

# Patricio Vela

## List of Publications by Year in descending order

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Version: 2024-02-01

123  
papers

3,248  
citations

331259

21  
h-index

205818

48  
g-index

124  
all docs

124  
docs citations

124  
times ranked

2870  
citing authors

| #  | ARTICLE  | IF  | CITATIONS |
|----|--|-----|-----------|
| 1  | A comparative study of efficient initialization methods for the k-means clustering algorithm. Expert Systems With Applications, 2013, 40, 200-210.   | 4.4 | 834       |
| 2  | Real-World Multiobject, Multigrasp Detection. IEEE Robotics and Automation Letters, 2018, 3, 3355-3362.  | 3.3 | 248       |
| 3  | Performance evaluation of ultra wideband technology for construction resource location tracking in harsh environments. Automation in Construction, 2011, 20, 1173-1184.                              | 4.8 | 198       |
| 4  | Construction performance monitoring via still images, time-lapse photos, and video streams: Now, tomorrow, and the future. Advanced Engineering Informatics, 2015, 29, 211-224.                      | 4.0 | 195       |
| 5  | Bayesian Nonparametric Adaptive Control Using Gaussian Processes. IEEE Transactions on Neural Networks and Learning Systems, 2015, 26, 537-550.  | 7.2 | 116       |
| 6  | 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. | 2.0 | 112       |
| 7  | Vision-Based Tower Crane Tracking for Understanding Construction Activity. Journal of Computing in Civil Engineering, 2014, 28, 103-112.   | 2.5 | 108       |
| 8  | 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.   | 3.3 | 78        |
| 9  | Automated Pavement Patch Detection and Quantification Using Support Vector Machines. Journal of Computing in Civil Engineering, 2018, 32, .  | 2.5 | 58        |
| 10 | Locomotor benefits of being a slender and slick sand-swimmer. Journal of Experimental Biology, 2015, 218, 440-50.  | 0.8 | 57        |
| 11 | Optimized selection of key frames for monocular videogrammetric surveying of civil infrastructure. Advanced Engineering Informatics, 2013, 27, 270-282.  | 4.0 | 54        |
| 12 | Good features to track for visual SLAM. , 2015, , .  |     | 49        |
| 13 | 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.           | 7.2 | 46        |
| 14 | Synthesis of Control Barrier Functions Using a Supervised Machine Learning Approach. , 2020, , .   |     | 46        |
| 15 | Generating Absolute-Scale Point Cloud Data of Built Infrastructure Scenes Using a Monocular Camera Setting. Journal of Computing in Civil Engineering, 2015, 29, .                                   | 2.5 | 44        |
| 16 | Automated Trajectory and Path Planning Analysis Based on Ultra Wideband Data. Journal of Computing in Civil Engineering, 2012, 26, 151-160.  | 2.5 | 42        |
| 17 | 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.                   | 6.3 | 42        |
| 18 | Data-Fusion Approaches and Applications for Construction Engineering. Journal of Construction Engineering and Management - ASCE, 2011, 137, 863-869.   | 2.0 | 38        |

| #  | ARTICLE   | IF  | CITATIONS |
|----|---|-----|-----------|
| 19 | Interactive Medical Image Segmentation Using PDE Control of Active Contours. IEEE Transactions on Medical Imaging, 2013, 32, 2127-2139.                                     | 5.4 | 38        |
| 20 | Vision-Based Range Regulation of a Leader-Follower Formation. IEEE Transactions on Control Systems Technology, 2009, 17, 442-448.   | 3.2 | 34        |
| 21 | Good Feature Matching: Toward Accurate, Robust VO/VSLAM With Low Latency. IEEE Transactions on Robotics, 2020, 36, 657-675.   | 7.3 | 33        |
| 22 | Joint CT/CBCT deformable registration and CBCT enhancement for cancer radiotherapy. Medical Image Analysis, 2013, 17, 387-400.  | 7.0 | 32        |
| 23 | Learning Affordance Segmentation for Real-World Robotic Manipulation via Synthetic Images. IEEE Robotics and Automation Letters, 2019, 4, 1140-1147.                        | 3.3 | 32        |
| 24 | Learning binary features online from motion dynamics for incremental loop-closure detection and place recognition. , 2016, , .  |     | 27        |
| 25 | Using Synthetic Data and Deep Networks to Recognize Primitive Shapes for Object Grasping. , 2020, , .   |     | 26        |
| 26 | Information propagation applied to robot-assisted evacuation. , 2012, , .   |     | 22        |
| 27 | Bayesian nonparametric adaptive control of time-varying systems using Gaussian processes. , 2013, , .   |     | 21        |
| 28 | Toward Affordance Detection and Ranking on Novel Objects for Real-World Robotic Manipulation. IEEE Robotics and Automation Letters, 2019, 4, 4070-4077.                     | 3.3 | 21        |
| 29 | Automated detection of pavement patches utilizing support vector machine classification. , 2016, , .  |     | 19        |
| 30 | Good Feature Selection for Least Squares Pose Optimization in VO/VSLAM. , 2018, , .   |     | 19        |
| 31 | Geometric Observers for Dynamically Evolving Curves. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2008, 30, 1093-1108.                                   | 9.7 | 18        |
| 32 | A Stochastic Approach to Diffeomorphic Point Set Registration with Landmark Constraints. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2016, 38, 238-251. | 9.7 | 18        |
| 33 | The Helping Hand: An Assistive Manipulation Framework Using Augmented Reality and Tongue-Drive Interfaces. , 2018, 2018, 2158-2161.   |     | 17        |
| 34 | An Affordance Keypoint Detection Network for Robot Manipulation. IEEE Robotics and Automation Letters, 2021, 6, 2870-2877.  | 3.3 | 16        |
| 35 | Detection of Walls, Floors, and Ceilings in Point Cloud Data. , 2016, , .   |     | 15        |
| 36 | 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.                      | 3.3 | 15        |

