

# Hesheng Wang

## List of Publications by Year in descending order

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146  
papers

3,400  
citations

185998

28  
h-index

214527

47  
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146  
all docs

146  
docs citations

146  
times ranked

2049  
citing authors

#	ARTICLE	IF	CITATIONS
1	Image-Based Visual Impedance Force Control for Contact Aerial Manipulation. IEEE Transactions on Automation Science and Engineering, 2023, 20, 518-527.	3.4	17
2	Vision-Based Impedance Control of an Aerial Manipulator Using a Nonlinear Observer. IEEE Transactions on Automation Science and Engineering, 2023, 20, 1441-1451.	3.4	3
3	Hybrid Adaptive Vision-Force Control Under the Bottleneck Constraint. IEEE Transactions on Control Systems Technology, 2023, 31, 382-393.	3.2	1
4	Robust Image-Based Landing Control of a Quadrotor on an Unpredictable Moving Vehicle Using Circle Features. IEEE Transactions on Automation Science and Engineering, 2023, 20, 1429-1440.	3.4	7
5	Motion Projection Consistency-Based 3-D Human Pose Estimation With Virtual Bones From Monocular Videos. IEEE Transactions on Cognitive and Developmental Systems, 2023, 15, 784-793.	2.6	3
6	Unsupervised Learning of Depth, Optical Flow and Pose With Occlusion From 3D Geometry. IEEE Transactions on Intelligent Transportation Systems, 2022, 23, 308-320.	4.7	31
7	Vision-Based Control of an Industrial Vehicle in Unstructured Environments. IEEE Transactions on Control Systems Technology, 2022, 30, 598-610.	3.2	3
8	Domain-Invariant Similarity Activation Map Contrastive Learning for Retrieval-Based Long-Term Visual Localization. IEEE/CAA Journal of Automatica Sinica, 2022, 9, 313-328.	8.5	19
9	Visual Servoing of Flexible-Link Manipulators by Considering Vibration Suppression Without Deformation Measurements. IEEE Transactions on Cybernetics, 2022, 52, 12454-12463.	6.2	19
10	Fully Uncalibrated Image-Based Visual Servoing of 2DOFs Planar Manipulators With a Fixed Camera. IEEE Transactions on Cybernetics, 2022, 52, 10895-10908.	6.2	13
11	Visual Tracking Control of Deformable Objects With a FAT-Based Controller. IEEE Transactions on Industrial Electronics, 2022, 69, 1673-1681.	5.2	7
12	Integrated Task Allocation and Path Coordination for Large-Scale Robot Networks With Uncertainties. IEEE Transactions on Automation Science and Engineering, 2022, 19, 2750-2761.	3.4	19
13	Visual Servoing Pushing Control of the Soft Robot with Active Pushing Force Regulation. Soft Robotics, 2022, 9, 690-704.	4.6	10
14	Visuomotor Reinforcement Learning for Multirobot Cooperative Navigation. IEEE Transactions on Automation Science and Engineering, 2022, 19, 3234-3245.	3.4	9
15	Unsupervised Monocular Visual Odometry Based on Confidence Evaluation. IEEE Transactions on Intelligent Transportation Systems, 2022, 23, 5387-5396.	4.7	9
16	Uncalibrated Visual Servoing for a Planar Two Link Rigid-Flexible Manipulator Without Joint-Space-Velocity Measurement. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2022, 52, 1935-1947.	5.9	9
17	SFGAN: Unsupervised Generative Adversarial Learning of 3D Scene Flow from the 3D Scene Self. Advanced Intelligent Systems, 2022, 4, 2100197.	3.3	11
18	Finite-Time Cooperative Control for Bearing-Defined Leader-Following Formation of Multiple Double-Integrators. IEEE Transactions on Cybernetics, 2022, 52, 13363-13372.	6.2	14

