Shoudong Huang

List of Publications by Year
in descending order

161 papers	3,219 citations
201674 27 h-index	289244 40 g-index
164 all docs	164 docs citations
164 times ranked	2481 citing authors

#	Article	IF	Citations
1	Anchor Selection for SLAM Based on Graph Topology and Submodular Optimization. IEEE Transactions on Robotics, 2022, 38, 329-350.	10.3	3
2	A Right Invariant Extended Kalman Filter for Object Based SLAM. IEEE Robotics and Automation Letters, 2022, 7, 1316-1323.	5.1	8
3	Proof of concept study for using UR10 robot to help total hip replacement. International Journal of Medical Robotics and Computer Assisted Surgery, 2022, 18, e2359.	2.3	1
4	2-Entity Random Sample Consensus for Robust Visual Localization: Framework, Methods, and Verifications. IEEE Transactions on Industrial Electronics, 2021, 68, 4519-4528.	7.9	17
5	A Stacked LSTM-Based Approach for Reducing Semantic Pose Estimation Error. IEEE Transactions on Instrumentation and Measurement, 2021, 70, 1-14.	4.7	15
6	IN2LAAMA: Inertial Lidar Localization Autocalibration and Mapping. IEEE Transactions on Robotics, 2021, 37, 275-290.	10.3	36
7	3D LiDAR Map Compression for Efficient Localization on Resource Constrained Vehicles. IEEE Transactions on Intelligent Transportation Systems, 2021, 22, 837-852.	8.0	20
8	Necessary and Sufficient Conditions for Observability of SLAM-Based TDOA Sensor Array Calibration and Source Localization. IEEE Transactions on Robotics, 2021, 37, 1451-1468.	10.3	14
9	GEM: Online Globally Consistent Dense Elevation Mapping for Unstructured Terrain. IEEE Transactions on Instrumentation and Measurement, 2021, 70, 1-13.	4.7	12
10	A Template-Based 3D Reconstruction of Colon Structures and Textures From Stereo Colonoscopic Images. IEEE Transactions on Medical Robotics and Bionics, 2021, 3, 85-95.	3.2	15
11	Cramér€"Rao Bounds and Optimal Design Metrics for Pose-Graph SLAM. IEEE Transactions on Robotics, 2021, 37, 627-641.	10.3	22
12	GSAP: A Global Structure Attention Pooling Method for Graph-Based Visual Place Recognition. Remote Sensing, 2021, 13, 1467.	4.0	4
13	2D Laser SLAM With Closed Shape Features: Fourier Series Parameterization and Submap Joining. IEEE Robotics and Automation Letters, 2021, 6, 1527-1534.	5.1	9
14	Direct 3D ultrasound fusion for transesophageal echocardiography. Computers in Biology and Medicine, 2021, 134, 104502.	7.0	4
15	3D Reconstruction of Deformable Colon Structures based on Preoperative Model and Deep Neural Network. , 2021, , .		3
16	Invariant EKF based 2D Active SLAM with Exploration Task. , 2021, , .		5
17	Direct Bundle Adjustment for 3D Image Fusion with Application to Transesophageal Echocardiography*. , 2021, , .		0
18	Some Research Questions for SLAM in Deformable Environments. , 2021, , .		2

