

Shoudong Huang

List of Publications by Year in descending order

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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	Convergence and Consistency Analysis for Extended Kalman Filter Based SLAM. , 2007, 23, 1036-1049.		301
2	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
3	Convergence and Consistency Analysis for a 3-D Invariant-EKF SLAM. IEEE Robotics and Automation Letters, 2017, 2, 733-740.	5.1	109
4	H8model reduction for linear time-delay systems: Continuous-time case. International Journal of Control, 2001, 74, 1062-1074.	1.9	96
5	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
6	Active SLAM using Model Predictive Control and Attractor based Exploration. , 2006, , .		74
7	Sparse Local Submap Joining Filter for Building Large-Scale Maps. IEEE Transactions on Robotics, 2008, 24, 1121-1130.	10.3	74
8	A robust RGB-D SLAM algorithm. , 2012, , .		72
9	Active SLAM for Mobile Robots With Area Coverage and Obstacle Avoidance. IEEE/ASME Transactions on Mechatronics, 2020, 25, 1182-1192.	5.8	63
10	-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
11	A review of recent developments in Simultaneous Localization and Mapping. , 2011, , .		59
12	3D LiDAR-Based Global Localization Using Siamese Neural Network. IEEE Transactions on Intelligent Transportation Systems, 2020, 21, 1380-1392.	8.0	59
13	An invariant-EKF VINS algorithm for improving consistency. , 2017, , .		57
14	Deconstruction waste management through 3d reconstruction and bim: a case study. Visualization in Engineering, 2017, 5, .	8.8	54
15	Planning under uncertainty using model predictive control for information gathering. Robotics and Autonomous Systems, 2006, 54, 898-910.	5.1	51
16	Optimisation for job scheduling at automated container terminals using genetic algorithm. Computers and Industrial Engineering, 2013, 64, 511-523.	6.3	51
17	3D Lidar-IMU Calibration Based on Upsampled Preintegrated Measurements for Motion Distortion Correction. , 2018, , .		50
18	A critique of current developments in simultaneous localization and mapping. International Journal of Advanced Robotic Systems, 2016, 13, 172988141666948.	2.1	47

#	ARTICLE	IF	CITATIONS
19	Towards dense moving object segmentation based robust dense RGB-D SLAM in dynamic scenarios. , 2014, , .		45
20	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
21	Device-Free Localization via an Extreme Learning Machine with Parameterized Geometrical Feature Extraction. Sensors, 2017, 17, 879.	3.8	43
22	Fault tolerant decentralized H/sub \hat{z} / control for symmetric composite systems. IEEE Transactions on Automatic Control, 1999, 44, 2108-2114.	5.7	40
23	Multi-Step Look-Ahead Trajectory Planning in SLAM: Possibility and Necessity. , 0, , .		40
24	Analysis of input-to-state stability for discrete time nonlinear systems via dynamic programming. Automatica, 2005, 41, 2055-2065.	5.0	39
25	Active SLAM in structured environments. , 2008, , .		37
26	IN2LAMA: INertial Lidar Localisation And MApping. , 2019, , .		37
27	ParallaxBA: bundle adjustment using parallax angle feature parametrization. International Journal of Robotics Research, 2015, 34, 493-516.	8.5	36
28	IN2LAAMA: Inertial Lidar Localization Autocalibration and Mapping. IEEE Transactions on Robotics, 2021, 37, 275-290.	10.3	36
29	Robust H \hat{z} reliable control for a class of uncertain neutral delay systems. International Journal of Systems Science, 2002, 33, 611-622.	5.5	32
30	Line matching based on planar homography for stereo aerial images. ISPRS Journal of Photogrammetry and Remote Sensing, 2015, 104, 1-17.	11.1	31
31	Reliable Graphs for SLAM. International Journal of Robotics Research, 2019, 38, 260-298.	8.5	31
32	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
33	Topological local-metric framework for mobile robots navigation: a long term perspective. Autonomous Robots, 2019, 43, 197-211.	4.8	30
34	Probabilistic Search for a Moving Target in an Indoor Environment. , 2006, , .		29
35	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
36	Improvement of the inspection-repair process with building information modelling and image classification. Facilities, 2019, 37, 395-414.	1.6	29

