Patricio Vela

List of Publications by Year
in descending order

123
papers	3,248
citations	331670
21
h-index	206112
48
g-index
124
all docs	124
docs citations	124
times ranked	2870
citing authors

#	Article	IF	Citations
1	Geometric Inlier Selection for Robust Rigid Registration With Application to Blade Surfaces. IEEE Transactions on Industrial Electronics, 2022, 69, 9206-9215.	7.9	2
2	GKNet: Grasp keypoint network for grasp candidates detection. International Journal of Robotics Research, 2022, 41, 361-389.	8.5	15
3	Image-Based Trajectory Tracking Through Unknown Environments Without Absolute Positioning. IEEE/ASME Transactions on Mechatronics, 2022, 27, 2098-2106.	5.8	6
4	SGL: Symbolic Goal Learning in a Hybrid, Modular Framework for Human Instruction Following. IEEE Robotics and Automation Letters, 2022, 7, 10375-10382.	5.1	2
5	Teleoperation of Semi-autonomous Robots Through Uncertain Environments. , 2022, , .		1
6	Outdoor Perception Space Navigation Experimental Procedures. , 2022, , .		0
7	Learning Terrain Dynamics: A Gaussian Process Modeling and Optimal Control Adaptation Framework Applied to Robotic Jumping. IEEE Transactions on Control Systems Technology, 2021, 29, 1581-1596.	5.2	7
8	An Affordance Keypoint Detection Network for Robot Manipulation. IEEE Robotics and Automation Letters, 2021, 6, 2870-2877.	5.1	16
9	Potential Gap: A Gap-Informed Reactive Policy for Safe Hierarchical Navigation. IEEE Robotics and Automation Letters, 2021, 6, 8325-8332.	5.1	6
10	Ego-centric Stereo Navigation Using Stixel World. , 2021, , .		3
11	A Joint Network for Grasp Detection Conditioned on Natural Language Commands. , 2021, , .		12
12	Shape-centric Modeling for Soft Robot Inchworm Locomotion. , 2021, , .		5
13	NavTuner: Learning a Scene-Sensitive Family of Navigation Policies. , 2021, , .		0
14	Multi-view Fusion for Multi-level Robotic Scene Understanding. , 2021, , .		12
15	Shape-centric modeling for control of traveling wave rectilinear locomotion on snake-like robots. Robotics and Autonomous Systems, 2020, 124, 103406.	5.1	9
16	Enhancing produce safety: State estimation-based robust adaptive control of a produce wash system. Journal of Process Control, 2020, 86, 1-15.	3.3	7
17	Using Synthetic Data and Deep Networks to Recognize Primitive Shapes for Object Grasping. , 2020, , .		26
18	egoTEB: Egocentric, Perception Space Navigation Using Timed-Elastic-Bands. , 2020, , .		13