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19	Spherical Interpolated Convolutional Network With Distance-Feature Density for 3-D Semantic Segmentation of Point Clouds. IEEE Transactions on Cybernetics, 2022, 52, 13546-13556.	6.2	11
20	Vision-Based Contact Point Selection for the Fully Non-Fixed Contact Manipulation of Deformable Objects. IEEE Robotics and Automation Letters, 2022, 7, 4368-4375.	3.3	1
21	Keypoint-Based Planar Bimanual Shaping of Deformable Linear Objects Under Environmental Constraints With Hierarchical Action Framework. IEEE Robotics and Automation Letters, 2022, 7, 5222-5229.	3.3	17
22	Residual 3-D Scene Flow Learning With Context-Aware Feature Extraction. IEEE Transactions on Instrumentation and Measurement, 2022, 71, 1-9.	2.4	11
23	Viewpoint-Invariant Loop Closure Detection Using Step-Wise Learning With Controlling Embeddings of Landmarks. IEEE Transactions on Intelligent Transportation Systems, 2022, 23, 20148-20159.	4.7	2
24	Feedback Control for Collision-Free Nonholonomic Vehicle Navigation on SE(2) With Null Space Circumvention. IEEE/ASME Transactions on Mechatronics, 2022, , 1-11.	3.7	1
25	Unsupervised Learning of Optical Flow With Non-Occlusion From Geometry. IEEE Transactions on Intelligent Transportation Systems, 2022, 23, 20850-20859.	4.7	9
26	FusionNet: Coarse-to-Fine Extrinsic Calibration Network of LiDAR and Camera with Hierarchical Point-pixel Fusion. , 2022, , .		4
27	Prediction, Planning, and Coordination of Thousand-Warehousing-Robot Networks With Motion and Communication Uncertainties. IEEE Transactions on Automation Science and Engineering, 2021, 18, 1705-1717.	3.4	23
28	Visual Servoing of a Flexible Aerial Refueling Boom With an Eye-in-Hand Camera. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2021, 51, 6282-6292.	5.9	11
29	Active Fault Detection of Soft Manipulator in Visual Servoing. IEEE Transactions on Industrial Electronics, 2021, 68, 9778-9788.	5.2	24
30	Vision-Based Cutting Control of Deformable Objects With Surface Tracking. IEEE/ASME Transactions on Mechatronics, 2021, 26, 2016-2026.	3.7	32
31	A real-time quadrotor trajectory planning framework based on B-spline and nonuniform kinodynamic search. Journal of Field Robotics, 2021, 38, 452-475.	3.2	15
32	S-VIT: Stereo Visual-Inertial Tracking of Lower Limb for Physiotherapy Rehabilitation in Context of Comprehensive Evaluation of SLAM Systems. IEEE Transactions on Automation Science and Engineering, 2021, 18, 1550-1562.	3.4	4
33	Dynamic State Estimation and Control of a Heavy Tractor-Trailers Vehicle. IEEE/ASME Transactions on Mechatronics, 2021, 26, 1467-1478.	3.7	11
34	Hybrid Vision/Force Control of Soft Robot Based on a Deformation Model. IEEE Transactions on Control Systems Technology, 2021, 29, 661-671.	3.2	19
35	DASGIL: Domain Adaptation for Semantic and Geometric-Aware Image-Based Localization. IEEE Transactions on Image Processing, 2021, 30, 1342-1353.	6.0	26
36	Anchor-Based Spatio-Temporal Attention 3-D Convolutional Networks for Dynamic 3-D Point Cloud Sequences. IEEE Transactions on Instrumentation and Measurement, 2021, 70, 1-11.	2.4	13