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37	Dense 3D Map Construction for Indoor Search and Rescue. Journal of Field Robotics, 2007, 24, 71-89.	6.0	28
38	Novel insights into the impact of graph structure on SLAM. , 2014, , .		28
39	Feature-based visual simultaneous localization and mapping: a survey. SN Applied Sciences, 2020, 2, 1.	2.9	27
40	D-SLAM: A Decoupled Solution to Simultaneous Localization and Mapping. International Journal of Robotics Research, 2007, 26, 187-204.	8.5	25
41	Online Estimation of Ocean Current from Sparse GPS Data for Underwater Vehicles. , 2019, , .		25
42	A unified approach to controller design for achieving ISS and related properties. IEEE Transactions on Automatic Control, 2005, 50, 1681-1697.	5.7	24
43	Optimizing Heart Rate Regulation for Safe Exercise. Annals of Biomedical Engineering, 2010, 38, 758-768.	2.5	24
44	On the number of local minima to the point feature based SLAM problem. , 2012, , .		24
45	l^{∞} -bounded robustness for nonlinear systems: analysis and synthesis. IEEE Transactions on Automatic Control, 2003, 48, 1875-1891.	5.7	23
46	Robust Incremental SLAM Under Constrained Optimization Formulation. IEEE Robotics and Automation Letters, 2018, 3, 1207-1214.	5.1	23
47	Cram�r-Rao Bounds and Optimal Design Metrics for Pose-Graph SLAM. IEEE Transactions on Robotics, 2021, 37, 627-641.	10.3	22
48	Linear SLAM: A linear solution to the feature-based and pose graph SLAM based on submap joining. , 2013, , .		21
49	Convergence analysis for extended Kalman filter based SLAM. , 0, , .		20
50	Parallax angle parametrization for monocular SLAM. , 2011, , .		20
51	3D LiDAR Map Compression for Efficient Localization on Resource Constrained Vehicles. IEEE Transactions on Intelligent Transportation Systems, 2021, 22, 837-852.	8.0	20
52	Iterated D-SLAM map joining: evaluating its performance in terms of consistency, accuracy and efficiency. Autonomous Robots, 2009, 27, 409-429.	4.8	19
53	Feature based SLAM using laser sensor data with maximized information usage. , 2011, , .		19
54	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

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55	Towards a reliable SLAM back-end. , 2013, , .		18
56	Motion segmentation based robust RGB-D SLAM. , 2014, , .		18
57	A framework for multi-session RGBD SLAM in low dynamic workspace environment. CAAI Transactions on Intelligence Technology, 2016, 1, 90-103.	8.1	17
58	Comparison of EKF based SLAM and optimization based SLAM algorithms. , 2018, , .		17
59	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
60	Broadcast Your Weaknesses: Cooperative Active Pose-Graph SLAM for Multiple Robots. IEEE Robotics and Automation Letters, 2020, 5, 2200-2207.	5.1	16
61	A convex optimization based approach for pose SLAM problems. , 2012, , .		15
62	Fast, on-board, model-aided visual-inertial odometry system for quadrotor micro aerial vehicles. , 2016, , .		15
63	A Stacked LSTM-Based Approach for Reducing Semantic Pose Estimation Error. IEEE Transactions on Instrumentation and Measurement, 2021, 70, 1-14.	4.7	15
64	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
65	How far is SLAM from a linear least squares problem?. , 2010, , .		14
66	Kullback-leibler divergence based graph pruning in robotic feature mapping. , 2013, , .		14
67	Task oriented area partitioning and allocation for optimal operation of multiple industrial robots in unstructured environments. , 2014, , .		14
68	2D Laser SLAM With General Features Represented by Implicit Functions. IEEE Robotics and Automation Letters, 2020, 5, 4329-4336.	5.1	14
69	Gaussian Process Preintegration for Inertial-Aided State Estimation. IEEE Robotics and Automation Letters, 2020, 5, 2108-2114.	5.1	14
70	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
71	The nonlinearity structure of point feature SLAM problems with spherical covariance matrices. Automatica, 2013, 49, 3112-3119.	5.0	13
72	An approach to base placement for effective collaboration of multiple autonomous industrial robots. , 2015, , .		13