| #  | ARTICLE   | IF  | CITATIONS |
|----|---|-----|-----------|
| 37 | GKNet: Grasp keypoint network for grasp candidates detection. International Journal of Robotics Research, 2022, 41, 361-389.                                | 5.8 | 15        |
| 38 | Lower limb pose estimation for monitoring the kicking patterns of infants. , 2016, 2016, 2157-2160.   |     | 14        |
| 39 | A Bayesian nonparametric approach to adaptive control using Gaussian Processes. , 2013, , .   |     | 13        |
| 40 | Incorporating frictional anisotropy in the design of a robotic snake through the exploitation of scales. , 2015, , .  |     | 13        |
| 41 | Cooperative Relative Navigation for Space Rendezvous and Proximity Operations using Controlled Active Vision. Journal of Field Robotics, 2016, 33, 205-228. | 3.2 | 13        |
| 42 | egoTEB: Egocentric, Perception Space Navigation Using Timed-Elastic-Bands. , 2020, , .  |     | 13        |
| 43 | Kernel covariance image region description for object tracking. , 2009, , .   |     | 12        |
| 44 | Non-rigid object localization and segmentation using eigenspace representation. , 2009, , .   |     | 12        |
| 45 | Learning to jump in granular media: Unifying optimal control synthesis with Gaussian process-based regression. , 2017, , .                                  |     | 12        |
| 46 | Robust Adaptive Quadratic Programming and Safety Performance of Nonlinear Systems with Unstructured Uncertainties. , 2018, , .                              |     | 12        |
| 47 | A Joint Network for Grasp Detection Conditioned on Natural Language Commands. , 2021, , .   |     | 12        |
| 48 | Multi-view Fusion for Multi-level Robotic Scene Understanding. , 2021, , .  |     | 12        |
| 49 | Collision free and permutation invariant formation control using the root locus principle. , 2016, , .  |     | 10        |
| 50 | Optimized Parameters for Over-Height Vehicle Detection under Variable Weather Conditions. Journal of Computing in Civil Engineering, 2017, 31, .            | 2.5 | 10        |
| 51 | Good Line Cutting: Towards Accurate Pose Tracking of Line-Assisted VO/VSLAM. Lecture Notes in Computer Science, 2018, , 527-543.                            | 1.0 | 10        |
| 52 | Knowledge-Based Segmentation for Tracking Through Deep Turbulence. IEEE Transactions on Control Systems Technology, 2008, 16, 469-474.                      | 3.2 | 9         |
| 53 | PTZ camera-based adaptive panoramic and multi-layered background model. , 2011, , .   |     | 9         |
| 54 | Comparison of Image-Based and Time-of-Flight-Based Technologies for 3D Reconstruction of Infrastructure. , 2012, , .  |     | 9         |