#	Article	IF	Citations
19	Closed-Loop Benchmarking of Stereo Visual-Inertial SLAM Systems: Understanding the Impact of Drift and Latency on Tracking Accuracy. , 2020, , .		4
20	Good Feature Matching: Toward Accurate, Robust VO/VSLAM With Low Latency. IEEE Transactions on Robotics, 2020, 36, 657-675.	10.3	33
21	Synthesis of Control Barrier Functions Using a Supervised Machine Learning Approach. , 2020, , .		46
22	Real-Time Egocentric Navigation Using 3D Sensing. , 2020, , 431-484.		5
23	Toward Affordance Detection and Ranking on Novel Objects for Real-World Robotic Manipulation. IEEE Robotics and Automation Letters, 2019, 4, 4070-4077.	5.1	21
24	Scan2BrIM: IFC Model Generation of Concrete Bridges from Point Clouds. , 2019, , .		3
25	Top-Down Partitioning of Reinforced Concrete Bridge Components. , 2019, , .		0
26	Every Hop is an Opportunity: Quickly Classifying and Adapting to Terrain During Targeted Hopping. , 2019, , .		8
27	Low-latency Visual SLAM with Appearance-Enhanced Local Map Building. , 2019, , .		4
28	Learning Affordance Segmentation for Real-World Robotic Manipulation via Synthetic Images. IEEE Robotics and Automation Letters, 2019, 4, 1140-1147.	5.1	32
29	Evaluation of Bio-Inspired Scales on Locomotion Performance of Snake-Like Robots. Robotica, 2019, 37, 1302-1319.	1.9	8
30	Automated Pavement Patch Detection and Quantification Using Support Vector Machines. Journal of Computing in Civil Engineering, 2018, 32, .	4.7	58
31	Robust Adaptive Quadratic Programming and Safety Performance of Nonlinear Systems with Unstructured Uncertainties. , 2018, , .		12
32	Performance Reference Adaptive Control: A Joint Quadratic Programming and Adaptive Control Framework. , 2018, , .		6
33	Hands-Free Assistive Manipulator Using Augmented Reality and Tongue Drive System. , 2018, , .		3
34	Good Feature Selection for Least Squares Pose Optimization in VO/VSLAM. , 2018, , .		19
35	The Helping Hand: An Assistive Manipulation Framework Using Augmented Reality and Tongue-Drive Interfaces. , 2018, 2018, 2158-2161.		17
36	Optimal Trajectory Planning and Feedback Control of Lateral Undulation in Snake-Like Robots. , 2018, , .		6

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37	Real-World Multiobject, Multigrasp Detection. IEEE Robotics and Automation Letters, 2018, 3, 3355-3362.	5.1	248
38	A Concurrent Learning Approach to Monocular, Vision-Based Regulation of Leader/Follower Systems. , 2018, , .		5
39	Good Line Cutting: Towards Accurate Pose Tracking of Line-Assisted VO/VSLAM. Lecture Notes in Computer Science, 2018, , 527-543.	1.3	10
40	A New Framework for Optimal Path Planning of Rectangular Robots Using a Weighted L_p Norm. IEEE Robotics and Automation Letters, 2017, 2, 1460-1465.	5.1	15
41	Learning to jump in granular media: Unifying optimal control synthesis with Gaussian process-based regression. , 2017, , .		12
42	Closed-loop path following of traveling wave rectilinear motion through obstacle-strewn terrain. , 2017, , .		1
43	PiPS: Planning in perception space. , 2017, , .		8
44	Optimized Parameters for Over-Height Vehicle Detection under Variable Weather Conditions. Journal of Computing in Civil Engineering, 2017, 31, .	4.7	10
45	Cooperative Relative Navigation for Space Rendezvous and Proximity Operations using Controlled Active Vision. Journal of Field Robotics, 2016, 33, 205-228.	6.0	13
46	Learning binary features online from motion dynamics for incremental loop-closure detection and place recognition. , 2016, , .		27
47	Lower limb pose estimation for monitoring the kicking patterns of infants. , 2016, 2016, 2157-2160.		14
48	Automated feet detection for clinical gait assessment. , 2016, 2016, 2161-2164.		3
49	Automated detection of pavement patches utilizing support vector machine classification. , 2016, , .		19
50	Collision free and permutation invariant formation control using the root locus principle. , 2016, , .		10
51	Detection of Walls, Floors, and Ceilings in Point Cloud Data. , 2016, , .		15
52	A Stochastic Approach to Diffeomorphic Point Set Registration with Landmark Constraints. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2016, 38, 238-251.	13.9	18
53	Locomotor benefits of being a slender and slick sand-swimmer. Journal of Experimental Biology, 2015, 218, 440-50.	1.7	57
54	Good features to track for visual SLAM. , 2015, , .		49