#	Article	IF	Citations
19	3D LiDAR-Based Global Localization Using Siamese Neural Network. IEEE Transactions on Intelligent Transportation Systems, 2020, 21, 1380-1392.	8.0	59
20	Description of stability for linear time-invariant systems based on the first curvature. Mathematical Methods in the Applied Sciences, 2020, 43, 486-511.	2.3	2
21	Active SLAM for Mobile Robots With Area Coverage and Obstacle Avoidance. IEEE/ASME Transactions on Mechatronics, 2020, 25, 1182-1192.	5.8	63
22	Efficient two step optimization for large embedded deformation graph based SLAM. , 2020, , .		1
23	A Deep Learning Framework for Robust Semantic SLAM. , 2020, , .		3
24	Dense Isometric Non-Rigid Shape-From-Motion Based on Graph Optimization and Edge Selection. IEEE Robotics and Automation Letters, 2020, 5, 5889-5896.	5.1	1
25	Aortic 3D Deformation Reconstruction using 2D X-ray Fluoroscopy and 3D Pre-operative Data for Endovascular Interventions. , 2020, , .		3
26	2D Laser SLAM With General Features Represented by Implicit Functions. IEEE Robotics and Automation Letters, 2020, 5, 4329-4336.	5.1	14
27	Analysis of Minima for Geodesic and Chordal Cost for a Minimal 2-D Pose-Graph SLAM Problem. IEEE Robotics and Automation Letters, 2020, 5, 323-330.	5.1	1
28	Gaussian Process Preintegration for Inertial-Aided State Estimation. IEEE Robotics and Automation Letters, 2020, 5, 2108-2114.	5.1	14
29	Broadcast Your Weaknesses: Cooperative Active Pose-Graph SLAM for Multiple Robots. IEEE Robotics and Automation Letters, 2020, 5, 2200-2207.	5.1	16
30	Feature-based visual simultaneous localization and mapping: a survey. SN Applied Sciences, 2020, 2, 1.	2.9	27
31	Deep Learning Assisted Automatic Intra-operative 3D Aortic Deformation Reconstruction. Lecture Notes in Computer Science, 2020, , 660-669.	1.3	4
32	Parallax Bundle Adjustment on Manifold with Improved Global Initialization. Springer Proceedings in Advanced Robotics, 2020, , 621-638.	1.3	1
33	Designing Sparse Reliable Pose-Graph SLAM: A Graph-Theoretic Approach. Springer Proceedings in Advanced Robotics, 2020, , 17-32.	1.3	1
34	Globally optimal consensus maximization for robust visual inertial localization in point and line map. , 2020, , .		3
35	IN2LAMA: INertial Lidar Localisation And MApping. , 2019, , .		37
36	Online Estimation of Ocean Current from Sparse GPS Data for Underwater Vehicles. , 2019, , .		25

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37	On-line 3D active pose-graph SLAM based on key poses using graph topology and sub-maps. , 2019, , .		12
38	Reliable Graphs for SLAM. International Journal of Robotics Research, 2019, 38, 260-298.	8.5	31
39	A submap joining algorithm for 3D reconstruction using an RGB-D camera based on point and plane features. Robotics and Autonomous Systems, 2019, 118, 93-111.	5.1	8
40	Improvement of the inspection-repair process with building information modelling and image classification. Facilities, 2019, 37, 395-414.	1.6	29
41	Robust Global Structure From Motion Pipeline With Parallax on Manifold Bundle Adjustment and Initialization. IEEE Robotics and Automation Letters, 2019, 4, 2164-2171.	5.1	5
42	Conic Feature Based Simultaneous Localization and Mapping in Open Environment via 2D Lidar. IEEE Access, 2019, 7, 173703-173718.	4.2	7
43	A review of optimisation strategies used in simultaneous localisation and mapping. Journal of Control and Decision, 2019, 6, 61-74.	1.6	5
44	Linear SLAM: Linearising the SLAM problems using submap joining. Automatica, 2019, 100, 231-246.	5.0	12
45	Topological local-metric framework for mobile robots navigation: a long term perspective. Autonomous Robots, 2019, 43, 197-211.	4.8	30
46	Robust Incremental SLAM Under Constrained Optimization Formulation. IEEE Robotics and Automation Letters, 2018, 3, 1207-1214.	5.1	23
47	A Submap Joining Based RGB-D SLAM Algorithm Using Planes as Features. Springer Proceedings in Advanced Robotics, 2018, , 367-382.	1.3	7
48	Dynamic Reconstruction of Deformable Soft-Tissue With Stereo Scope in Minimal Invasive Surgery. IEEE Robotics and Automation Letters, 2018, 3, 155-162.	5.1	45
49	Decentralised Mission Monitoring with Spatiotemporal Optimal Stopping. , 2018, , .		2
50	Predicting Objective Function Change in Pose-Graph Optimization. , 2018, , .		2
51	3D Lidar-IMU Calibration Based on Upsampled Preintegrated Measurements for Motion Distortion Correction. , 2018, , .		50
52	Efficient Active SLAM Based on Submap Joining, Graph Topology and Convex Optimization. , 2018, , .		12
53	Advanced Control for Singular Systems with Applications. Mathematical Problems in Engineering, 2018, 2018, 1-2.	1.1	1
54	Comparison of EKF based SLAM and optimization based SLAM algorithms. , 2018, , .		17