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73	Dimensionality reduction for point feature SLAM problems with spherical covariance matrices. Automatica, 2015, 51, 149-157.	5.0	13
74	A Sparse Separable SLAM Back-End. IEEE Transactions on Robotics, 2016, 32, 1536-1549.	10.3	13
75	Large-scale monocular SLAM by local bundle adjustment and map joining. , 2010, , .		12
76	Efficient Active SLAM Based on Submap Joining, Graph Topology and Convex Optimization. , 2018, , .		12
77	On-line 3D active pose-graph SLAM based on key poses using graph topology and sub-maps. , 2019, , .		12
78	Linear SLAM: Linearising the SLAM problems using submap joining. Automatica, 2019, 100, 231-246.	5.0	12
79	GEM: Online Globally Consistent Dense Elevation Mapping for Unstructured Terrain. IEEE Transactions on Instrumentation and Measurement, 2021, 70, 1-13.	4.7	12
80	Input-to-state stability of a class of descriptor systems. International Journal of Robust and Nonlinear Control, 2014, 24, 97-109.	3.7	11
81	A new feature parametrization for monocular SLAM using line features. Robotica, 2015, 33, 513-536.	1.9	11
82	Tree-connectivity: Evaluating the graphical structure of SLAM. , 2016, , .		11
83	Multi-robot simultaneous localization and mapping using D-SLAM framework. , 2007, , .		10
84	On the Structure of Nonlinearities in Pose Graph. , 0, , .		10
85	Exploiting the Separable Structure of SLAM. , 0, , .		10
86	Evaluation of Pose Only SLAM. , 2010, , .		9
87	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
88	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
89	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
90	A Right Invariant Extended Kalman Filter for Object Based SLAM. IEEE Robotics and Automation Letters, 2022, 7, 1316-1323.	5.1	8

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91	Time optimal robot motion control in simultaneous localization and map building (SLAM) problem. , 0, , .		7
92	A new state vector for range-only SLAM. , 2011, , .		7
93	A Submap Joining Based RGB-D SLAM Algorithm Using Planes as Features. Springer Proceedings in Advanced Robotics, 2018, , 367-382.	1.3	7
94	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
95	Conic Feature Based Simultaneous Localization and Mapping in Open Environment via 2D Lidar. IEEE Access, 2019, 7, 173703-173718.	4.2	7
96	D-SLAM: Decoupled Localization and Mapping for Autonomous Robots. , 2007, , 203-213.		7
97	Optimality principles in variable stiffness control: The VSA hammer. , 2011, , .		7
98	Mapping large scale environments using relative position information among landmarks. , 0, , .		6
99	3D I-SLSJF: A consistent sparse local submap joining algorithm for building large-scale 3D Map. , 2009, , .		6
100	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
101	Linear MonoSLAM: A linear approach to large-scale monocular SLAM problems. , 2014, , .		6
102	High quality 3D reconstruction of indoor environments using RGB-D sensors. , 2017, , .		6
103	Reliable linear-quadratic control for symmetric composite systems. International Journal of Systems Science, 2001, 32, 73-82.	5.5	5
104	Control of uncertain bilinear systems using linear controllers: stability region estimation and controller design. , 0, , .		5
105	Near minimum time path planning for bearing-only localisation and mapping. , 2005, , .		5
106	Incremental SQP method for constrained optimization formulation in SLAM. , 2016, , .		5
107	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
108	A review of optimisation strategies used in simultaneous localisation and mapping. Journal of Control and Decision, 2019, 6, 61-74.	1.6	5

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109	Invariant EKF based 2D Active SLAM with Exploration Task. , 2021, , .		5
110	-bounded robust control of nonlinear cascade systems. Systems and Control Letters, 2005, 54, 215-224.	2.3	4
111	Decoupling localization and mapping in SLAM using compact relative maps. , 2005, , .		4
112	Exact state and covariance sub-matrix recovery for submap based sparse EIF SLAM algorithm. , 2008, , .		4
113	Low-cost visual tracking with an intelligent wheelchair for innovative assistive care. , 2012, , .		4
114	Comparison of two different objective functions in 2D point feature SLAM. Automatica, 2018, 97, 172-181.	5.0	4
115	GSAP: A Global Structure Attention Pooling Method for Graph-Based Visual Place Recognition. Remote Sensing, 2021, 13, 1467.	4.0	4
116	Direct 3D ultrasound fusion for transesophageal echocardiography. Computers in Biology and Medicine, 2021, 134, 104502.	7.0	4
117	Deep Learning Assisted Automatic Intra-operative 3D Aortic Deformation Reconstruction. Lecture Notes in Computer Science, 2020, , 660-669.	1.3	4
118	Local reliable control for linear systems with saturating actuators. , 0, , .		3
119	Models for pushing objects with a mobile robot using single point contact. , 2010, , .		3
120	Towards a consistent SLAM algorithm using B-Splines to represent environments. , 2010, , .		3
121	A new state vector and a map joining algorithm for range-only SLAM. , 2012, , .		3
122	Moving away from simulations: Innovative assessment of Mechatronic subjects using remote laboratories. , 2013, , .		3
123	A method of state estimation for underwater vehicle navigation around a cylindrical structure. , 2016, , .		3
124	A Deep Learning Framework for Robust Semantic SLAM. , 2020, , .		3
125	Aortic 3D Deformation Reconstruction using 2D X-ray Fluoroscopy and 3D Pre-operative Data for Endovascular Interventions. , 2020, , .		3
126	Anchor Selection for SLAM Based on Graph Topology and Submodular Optimization. IEEE Transactions on Robotics, 2022, 38, 329-350.	10.3	3

