26	Prediction of Manipulation Actions. International Journal of Computer Vision, 2018, 126, 358-374.	15.6	34
27	SalientDSO: Bringing Attention to Direct Sparse Odometry. IEEE Transactions on Automation Science and Engineering, 2019, 16, 1619-1626.	5.2	34
28	Vision and action. Image and Vision Computing, 1995, 13, 725-744.	4.5	33
29	Computer Vision and Natural Language Processing. ACM Computing Surveys, 2017, 49, 1-44.	23.0	33
30	Structure from Motion: Beyond the Epipolar Constraint. International Journal of Computer Vision, 2000, 37, 231-258.	15.6	32
31	On the Geometry of Visual Correspondence. International Journal of Computer Vision, 1997, 21, 223-247.	15.6	31
32	Active segmentation for robotics. , 2009, , .		31
33	A Dataset for Visual Navigation with Neuromorphic Methods. Frontiers in Neuroscience, 2016, 10, 49.	2.8	31
34	A spherical eye from multiple cameras (makes better models of the world). , 0, , .		27
35	Polydioptric camera design and 3D motion estimation. , 0, , .		26
36	Detection and Segmentation of 2D Curved Reflection Symmetric Structures. , 2015, , .		26

#	ARTICLE	IF	CITATIONS
37	Learning Visual Motion Segmentation Using Event Surfaces. , 2020, , .		26
38	Families of stationary patterns producing illusory movement: insights into the visual system. Proceedings of the Royal Society B: Biological Sciences, 1997, 264, 795-806.	2.6	24
39	What can i do around here? Deep functional scene understanding for cognitive robots. , 2017, , .		23
40	Bio-inspired Motion Estimation with Event-Driven Sensors. Lecture Notes in Computer Science, 2015, , 309-321.	1.3	23
41	Unsupervised Learning of Dense Optical Flow, Depth and Egomotion with Event-Based Sensors. , 2020, , .		23
42	Illusory motion due to causal time filtering. Vision Research, 2010, 50, 315-329.	1.4	21
43	Visual space distortion. Biological Cybernetics, 1997, 77, 323-337.	1.3	20
44	Visual space is not cognitively impenetrable. Behavioral and Brain Sciences, 1999, 22, 366-367.	0.7	20
45	Using a minimal action grammar for activity understanding in the real world. , 2012, , .		20
46	Eyes from eyes: new cameras for structure from motion. , 0, , .		19
47	Detecting Reflectonal Symmetries in 3D Data Through Symmetrical Fitting. , 2017, , .		19
48	Forecasting Action Through Contact Representations From First Person Video. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2023, 45, 6703-6714.	13.9	17
49	Multi-camera networks: eyes from eyes. , 0, , .		16
50	Towards a Watson that sees: Language-guided action recognition for robots. , 2012, , .		15
51	Fast 2D border ownership assignment. , 2015, , .		15
52	A Projective Invariant for Textures. , 0, , .		14
53	Symbolic Representation and Learning With Hyperdimensional Computing. Frontiers in Robotics and AI, 2020, 7, 63.	3.2	13
54	Topology-Aware Non-Rigid Point Cloud Registration. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2021, 43, 1056-1069.	13.9	13

#	ARTICLE	IF	CITATIONS
55	Cluttered scene segmentation using the symmetry constraint. , 2016, , .		12
56	Robust Nonlinear Control-Based Trajectory Tracking for Quadrotors Under Uncertainty. , 2021, 5, 2042-2047.		12
57	Self-calibration from image derivatives. , 0, , .		11
58	Noise causes slant underestimation in stereo and motion. Vision Research, 2006, 46, 3105-3120.	1.4	11
59	Shadow free segmentation in still images using local density measure. , 2014, , .		11
60	0-MMS: Zero-Shot Multi-Motion Segmentation With A Monocular Event Camera. , 2021, , .		11
61	A syntactic approach to scale-space-based corner description. IEEE Transactions on Pattern Analysis and Machine Intelligence, 1994, 16, 748-751.	13.9	10
62	Contour Detection and Characterization for Asynchronous Event Sensors. , 2015, , .		10
63	Seeing Behind the Scene: Using Symmetry to Reason About Objects in Cluttered Environments. , 2018, , .		10
64	cilantro. , 2018, , .		10
65	Self-Calibration from Image Derivatives. International Journal of Computer Vision, 2002, 48, 91-114.	15.6	9
66	The argus eye. IEEE Robotics and Automation Magazine, 2004, 11, 31-38.	2.0	9
67	The image torque operator: A new tool for mid-level vision. , 2012, , .		9
68	SpikeMS: Deep Spiking Neural Network for Motion Segmentation. , 2021, , .		9
69	Simultaneous estimation of viewing geometry and structure. Lecture Notes in Computer Science, 1998, , 342-358.	1.3	8
70	What is computed by structure from motion algorithms?. Lecture Notes in Computer Science, 1998, , 359-375.	1.3	8
71	A hierarchy of cameras for 3D photography. Computer Vision and Image Understanding, 2004, 96, 274-293.	4.7	8
72	A 3D shape constraint on video. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2006, 28, 1018-1023.	13.9	8