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55	MIS-SLAM: Real-Time Large-Scale Dense Deformable SLAM System in Minimal Invasive Surgery Based on Heterogeneous Computing. IEEE Robotics and Automation Letters, 2018, 3, 4068-4075.	5.1	80
56	Comparison of two different objective functions in 2D point feature SLAM. Automatica, 2018, 97, 172-181.	5.0	4
57	Linear SFM: A hierarchical approach to solving structure-from-motion problems by decoupling the linear and nonlinear components. ISPRS Journal of Photogrammetry and Remote Sensing, 2018, 141, 275-289.	11.1	7
58	Convergence and Consistency Analysis for a 3-D Invariant-EKF SLAM. IEEE Robotics and Automation Letters, 2017, 2, 733-740.	5.1	109
59	High quality 3D reconstruction of indoor environments using RGB-D sensors. , 2017, , .		6
60	Evaluation of different SLAM algorithms using Google tangle data. , 2017, , .		1
61	An invariant-EKF VINS algorithm for improving consistency. , 2017, , .		57
62	Gaussian process model enabled particle filter for device-free localization. , 2017, , .		0
63	Deconstruction waste management through 3d reconstruction and bim: a case study. Visualization in Engineering, 2017, 5, .	8.8	54
64	Device-Free Localization via an Extreme Learning Machine with Parameterized Geometrical Feature Extraction. Sensors, 2017, 17, 879.	3.8	43
65	Incremental SQP method for constrained optimization formulation in SLAM. , 2016, , .		5
66	A framework for multi-session RGBD SLAM in low dynamic workspace environment. CAAI Transactions on Intelligence Technology, 2016, 1, 90-103.	8.1	17
67	A method of state estimation for underwater vehicle navigation around a cylindrical structure. , 2016, , .		3
68	A Sparse Separable SLAM Back-End. IEEE Transactions on Robotics, 2016, 32, 1536-1549.	10.3	13
69	A critique of current developments in simultaneous localization and mapping. International Journal of Advanced Robotic Systems, 2016, 13, 172988141666948.	2.1	47
70	Tree-connectivity: Evaluating the graphical structure of SLAM. , 2016, , .		11
71	Fast, on-board, model-aided visual-inertial odometry system for quadrotor micro aerial vehicles. , 2016, , .		15
72	Building a dense surface map incrementally from semi-dense point cloud and RGBimages. Frontiers of Information Technology and Electronic Engineering, 2015, 16, 594-606.	2.6	1

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73	MULTI-SESSION SLAM OVER LOW DYNAMIC WORKSPACE USING RGBD SENSOR. , 2015, , .		0
74	An approach to base placement for effective collaboration of multiple autonomous industrial robots. , 2015, , .		13
75	Line matching based on planar homography for stereo aerial images. ISPRS Journal of Photogrammetry and Remote Sensing, 2015, 104, 1-17.	11.1	31
76	ParallaxBA: bundle adjustment using parallax angle feature parametrization. International Journal of Robotics Research, 2015, 34, 493-516.	8.5	36
77	A new feature parametrization for monocular SLAM using line features. Robotica, 2015, 33, 513-536.	1.9	11
78	Dimensionality reduction for point feature SLAM problems with spherical covariance matrices. Automatica, 2015, 51, 149-157.	5.0	13
79	Novel insights into the impact of graph structure on SLAM. , 2014, , .		28
80	Motion segmentation based robust RGB-D SLAM. , 2014, , .		18
81	Comparison of two strategies of path planning for underwater robot navigation under uncertainty. , 2014, , .		0
82	Towards dense moving object segmentation based robust dense RGB-D SLAM in dynamic scenarios. , 2014, , .		45
83	Task oriented area partitioning and allocation for optimal operation of multiple industrial robots in unstructured environments. , 2014, , .		14
84	Input-to-state stability of a class of descriptor systems. International Journal of Robust and Nonlinear Control, 2014, 24, 97-109.	3.7	11
85	Rescheduling policies for large-scale task allocation of autonomous straddle carriers under uncertainty at automated container terminals. Robotics and Autonomous Systems, 2014, 62, 506-514.	5.1	30
86	-SIFT: SIFT feature extraction and matching for large images in large-scale aerial photogrammetry. ISPRS Journal of Photogrammetry and Remote Sensing, 2014, 91, 1-16.	11.1	60
87	Linear MonoSLAM: A linear approach to large-scale monocular SLAM problems. , 2014, , .		6
88	Input-to-state stability of a class of Lur'e descriptor systems. International Journal of Robust and Nonlinear Control, 2013, 23, 1324-1337.	3.7	6
89	Optimisation for job scheduling at automated container terminals using genetic algorithm. Computers and Industrial Engineering, 2013, 64, 511-523.	6.3	51
90	The nonlinearity structure of point feature SLAM problems with spherical covariance matrices. Automatica, 2013, 49, 3112-3119.	5.0	13