#	ARTICLE	IF	CITATIONS
37	Adaptive visual servo control law for finite-time tracking to land quadrotor on moving platform using virtual reticle algorithm. <i>Robotics and Autonomous Systems</i> , 2021, 141, 103764.	3.0	8
38	Tooth Segmentation of Dental Mesh Based on Improved Region Growing. , 2021, , .		1
39	Visual Servoing of a Cable-Driven Soft Robot Manipulator With Shape Feature. <i>IEEE Robotics and Automation Letters</i> , 2021, 6, 4281-4288.	3.3	38
40	Soft Robotics: Morphology and Morphology-inspired Motion Strategy. <i>IEEE/CAA Journal of Automatica Sinica</i> , 2021, 8, 1500-1522.	8.5	24
41	Hierarchical Attention Learning of Scene Flow in 3D Point Clouds. <i>IEEE Transactions on Image Processing</i> , 2021, 30, 5168-5181.	6.0	33
42	Hybrid Vision/Force Control for Interaction with the Bottle-like Object. , 2021, , .		1
43	Unsupervised Learning of 3D Scene Flow from Monocular Camera. , 2021, , .		10
44	Towards Collision Detection, Localization and Force Estimation for a Soft Cable-driven Robot Manipulator. , 2021, , .		0
45	PWCLO-Net: Deep LiDAR Odometry in 3D Point Clouds Using Hierarchical Embedding Mask Optimization. , 2021, , .		32
46	Soft Manipulator Fault Detection and Identification Using ANC-based LSTM. , 2021, , .		5
47	Toward State-Unsaturation Guaranteed Fault Detection Method in Visual Servoing of Soft Robot Manipulators. , 2021, , .		4
48	PLReg3D: Learning 3D Local and Global Descriptors Jointly for Global Localization. , 2021, , .		1
49	Robust Simultaneous Tracking and Local Dense Structured Mapping at Scenes lack of Geometric Features. , 2021, , .		0
50	NMF: an Efficient Method for Detecting the Fallen Leaves Using Cleaning Robots on the Road. , 2021, , .		0
51	Attacking End-to-End Visual Navigation Model: How Weak Existing Learning-Based Approaches Can Be?. , 2021, , .		1
52	A Self-Repairing Algorithm With Optimal Repair Path for Maintaining Motion Synchronization of Mobile Robot Network. <i>IEEE Transactions on Systems, Man, and Cybernetics: Systems</i> , 2020, 50, 815-828.	5.9	15
53	Calibration-Free Image-Based Trajectory Tracking Control of Mobile Robots With an Overhead Camera. <i>IEEE Transactions on Automation Science and Engineering</i> , 2020, 17, 933-946.	3.4	12
54	Robust Path Following of the Tractor-Trailers System in GPS-Denied Environments. <i>IEEE Robotics and Automation Letters</i> , 2020, 5, 500-507.	3.3	23