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55	Optimal obstacle avoidance trajectory generation using the root locus principle. , 2015, , .		3
56	Human-aware mobile robot exploration and motion planner. , 2015, , .		4
57	Generating Absolute-Scale Point Cloud Data of Built Infrastructure Scenes Using a Monocular Camera Setting. Journal of Computing in Civil Engineering, 2015, 29, .	4.7	44
58	A Sparsity‐Inducing Optimization‐Based Algorithm for Planar Patches Extraction from Noisy Point‐Cloud Data. Computer-Aided Civil and Infrastructure Engineering, 2015, 30, 85-102.	9.8	42
59	Construction performance monitoring via still images, time-lapse photos, and video streams: Now, tomorrow, and the future. Advanced Engineering Informatics, 2015, 29, 211-224.	8.0	195
60	Bayesian Nonparametric Adaptive Control Using Gaussian Processes. IEEE Transactions on Neural Networks and Learning Systems, 2015, 26, 537-550.	11.3	116
61	Modulation of orthogonal body waves enables high maneuverability in sidewinding locomotion. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 6200-6205.	7.1	78
62	Optimally observable and minimal cardinality monocular SLAM. , 2015, , .		8
63	Incorporating frictional anisotropy in the design of a robotic snake through the exploitation of scales. , 2015, , .		13
64	Forage RRT — An efficient approach to task-space goal planning for high dimensional systems. , 2014, , .		7
65	Vision-Based Tower Crane Tracking for Understanding Construction Activity. Journal of Computing in Civil Engineering, 2014, 28, 103-112.	4.7	108
66	Potential of Time-of-Flight Range Imaging for Object Identification and Manipulation in Construction. Journal of Computing in Civil Engineering, 2014, 28, 06014005.	4.7	4
67	Efficient Closed-Loop Detection and Pose Estimation for Vision-Only Relative Localization in Space with A Cooperative Target. , 2014, , .		6
68	Communication Technologies for Older Adults in Retirement Communities. Advances in Human and Social Aspects of Technology Book Series, 2014, , 491-501.	0.3	1
69	Multimodal Deformable Registration of Traumatic Brain Injury MR Volumes via the Bhattacharyya Distance. IEEE Transactions on Biomedical Engineering, 2013, 60, 2511-2520.	4.2	5
70	Design and Technologies for Understanding Older Adults Social Interactions in Retirement Communities. International Journal of Social Robotics, 2013, 5, 575-591.	4.6	2
71	Optimized selection of key frames for monocular videogrammetric surveying of civil infrastructure. Advanced Engineering Informatics, 2013, 27, 270-282.	8.0	54
72	Joint CT/CBCT deformable registration and CBCT enhancement for cancer radiotherapy. Medical Image Analysis, 2013, 17, 387-400.	11.6	32

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73	Interactive Medical Image Segmentation Using PDE Control of Active Contours. IEEE Transactions on Medical Imaging, 2013, 32, 2127-2139.	8.9	38
74	A comparative study of efficient initialization methods for the k-means clustering algorithm. Expert Systems With Applications, 2013, 40, 200-210.	7.6	834
75	Stochastic image registration with user constraints. , 2013, 8669, .		0
76	Bayesian Nonparameteric Model Reference Adaptive Control using Gaussian Processes. , 2013, , .		5
77	Comparison of Image-Based and Time-of-Flight-Based Technologies for Three-Dimensional Reconstruction of Infrastructure. Journal of Construction Engineering and Management - ASCE, 2013, 139, 69-79.	3.8	112
78	Bayesian nonparametric adaptive control of time-varying systems using Gaussian processes. , 2013, , .		21
79	A Bayesian nonparametric approach to adaptive control using Gaussian Processes. , 2013, , .		13
80	A stochastic approach for non-rigid image registration. Proceedings of SPIE, 2013, , .	0.8	2
81	Reduced Set KPCA for Improving the Training and Execution Speed of Kernel Machines. , 2013, , .		4
82	TH-C-WAB-02: Interactive Segmentation of Structures in the Head and Neck Using Steerable Active Contours. Medical Physics, 2013, 40, 536-536.	3.0	0
83	Stitchtures. , 2012, , .		4
84	Information propagation applied to robot-assisted evacuation. , 2012, , .		22
85	Reproducing Kernel Hilbert Space Approach for the Online Update of Radial Bases in Neuro-Adaptive Control. IEEE Transactions on Neural Networks and Learning Systems, 2012, 23, 1130-1141.	11.3	46
86	Automated Trajectory and Path Planning Analysis Based on Ultra Wideband Data. Journal of Computing in Civil Engineering, 2012, 26, 151-160.	4.7	42
87	Comparison of Image-Based and Time-of-Flight-Based Technologies for 3D Reconstruction of Infrastructure. , 2012, , .		9
88	Data-Fusion Approaches and Applications for Construction Engineering. Journal of Construction Engineering and Management - ASCE, 2011, 137, 863-869.	3.8	38
89	Kernel Map Compression for Speeding the Execution of Kernel-Based Methods. IEEE Transactions on Neural Networks, 2011, 22, 870-879.	4.2	3
90	Performance evaluation of ultra wideband technology for construction resource location tracking in harsh environments. Automation in Construction, 2011, 20, 1173-1184.	9.8	198