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91	Kullback-leibler divergence based graph pruning in robotic feature mapping. , 2013, , .		14
92	Linear SLAM: A linear solution to the feature-based and pose graph SLAM based on submap joining. , 2013, , .		21
93	A new crossover approach for solving the multiple travelling salesmen problem using genetic algorithms. European Journal of Operational Research, 2013, 228, 72-82.	5.7	122
94	Towards a reliable SLAM back-end. , 2013, , .		18
95	Multiobjective Optimization for Autonomous Straddle Carrier Scheduling at Automated Container Terminals. IEEE Transactions on Automation Science and Engineering, 2013, 10, 711-725.	5.2	19
96	Moving away from simulations: Innovative assessment of Mechatronic subjects using remote laboratories. , 2013, , .		3
97	A convex optimization based approach for pose SLAM problems. , 2012, , .		15
98	Low-cost visual tracking with an intelligent wheelchair for innovative assistive care. , 2012, , .		4
99	A new state vector and a map joining algorithm for range-only SLAM. , 2012, , .		3
100	Towards robust vision-based self-localization of vehicles in dense urban environments. , 2012, , .		1
101	On the number of local minima to the point feature based SLAM problem. , 2012, , .		24
102	Convergence comparison of least squares based bearing-only SLAM algorithms using different landmark parametrizations. , 2012, , .		1
103	A robust RGB-D SLAM algorithm. , 2012, , .		72
104	Optimisation model and exact algorithm for autonomous straddle carrier scheduling at automated container terminals. , 2011, , .		2
105	Parallax angle parametrization for monocular SLAM. , 2011, , .		20
106	A new state vector for range-only SLAM. , 2011, , .		7
107	Feature based SLAM using laser sensor data with maximized information usage. , 2011, , .		19
108	A review of recent developments in Simultaneous Localization and Mapping. , 2011, , .		59

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109	Optimality principles in variable stiffness control: The VSA hammer. , 2011, , .		7
110	Optimisation model and exact algorithm for Autonomous Straddle Carrier Scheduling at automated container terminals. , 2011, , .		0
111	Optimizing Heart Rate Regulation for Safe Exercise. Annals of Biomedical Engineering, 2010, 38, 758-768.	2.5	24
112	How far is SLAM from a linear least squares problem?. , 2010, , .		14
113	Evaluation of Pose Only SLAM. , 2010, , .		9
114	Models for pushing objects with a mobile robot using single point contact. , 2010, , .		3
115	Large-scale monocular SLAM by local bundle adjustment and map joining. , 2010, , .		12
116	Towards a consistent SLAM algorithm using B-Splines to represent environments. , 2010, , .		3
117	3D I-SLSJF: A consistent sparse local submap joining algorithm for building large-scale 3D Map. , 2009, , .		6
118	Iterated D-SLAM map joining: evaluating its performance inÂterms of consistency, accuracy and efficiency. Autonomous Robots, 2009, 27, 409-429.	4.8	19
119	H^{∞} control for discrete€time nonlinear switching systems. International Journal of Robust and Nonlinear Control, 2008, 18, 1451-1481.	3.7	1
120	Discounted MEAN bound for the optimal searcher path problem with non-uniform travel times. European Journal of Operational Research, 2008, 190, 383-397.	5.7	29
121	Sparse Local Submap Joining Filter for Building Large-Scale Maps. IEEE Transactions on Robotics, 2008, 24, 1121-1130.	10.3	74
122	Exact state and covariance sub-matrix recovery for submap based sparse EIF SLAM algorithm. , 2008, , .		4
123	Active SLAM in structured environments. , 2008, , .		37
124	Robust Control for Nonlinear Discrete-Time Systems with Quantitative Input to State Stability Requirement. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 14186-14191.	0.4	1
125	Tradeoffs in SLAM with Sparse Information Filters. Springer Tracts in Advanced Robotics, 2008, , 339-348.	0.4	1
126	D-SLAM: A Decoupled Solution to Simultaneous Localization and Mapping. International Journal of Robotics Research, 2007, 26, 187-204.	8.5	25