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55	Adaptive Visual Servoing for an Underwater Soft Robot Considering Refraction Effects. IEEE Transactions on Industrial Electronics, 2020, 67, 10575-10586.	5.2	28
56	Hierarchical Quadtree Feature Optical Flow Tracking Based Sparse Pose-Graph Visual-Inertial SLAM. , 2020, , .		5
57	Leader-Following Formation Control of Nonholonomic Mobile Robots With Velocity Observers. IEEE/ASME Transactions on Mechatronics, 2020, 25, 1747-1755.	3.7	29
58	Visual Servo-Collision Avoidance Hybrid Task by Considering Detection and Localization of Contact for a Soft Manipulator. IEEE/ASME Transactions on Mechatronics, 2020, 25, 1310-1321.	3.7	16
59	Purely Image-Based Pose Stabilization of Nonholonomic Mobile Robots With a Truly Uncalibrated Overhead Camera. IEEE Transactions on Robotics, 2020, 36, 724-742.	7.3	12
60	Deep Learning-Based Localization and Perception Systems: Approaches for Autonomous Cargo Transportation Vehicles in Large-Scale, Semiclosed Environments. IEEE Robotics and Automation Magazine, 2020, 27, 139-150.	2.2	21
61	End-to-End 3D Point Cloud Learning for Registration Task Using Virtual Correspondences. , 2020, , .		13
62	Adaptive Image-based Visual Servoing of Mobile Manipulator with an Uncalibrated Fixed Camera. , 2020, , .		1
63	Robust Dynamic State Estimation for Lateral Control of an Industrial Tractor Towing Multiple Passive Trailers. , 2020, , .		0
64	Vision-Based Dynamic Control of Car-Like Mobile Robots. , 2019, , .		7
65	Unsupervised Learning of Monocular Depth and Ego-Motion Using Multiple Masks. , 2019, , .		23
66	Underwater Dynamic Visual Servoing for a Soft Robot Arm With Online Distortion Correction. IEEE/ASME Transactions on Mechatronics, 2019, 24, 979-989.	3.7	52
67	Toward Visibility Guaranteed Visual Servoing Control of Quadrotor UAVs. IEEE/ASME Transactions on Mechatronics, 2019, 24, 1087-1095.	3.7	37
68	Local Pose optimization with an Attention-based Neural Network. , 2019, , .		2
69	Real-time Trajectory Generation for Quadrotors using B-spline based Non-uniform Kinodynamic Search. , 2019, , .		6
70	LPD-Net: 3D Point Cloud Learning for Large-Scale Place Recognition and Environment Analysis. , 2019, , .		158
71	A Peg-in-hole Assembly Strategy Using Uncalibrated Visual Servoing. , 2019, , .		2
72	A Map Accessibility Analysis Algorithm for Mobile Robot Navigation in Outdoor Environment. , 2019, , .		1

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73	Depth Estimation and Background Segmentation for Deformable Packages from a Single Image Using FCRN. , 2019, , .		1
74	Retrieval-based Localization Based on Domain-invariant Feature Learning under Changing Environments. , 2019, , .		16
75	Self-localization Using Point Cloud Matching at the Object Level in Outdoor Environment. , 2019, , .		3
76	Adaptive FOV Control of Laparoscopes With Programmable Composed Constraints. IEEE Transactions on Medical Robotics and Bionics, 2019, 1, 206-217.	2.1	37
77	Image-Based Position Control of Mobile Robots With a Completely Unknown Fixed Camera. IEEE Transactions on Automatic Control, 2018, 63, 3016-3023.	3.6	34
78	Ego-Motion Estimation of a Quadrotor Based on Nonlinear Observer. IEEE/ASME Transactions on Mechatronics, 2018, 23, 1138-1147.	3.7	10
79	Formation Control of Nonholonomic Mobile Robots Without Position and Velocity Measurements. IEEE Transactions on Robotics, 2018, 34, 434-446.	7.3	90
80	Development of a Novel Continuum Robotic System for Maxillary Sinus Surgery. IEEE/ASME Transactions on Mechatronics, 2018, 23, 1226-1237.	3.7	62
81	Constraint Gaussian Filter With Virtual Measurement for On-Line Camera-Odometry Calibration. IEEE Transactions on Robotics, 2018, 34, 630-644.	7.3	8
82	Adaptive Visual Servoing of Contour Features. IEEE/ASME Transactions on Mechatronics, 2018, 23, 811-822.	3.7	46
83	Automatic illumination planning for robot vision inspection system. Neurocomputing, 2018, 275, 19-28.	3.5	21
84	Planning and Tracking in Image Space for Image-Based Visual Servoing of a Quadrotor. IEEE Transactions on Industrial Electronics, 2018, 65, 3376-3385.	5.2	44
85	A real-time visual-inertial mapping and localization method by fusing unstable GPS. , 2018, , .		4
86	A Novel Global Localization Method Using 3D Laser Range Data in Large-Scale and Sparse Environments. , 2018, , .		1
87	Vision-Based State Estimation and Trajectory Tracking Control of Car-Like Mobile Robots with Wheel Skidding and Slipping. , 2018, , .		5
88	Design, Fabrication, and Analysis of a Sensorized Soft Robotic Gripper. , 2018, , .		6
89	Underwater Dynamic Modeling for a Cable-Driven Soft Robot Arm. IEEE/ASME Transactions on Mechatronics, 2018, 23, 2726-2738.	3.7	38
90	Nonlinear Vision-Based Observer for Visual Servo Control of an Aerial Robot in Global Positioning System Denied Environments. Journal of Mechanisms and Robotics, 2018, 10, .	1.5	10