| #  | ARTICLE   | IF  | CITATIONS |
|----|---|-----|-----------|
| 55 | Shape-centric modeling for control of traveling wave rectilinear locomotion on snake-like robots. Robotics and Autonomous Systems, 2020, 124, 103406.   | 3.0 | 9         |
| 56 | Kernel map compression using generalized radial basis functions. , 2009, , .  |     | 8         |
| 57 | Optimally observable and minimal cardinality monocular SLAM. , 2015, , .  |     | 8         |
| 58 | PIPS: Planning in perception space. , 2017, , .   |     | 8         |
| 59 | Every Hop is an Opportunity: Quickly Classifying and Adapting to Terrain During Targeted Hopping. , 2019, , .   |     | 8         |
| 60 | Evaluation of Bio-Inspired Scales on Locomotion Performance of Snake-Like Robots. Robotica, 2019, 37, 1302-1319.  | 1.3 | 8         |
| 61 | 2D Vision Tracking Methods' Performance Comparison for 3D Tracking of Construction Resources. , 2010, , .   |     | 7         |
| 62 | A local extended Kalman filter for visual tracking. , 2010, , .   |     | 7         |
| 63 | Forage RRT &#x2014; An efficient approach to task-space goal planning for high dimensional systems. , 2014, , .   |     | 7         |
| 64 | Enhancing produce safety: State estimation-based robust adaptive control of a produce wash system. Journal of Process Control, 2020, 86, 1-15.  | 1.7 | 7         |
| 65 | 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. | 3.2 | 7         |
| 66 | Towards a local Kalman filter for visual tracking. , 2009, , .  |     | 6         |
| 67 | Comparison of Camera Motion Estimation Methods for 3D Reconstruction of Infrastructure. , 2011, , .   |     | 6         |
| 68 | Efficient Closed-Loop Detection and Pose Estimation for Vision-Only Relative Localization in Space with A Cooperative Target. , 2014, , .   |     | 6         |
| 69 | Performance Reference Adaptive Control: A Joint Quadratic Programming and Adaptive Control Framework. , 2018, , .   |     | 6         |
| 70 | Optimal Trajectory Planning and Feedback Control of Lateral Undulation in Snake-Like Robots. , 2018, , .  |     | 6         |
| 71 | Potential Gap: A Gap-Informed Reactive Policy for Safe Hierarchical Navigation. IEEE Robotics and Automation Letters, 2021, 6, 8325-8332.   | 3.3 | 6         |
| 72 | Image-Based Trajectory Tracking Through Unknown Environments Without Absolute Positioning. IEEE/ASME Transactions on Mechatronics, 2022, 27, 2098-2106.   | 3.7 | 6         |

| #  | ARTICLE   | IF  | CITATIONS |
|----|---|-----|-----------|
| 73 | Person Reidentification by Kernel PCA Based Appearance Learning. , 2011, , .  |     | 5         |
| 74 | Multimodal Deformable Registration of Traumatic Brain Injury MR Volumes via the Bhattacharyya Distance. IEEE Transactions on Biomedical Engineering, 2013, 60, 2511-2520. | 2.5 | 5         |
| 75 | Bayesian Nonparameteric Model Reference Adaptive Control using Gaussian Processes. , 2013, , .  |     | 5         |
| 76 | A Concurrent Learning Approach to Monocular, Vision-Based Regulation of Leader/Follower Systems. , 2018, , .  |     | 5         |
| 77 | Robust Density Comparison for Visual Tracking. , 2009, , .  |     | 5         |
| 78 | Real-Time Egocentric Navigation Using 3D Sensing. , 2020, , 431-484.  |     | 5         |
| 79 | Shape-centric Modeling for Soft Robot Inchworm Locomotion. , 2021, , .  |     | 5         |
| 80 | Fast Optimal Mass Transport for Dynamic Active Contour Tracking on the GPU. , 2007, , .   |     | 4         |
| 81 | Estimation theory and tracking of deformable objects. , 2010, , .   |     | 4         |
| 82 | Depth invariant visual servoing. , 2011, , .  |     | 4         |
| 83 | Stitchtures. , 2012, , .  |     | 4         |
| 84 | Potential of Time-of-Flight Range Imaging for Object Identification and Manipulation in Construction. Journal of Computing in Civil Engineering, 2014, 28, 06014005.      | 2.5 | 4         |
| 85 | Human-aware mobile robot exploration and motion planner. , 2015, , .  |     | 4         |
| 86 | Low-latency Visual SLAM with Appearance-Enhanced Local Map Building. , 2019, , .  |     | 4         |
| 87 | Closed-Loop Benchmarking of Stereo Visual-Inertial SLAM Systems: Understanding the Impact of Drift and Latency on Tracking Accuracy. , 2020, , .                          |     | 4         |
| 88 | Reduced Set KPCA for Improving the Training and Execution Speed of Kernel Machines. , 2013, , .   |     | 4         |
| 89 | Topologically based decision support tools for aircraft routing. , 2010, , .  |     | 3         |
| 90 | Kernel Map Compression for Speeding the Execution of Kernel-Based Methods. IEEE Transactions on Neural Networks, 2011, 22, 870-879.                                       | 4.8 | 3         |