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127	Multi-agent search with interim positive information. , 2007, , .		2
128	Multi-robot simultaneous localization and mapping using D-SLAM framework. , 2007, , .		10
129	Convergence and Consistency Analysis for Extended Kalman Filter Based SLAM. , 2007, 23, 1036-1049.		301
130	Dense 3D Map Construction for Indoor Search and Rescue. Journal of Field Robotics, 2007, 24, 71-89.	6.0	28
131	D-SLAM: Decoupled Localization and Mapping for Autonomous Robots. , 2007, , 203-213.		7
132	Planning under uncertainty using model predictive control for information gathering. Robotics and Autonomous Systems, 2006, 54, 898-910.	5.1	51
133	Probabilistic Search for a Moving Target in an Indoor Environment. , 2006, , .		29
134	Active SLAM using Model Predictive Control and Attractor based Exploration. , 2006, , .		74
135	Implementation Issues and Experimental Evaluation of D-SLAM. , 2006, , 155-166.		3
136	Implementation Issues and Experimental Evaluation of D-SLAM. , 2006, , 155-166.		0
137	Analysis of input-to-state stability for discrete time nonlinear systems via dynamic programming. Automatica, 2005, 41, 2055-2065.	5.0	39
138	-bounded robust control of nonlinear cascade systems. Systems and Control Letters, 2005, 54, 215-224.	2.3	4
139	Decoupling localization and mapping in SLAM using compact relative maps. , 2005, , .		4
140	Near minimum time path planning for bearing-only localisation and mapping. , 2005, , .		5
141	A unified approach to controller design for achieving ISS and related properties. IEEE Transactions on Automatic Control, 2005, 50, 1681-1697.	5.7	24
142	l/sup âˆž/ -bounded robustness for nonlinear systems: analysis and synthesis. IEEE Transactions on Automatic Control, 2003, 48, 1875-1891.	5.7	23
143	On practical input to state stabilization for nonlinear discrete-time systems: A dynamic programming approach. , 2003, , .		2
144	Robust H âˆž reliable control for a class of uncertain neutral delay systems. International Journal of Systems Science, 2002, 33, 611-622.	5.5	32

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145	Saturated linear quadratic regulation of uncertain linear systems: Stability region estimation and controller design. International Journal of Control, 2002, 75, 97-110.	1.9	8
146	H8model reduction for linear time-delay systems: Continuous-time case. International Journal of Control, 2001, 74, 1062-1074.	1.9	96
147	Reliable linear-quadratic control for symmetric composite systems. International Journal of Systems Science, 2001, 32, 73-82.	5.5	5
148	Fault tolerant decentralized H/sub âˆž/ control for symmetric composite systems. IEEE Transactions on Automatic Control, 1999, 44, 2108-2114.	5.7	40
149	The decoupling of a class of large-scale systems with symmetric circulant structure. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1999, 32, 5903-5908.	0.4	0
150	Decentralized fault tolerant stabilization for symmetric composite systems. , 1998, , .		0
151	The decentralized fixed modes of twin lift systems. , 1997, , .		0
152	l/sup âˆž/-bounded robust control for nonlinear discrete time systems. , 0, , .		0
153	Control of uncertain bilinear systems using linear controllers: stability region estimation and controller design. , 0, , .		5
154	Local reliable control for linear systems with saturating actuators. , 0, , .		3
155	Analysis of input to state stability for discrete time nonlinear systems via dynamic programming. , 0, , .		1
156	Time optimal robot motion control in simultaneous localization and map building (SLAM) problem. , 0, , .		7
157	Multi-Step Look-Ahead Trajectory Planning in SLAM: Possibility and Necessity. , 0, , .		40
158	Convergence analysis for extended Kalman filter based SLAM. , 0, , .		20
159	Mapping large scale environments using relative position information among landmarks. , 0, , .		6
160	On the Structure of Nonlinearities in Pose Graph. , 0, , .		10
161	Exploiting the Separable Structure of SLAM. , 0, , .		10