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91	Eye-in-Hand Tracking Control of a Free-Floating Space Manipulator. IEEE Transactions on Aerospace and Electronic Systems, 2017, 53, 1855-1865.	2.6	58
92	Image-Based Visual Servoing of a Quadrotor Using Virtual Camera Approach. IEEE/ASME Transactions on Mechatronics, 2017, 22, 972-982.	3.7	113
93	Visual Servoing of Soft Robot Manipulator in Constrained Environments With an Adaptive Controller. IEEE/ASME Transactions on Mechatronics, 2017, 22, 41-50.	3.7	156
94	A cable-driven soft robot surgical system for cardiothoracic endoscopic surgery: preclinical tests in animals. Surgical Endoscopy and Other Interventional Techniques, 2017, 31, 3152-3158.	1.3	66
95	Three-Dimensional Dynamics for Cable-Driven Soft Manipulator. IEEE/ASME Transactions on Mechatronics, 2017, 22, 18-28.	3.7	114
96	Adaptive Vision-Based Leader-Follower Formation Control of Mobile Robots. IEEE Transactions on Industrial Electronics, 2017, 64, 2893-2902.	5.2	111
97	Image-based visual tracking of a moving target for a quadrotor. , 2017, , .		8
98	Autonomous navigation of a quadrotor in unknown environments. , 2017, , .		2
99	Distributed pair-wised transportation planning with incidental deliveries for multiple mobile robots. , 2017, , .		3
100	Actuator-fault-tolerant trajectory tracking control for multi-robot system under directed network topologies and communication delays. , 2017, , .		4
101	Uncalibrated peg-hole alignment using visual servoing. , 2017, , .		1
102	Distance control of soft robot using proximity sensor for beating heart surgery. , 2016, , .		4
103	Vision-based cutting control of deformable objects. , 2016, , .		4
104	Unknown constrained mechanisms operation based on dynamic interactive control. CAAI Transactions on Intelligence Technology, 2016, 1, 259-271.	3.4	8
105	Leader-Following Formation Tracking Control of Mobile Robots Without Direct Position Measurements. IEEE Transactions on Automatic Control, 2016, 61, 4131-4137.	3.6	85
106	Design and implementation of visual inspection system handed in tokamak flexible in-vessel robot. Fusion Engineering and Design, 2016, 106, 21-28.	1.0	7
107	Shape Detection Algorithm for Soft Manipulator Based on Fiber Bragg Gratings. IEEE/ASME Transactions on Mechatronics, 2016, 21, 2977-2982.	3.7	116
108	An Incidental Delivery Based Method for Resolving Multirobot Pairwised Transportation Problems. IEEE Transactions on Intelligent Transportation Systems, 2016, 17, 1852-1866.	4.7	18