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127	Implementation Issues and Experimental Evaluation of D-SLAM. , 2006, , 155-166.		3
128	3D Reconstruction of Deformable Colon Structures based on Preoperative Model and Deep Neural Network. , 2021, , .		3
129	Globally optimal consensus maximization for robust visual inertial localization in point and line map. , 2020, , .		3
130	Multi-agent search with interim positive information. , 2007, , .		2
131	Optimisation model and exact algorithm for autonomous straddle carrier scheduling at automated container terminals. , 2011, , .		2
132	Decentralised Mission Monitoring with Spatiotemporal Optimal Stopping. , 2018, , .		2
133	Predicting Objective Function Change in Pose-Graph Optimization. , 2018, , .		2
134	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
135	On practical input to state stabilization for nonlinear discrete-time systems: A dynamic programming approach. , 2003, , .		2
136	Some Research Questions for SLAM in Deformable Environments. , 2021, , .		2
137	Analysis of input to state stability for discrete time nonlinear systems via dynamic programming. , 0, , .		1
138	H^∞ control for discrete-time nonlinear switching systems. International Journal of Robust and Nonlinear Control, 2008, 18, 1451-1481.	3.7	1
139	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
140	Towards robust vision-based self-localization of vehicles in dense urban environments. , 2012, , .		1
141	Convergence comparison of least squares based bearing-only SLAM algorithms using different landmark parametrizations. , 2012, , .		1
142	Building a dense surface map incrementally from semi-dense point cloud and RGB images. Frontiers of Information Technology and Electronic Engineering, 2015, 16, 594-606.	2.6	1
143	Evaluation of different SLAM algorithms using Google tangle data. , 2017, , .		1
144	Advanced Control for Singular Systems with Applications. Mathematical Problems in Engineering, 2018, 2018, 1-2.	1.1	1

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145	Efficient two step optimization for large embedded deformation graph based SLAM. , 2020, , .		1
146	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
147	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
148	Parallax Bundle Adjustment on Manifold with Improved Global Initialization. Springer Proceedings in Advanced Robotics, 2020, , 621-638.	1.3	1
149	Designing Sparse Reliable Pose-Graph SLAM: A Graph-Theoretic Approach. Springer Proceedings in Advanced Robotics, 2020, , 17-32.	1.3	1
150	Tradeoffs in SLAM with Sparse Information Filters. Springer Tracts in Advanced Robotics, 2008, , 339-348.	0.4	1
151	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
152	The decentralized fixed modes of twin lift systems. , 1997, , .		0
153	Decentralized fault tolerant stabilization for symmetric composite systems. , 1998, , .		0
154	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
155	l^{∞} -bounded robust control for nonlinear discrete time systems. , 0, , .		0
156	Comparison of two strategies of path planning for underwater robot navigation under uncertainty. , 2014, , .		0
157	MULTI-SESSION SLAM OVER LOW DYNAMIC WORKSPACE USING RGBD SENSOR. , 2015, , .		0
158	Gaussian process model enabled particle filter for device-free localization. , 2017, , .		0
159	Direct Bundle Adjustment for 3D Image Fusion with Application to Transesophageal Echocardiography. , 2021, , .		0
160	Optimisation model and exact algorithm for Autonomous Straddle Carrier Scheduling at automated container terminals. , 2011, , .		0
161	Implementation Issues and Experimental Evaluation of D-SLAM. , 2006, , 155-166.		0