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|-----|---|------|-----------|
| 91  | A reproducing Kernel Hilbert Space approach for the online update of Radial Bases in neuro-adaptive control. , 2011, , .  |      | 3         |
| 92  | Optimal obstacle avoidance trajectory generation using the root locus principle. , 2015, , .  |      | 3         |
| 93  | Automated feet detection for clinical gait assessment. , 2016, 2016, 2161-2164.   |      | 3         |
| 94  | Hands-Free Assistive Manipulator Using Augmented Reality and Tongue Drive System. , 2018, , .   |      | 3         |
| 95  | Scan2BriM: IFC Model Generation of Concrete Bridges from Point Clouds. , 2019, , .  |      | 3         |
| 96  | Ego-centric Stereo Navigation Using Stixel World. , 2021, , .   |      | 3         |
| 97  | On the Evolution of Vector Distance Functions of Closed Curves. International Journal of Computer Vision, 2005, 65, 5-27.   | 10.9 | 2         |
| 98  | Optimal estimation applied to visual contour tracking. , 2010, , .  |      | 2         |
| 99  | A Probabilistic Contour Observer for Online Visual Tracking. SIAM Journal on Imaging Sciences, 2010, 3, 835-855.  | 1.3  | 2         |
| 100 | Design and Technologies for Understanding Older Adults Social Interactions in Retirement Communities. International Journal of Social Robotics, 2013, 5, 575-591. | 3.1  | 2         |
| 101 | A stochastic approach for non-rigid image registration. Proceedings of SPIE, 2013, , .  | 0.8  | 2         |
| 102 | Improvements to Concrete Column Detection in Live Video. , 2010, , .  |      | 2         |
| 103 | Tracking and Classifying Objects on a Conveyor Belt Using Time-of-Flight Camera. , 2010, , .  |      | 2         |
| 104 | Geometric Inlier Selection for Robust Rigid Registration With Application to Blade Surfaces. IEEE Transactions on Industrial Electronics, 2022, 69, 9206-9215.    | 5.2  | 2         |
| 105 | SGL: Symbolic Goal Learning in a Hybrid, Modular Framework for Human Instruction Following. IEEE Robotics and Automation Letters, 2022, 7, 10375-10382.           | 3.3  | 2         |
| 106 | Closed Loop Visual Tracking Using Observer-Based Dynamic Active Contours. , 2005, , .   |      | 1         |
| 107 | A probabilistic shape filter for online contour tracking. , 2009, , .   |      | 1         |
| 108 | Visual closed-loop tracking with area stabilization. , 2010, , .  |      | 1         |

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|-----|---|-----|-----------|
| 109 | A probabilistic observer for visual tracking. , 2010, , .   |     | 1         |
| 110 | Pre-image Problem in Manifold Learning and Dimensional Reduction Methods. , 2010, , .   |     | 1         |
| 111 | Generating the sparse point cloud of a civil infrastructure scene using a single video camera under practical constraints. , 2011, , .                  |     | 1         |
| 112 | Closed-loop path following of traveling wave rectilinear motion through obstacle-strewn terrain. , 2017, , .  |     | 1         |
| 113 | Communication Technologies for Older Adults in Retirement Communities. Advances in Human and Social Aspects of Technology Book Series, 2014, , 491-501. | 0.3 | 1         |
| 114 | Teleoperation of Semi-autonomous Robots Through Uncertain Environments. , 2022, , .   |     | 1         |
| 115 | Noise estimation and adaptive filtering during visual tracking. , 2009, , .   |     | 0         |
| 116 | Robust Target Localization and Segmentation Using Graph Cut, KPCA and Mean-Shift. , 2009, , .   |     | 0         |
| 117 | Visual monitoring of airport ground operations. , 2009, , .   |     | 0         |
| 118 | Delay estimation for wireless LAN control of nonlinear systems. , 2010, , .   |     | 0         |
| 119 | Stochastic image registration with user constraints. , 2013, 8669, .  |     | 0         |
| 120 | Top-Down Partitioning of Reinforced Concrete Bridge Components. , 2019, , .   |     | 0         |
| 121 | TH-C-WAB-02: Interactive Segmentation of Structures in the Head and Neck Using Steerable Active Contours. Medical Physics, 2013, 40, 536-536.           | 1.6 | 0         |
| 122 | NavTuner: Learning a Scene-Sensitive Family of Navigation Policies. , 2021, , .   |     | 0         |
| 123 | Outdoor Perception Space Navigation Experimental Procedures. , 2022, , .  |     | 0         |