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91	Comparison of Camera Motion Estimation Methods for 3D Reconstruction of Infrastructure. , 2011, , .		6
92	Person Reidentification by Kernel PCA Based Appearance Learning. , 2011, , .		5
93	A reproducing Kernel Hilbert Space approach for the online update of Radial Bases in neuro-adaptive control. , 2011, , .		3
94	Generating the sparse point cloud of a civil infrastructure scene using a single video camera under practical constraints. , 2011, , .		1
95	Depth invariant visual servoing. , 2011, , .		4
96	PTZ camera-based adaptive panoramic and multi-layered background model. , 2011, , .		9
97	2D Vision Tracking Methods' Performance Comparison for 3D Tracking of Construction Resources. , 2010, , .		7
98	Visual closed-loop tracking with area stabilization. , 2010, , .		1
99	A probabilistic observer for visual tracking. , 2010, , .		1
100	Delay estimation for wireless LAN control of nonlinear systems. , 2010, , .		0
101	Optimal estimation applied to visual contour tracking. , 2010, , .		2
102	A local extended Kalman filter for visual tracking. , 2010, , .		7
103	Topologically based decision support tools for aircraft routing. , 2010, , .		3
104	A Probabilistic Contour Observer for Online Visual Tracking. SIAM Journal on Imaging Sciences, 2010, 3, 835-855.	2.2	2
105	Estimation theory and tracking of deformable objects. , 2010, , .		4
106	Pre-image Problem in Manifold Learning and Dimensional Reduction Methods. , 2010, , .		1
107	Improvements to Concrete Column Detection in Live Video. , 2010, , .		2
108	Tracking and Classifying Objects on a Conveyor Belt Using Time-of-Flight Camera. , 2010, , .		2

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109	Noise estimation and adaptive filtering during visual tracking. , 2009, , .		0
110	Robust Target Localization and Segmentation Using Graph Cut, KPCA and Mean-Shift. , 2009, , .		0
111	Kernel map compression using generalized radial basis functions. , 2009, , .		8
112	Towards a local Kalman filter for visual tracking. , 2009, , .		6
113	Kernel covariance image region description for object tracking. , 2009, , .		12
114	Visual monitoring of airport ground operations. , 2009, , .		0
115	Non-rigid object localization and segmentation using eigenspace representation. , 2009, , .		12
116	A probabilistic shape filter for online contour tracking. , 2009, , .		1
117	Vision-Based Range Regulation of a Leader-Follower Formation. IEEE Transactions on Control Systems Technology, 2009, 17, 442-448.	5.2	34
118	Robust Density Comparison for Visual Tracking. , 2009, , .		5
119	Geometric Observers for Dynamically Evolving Curves. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2008, 30, 1093-1108.	13.9	18
120	Knowledge-Based Segmentation for Tracking Through Deep Turbulence. IEEE Transactions on Control Systems Technology, 2008, 16, 469-474.	5.2	9
121	Fast Optimal Mass Transport for Dynamic Active Contour Tracking on the GPU. , 2007, , .		4
122	On the Evolution of Vector Distance Functions of Closed Curves. International Journal of Computer Vision, 2005, 65, 5-27.	15.6	2
123	Closed Loop Visual Tracking Using Observer-Based Dynamic Active Contours. , 2005, , .		1