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73	Depth estimation using the compound eye of dipteran flies. <i>Biological Cybernetics</i> , 2006, 95, 487-501.	1.3	8
74	A Gestaltist approach to contour-based object recognition: Combining bottom-up and top-down cues. <i>International Journal of Robotics Research</i> , 2015, 34, 627-652.	8.5	8
75	Geometry of Eye Design: Biology and Technology. <i>Lecture Notes in Computer Science</i> , 2001, , 22-38.	1.3	8
76	New eyes for building models from video. <i>Computational Geometry: Theory and Applications</i> , 2000, 15, 3-23.	0.5	7
77	Active scene recognition with vision and language. , 2011, , .		7
78	PRGFlow: Unified SWAP-aware deep global optical flow for aerial robot navigation. <i>Electronics Letters</i> , 2021, 57, 614-617.	1.0	7
79	3D Motion and Shape Representations in Visual Servo Control. <i>International Journal of Robotics Research</i> , 1998, 17, 4-18.	8.5	6
80	Plenoptic video geometry. <i>Visual Computer</i> , 2003, 19, 395-404.	3.5	6
81	Embedding high-level information into low level vision: Efficient object search in clutter. , 2013, , .		6
82	The Cognitive Dialogue: A new model for vision implementing common sense reasoning. <i>Image and Vision Computing</i> , 2015, 34, 42-44.	4.5	6
83	Visual space-time geometry - A tool for perception and the imagination. <i>Proceedings of the IEEE</i> , 2002, 90, 1113-1135.	21.3	5
84	Detecting Independent 3D Movement. , 2005, , 383-401.		5
85	Statistics Explains Geometrical Optical Illusions. , 2001, , 409-445.		5
86	Multi-resolution shape description by corners. , 0, , .		4
87	Contour-based recognition. , 2012, , .		4
88	Robots with language: Multi-label visual recognition using NLP. , 2013, , .		4
89	Joint direct estimation of 3D geometry and 3D motion using spatio temporal gradients. <i>Pattern Recognition</i> , 2021, 113, 107759.	8.1	4
90	The confounding of translation and rotation in reconstruction from multiple views. , 0, , .		3

#	ARTICLE	IF	CITATIONS
91	Eyes from Eyes. Lecture Notes in Computer Science, 2001, , 204-217.	1.3	3
92	MorphEyes: Variable Baseline Stereo For Quadrotor Navigation. , 2021, , .		3
93	The Synthesis of Vision and Action. Springer Series in Perception Engineering, 1996, , 205-240.	0.2	3
94	NudgeSeg: Zero-Shot Object Segmentation by Repeated Physical Interaction. , 2021, , .		3
95	Motion constraint patterns. , 0, , .		2
96	Polydioptric Cameras: New Eyes for Structure from Motion. Lecture Notes in Computer Science, 2002, , 618-625.	1.3	2
97	Evenly Cascaded Convolutional Networks. , 2018, , .		2
98	Metaconcepts: Isolating Context in Word Embeddings. , 2019, , .		2
99	Beyond the Epipolar Constraint: Integrating 3D Motion and Structure Estimation. Lecture Notes in Computer Science, 1998, , 109-123.	1.3	2
100	The information in the direction of image flow. , 0, , .		1
101	Better Flow Estimation from Color Images. Eurasip Journal on Advances in Signal Processing, 2007, , 2007, .	1.7	1
102	Co-active learning to adapt humanoid movement for manipulation. , 2016, , .		1
103	Reliable Attribute-Based Object Recognition Using High Predictive Value Classifiers. Lecture Notes in Computer Science, 2016, , 801-815.	1.3	1
104	A bugâ€™s-eye view. Science Robotics, 2020, 5, .	17.6	1
105	Analyzing Action Representations. Lecture Notes in Computer Science, 2000, , 1-21.	1.3	1
106	The geometry of visual space distortion. Lecture Notes in Computer Science, 1997, , 249-277.	1.3	1
107	Learning for action-based scene understanding. , 2022, , 373-403.		1
108	Deep-Readout Random Recurrent Neural Networks for Real-World Temporal Data. SN Computer Science, 2022, 3, 1.	3.6	1

#	ARTICLE	IF	CITATIONS
109	Which shape from motion?. , 0, , .		0
110	Combining motion from texture and lines for visual navigation. , 2007, , .		0
111	Real-time shape retrieval for robotics using skip Tri-Grams. , 2009, , .		0
112	Guest Editorial: Special Section on CVPR 2014. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2016, 38, 1281-1282.	13.9	0
113	Fast task-specific target detection via graph based constraints representation and checking. , 2017, , .		0
114	A New Framework for Multi-camera Structure from Motion. Informatik Aktuell, 2000, , 75-82.	0.6	0
115	Bias in Shape Estimation. Lecture Notes in Computer Science, 2004, , 405-416.	1.3	0
116	The Video Yardstick. Lecture Notes in Computer Science, 1998, , 144-158.	1.3	0
117	Border ownership assignment in real images. Journal of Vision, 2015, 15, 763.	0.3	0