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109	The Lower Limbs Kinematics Analysis by Wearable Sensor Shoes. IEEE Sensors Journal, 2016, 16, 2627-2638.	2.4	43
110	Adaptive Task-Space Cooperative Tracking Control of Networked Robotic Manipulators Without Task-Space Velocity Measurements. IEEE Transactions on Cybernetics, 2016, 46, 2386-2398.	6.2	64
111	Active global localization based on localizability for mobile robots. Robotica, 2015, 33, 1609-1627.	1.3	18
112	Adaptive Image-Based Leader-Follower Approach of Mobile Robot with Omnidirectional Camera. Journal of Applied Mathematics, 2015, 2015, 1-12.	0.4	0
113	Motion analysis and experimental study of a cable-driven soft surgical robot. , 2015, , .		8
114	Trajectory planning of tokamak flexible in-vessel inspection robot. Fusion Engineering and Design, 2015, 98-99, 1678-1682.	1.0	3
115	Vision-based online vibration estimation of the in-vessel inspection flexible robot with short-time Fourier transformation. Fusion Engineering and Design, 2015, 98-99, 1683-1687.	1.0	1
116	Adaptive Image-Based Trajectory Tracking Control of Wheeled Mobile Robots With an Uncalibrated Fixed Camera. IEEE Transactions on Control Systems Technology, 2015, 23, 2266-2282.	3.2	91
117	A unified design method for adaptive visual tracking control of robots with eye-in-hand/fixed camera configuration. Automatica, 2015, 59, 97-105.	3.0	48
118	Action selection for active and cooperative global localization based on localizability estimation. , 2014, , .		10
119	Adaptive visual servoing using curve features with unknown geometrical parameters. , 2014, , .		3
120	Adaptive image-based visual servoing of wheeled mobile robots with fixed camera configuration. , 2014, , .		13
121	Torque constraints for hexapod robot slope walking. , 2014, , .		2
122	Dynamic Modeling and Image-based Adaptive Visual Servoing of Cable-driven Soft Robotic Manipulator. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 11884-11889.	0.4	8
123	Adaptive visual servoing using common image features with unknown geometric parameters. Automatica, 2013, 49, 2453-2460.	3.0	35
124	Time-jerk optimal trajectory planning for robotic manipulators. , 2013, , .		9
125	Uncalibrated fixed-camera visual servoing of robot manipulators by considering the motor dynamics. , 2012, , .		2
126	Visual tracking of robots in uncalibrated environments. Mechatronics, 2012, 22, 390-397.	2.0	22



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127	A New Approach to Dynamic Eye-in-Hand Visual Tracking Using Nonlinear Observers. IEEE/ASME Transactions on Mechatronics, 2011, 16, 387-394.	3.7	60
128	Visual tracking of robots in uncalibrated environments. , 2011, , .		1
129	Uncalibrated Visual Tracking Control Without Visual Velocity. IEEE Transactions on Control Systems Technology, 2010, 18, 1359-1370.	3.2	71
130	Adaptive visual servoing using common image features with unknown geometry. , 2008, , .		4
131	Adaptive Visual Servoing Using Point and Line Features With an Uncalibrated Eye-in-Hand Camera. , 2008, 24, 843-857.		123
132	Adaptive visual servoing of autonomous helicopters. , 2008, , .		0
133	Distributed target tracking with energy consideration using mobile sensor networks. , 2008, , .		9
134	Uncalibrated dynamic visual servoing using line features. , 2008, , .		2
135	Adaptive visual servoing using angle and distance. , 2008, , .		2
136	Uncalibrated Dynamic Visual Tracking of Manipulators. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	2
137	Dynamic Visual Tracking for Manipulators Using an Uncalibrated Fixed Camera. , 2007, 23, 610-617.		94
138	Dynamic Visual Tracking with Eye-in-hand Camera. , 2007, , .		1
139	Uncalibrated visual servoing of robots using a depth-independent interaction matrix. , 2006, 22, 804-817.		242
140	Adaptive Visual Servoing of Robot Manipulators Using Uncalibrated Eye-in-hand Visual Feedback. , 2006, , .		1
141	Dynamic Visual Servoing of Robots Using Uncalibrated Eye-in-hand Visual Feedback. , 2006, , .		8
142	Dynamic visual servoing of robots in uncalibrated environments. , 2005, , .		5
143	A New Approach to Visual Servoing in Uncalibrated Environments. , 0, , .		1
144	Dynamic Visual Servoing of Robots in Uncalibrated Environments. , 0, , .		5

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145	Adaptive Image-Based Trajectory Tracking of Robots. , 0, , .		6
146	Uncalibrated visual tracking control without visual velocity. , 0, , .		10