TomÃ¡Å¡ KrajnÃ-k

List of Publications by Year
in descending order

97 papers	2,590 citations	279798 23 h-index	265206 42 g-index
98 all docs	98 docs citations	98 times ranked	1919 citing authors

#	Article	IF	Citations
1	A Practical Multirobot Localization System. Journal of Intelligent and Robotic Systems: Theory and Applications, 2014, 76, 539-562.	3.4	174
2	AR-Drone as a Platform for Robotic Research and Education. Communications in Computer and Information Science, 2011, , 172-186.	0.5	151
3	The STRANDS Project: Long-Term Autonomy in Everyday Environments. IEEE Robotics and Automation Magazine, 2017, 24, 146-156.	2.0	126
4	Artificial Intelligence for Long-Term Robot Autonomy: A Survey. IEEE Robotics and Automation Letters, 2018, 3, 4023-4030.	5.1	113
5	System for deployment of groups of unmanned micro aerial vehicles in GPS-denied environments using onboard visual relative localization. Autonomous Robots, 2017, 41, 919-944.	4.8	99
6	FreMEn: Frequency Map Enhancement for Long-Term Mobile Robot Autonomy in Changing Environments. IEEE Transactions on Robotics, 2017, 33, 964-977.	10.3	97
7	Coordination and navigation of heterogeneous MAVâ€“UGV formations localized by a â€˜hawk-eyeâ€™-like approach under a model predictive control scheme. International Journal of Robotics Research, 2014, 33, 1393-1412.	8.5	79
8	A Robust UAV System for Operations in a Constrained Environment. IEEE Robotics and Automation Letters, 2020, 5, 2169-2176.	5.1	79
9	Cooperative autonomous search, grasping, and delivering in a treasure hunt scenario by a team of unmanned aerial vehicles. Journal of Field Robotics, 2019, 36, 125-148.	6.0	74
10	Localization, Grasping, and Transportation of Magnetic Objects by a Team of MAVs in Challenging Desert-Like Environments. IEEE Robotics and Automation Letters, 2018, 3, 1576-1583.	5.1	69
11	Low-cost embedded system for relative localization in robotic swarms. , 2013, , .		65
12	Simple yet stable bearingâ€only navigation. Journal of Field Robotics, 2010, 27, 511-533.	6.0	62
13	FPGA based Speeded Up Robust Features. , 2009, , .		60
14	SyRoTekâ€”Distance Teaching of Mobile Robotics. IEEE Transactions on Education, 2013, 56, 18-23.	2.4	60
15	3Dâ€vision based detection, localization, and sizing of broccoli heads in the field. Journal of Field Robotics, 2017, 34, 1505-1518.	6.0	54
16	Spectral analysis for long-term robotic mapping. , 2014, , .		49
17	Image features for visual teach-and-repeat navigation in changing environments. Robotics and Autonomous Systems, 2017, 88, 127-141.	5.1	46
18	EU Long-term Dataset with Multiple Sensors for Autonomous Driving. , 2020, , .		43

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19	Cooperative μUAV-UGV autonomous indoor surveillance. , 2012, , .		42
20	Now or later? Predicting and maximising success of navigation actions from long-term experience. , 2015, , .		42
21	Investigation of cue-based aggregation in static and dynamic environments with a mobile robot swarm. Adaptive Behavior, 2016, 24, 102-118.	1.9	40
22	DARPA Subterranean Challenge: Multi-robotic Exploration of Underground Environments. Lecture Notes in Computer Science, 2020, , 274-290.	1.3	39
23	A simple visual navigation system for an UAV. , 2012, , .		38
24	Mobile Manipulator for Autonomous Localization, Grasping and Precise Placement of Construction Material in a Semi-Structured Environment. IEEE Robotics and Automation Letters, 2021, 6, 2595-2602.	5.1	34
25	Spatio-temporal exploration strategies for long-term autonomy of mobile robots. Robotics and Autonomous Systems, 2017, 88, 116-126.	5.1	28
26	RRT-path â€“ A Guided Rapidly Exploring Random Tree. Lecture Notes in Control and Information Sciences, 2009, , 307-316.	1.0	28
27	Lifelong Information-Driven Exploration to Complete and Refine 4-D Spatio-Temporal Maps. IEEE Robotics and Automation Letters, 2016, 1, 684-691.	5.1	27
28	Persistent localization and life-long mapping in changing environments using the Frequency Map Enhancement. , 2016, , .		26
29	Navigation without localisation: reliable teach and repeat based on the convergence theorem. , 2018, , .		26
30	Long-term topological localisation for service robots in dynamic environments using spectral maps. , 2014, , .		25
31	Fault-Tolerant Formation Driving Mechanism Designed for Heterogeneous MAVs-UGVs Groups. Journal of Intelligent and Robotic Systems: Theory and Applications, 2014, 73, 603-622.	3.4	25
32	Occlusion-Based Coordination Protocol Design for Autonomous Robotic Shepherding Tasks. IEEE Transactions on Cognitive and Developmental Systems, 2022, 14, 126-135.	3.8	25
33	Coordination and navigation of heterogeneous UAVs-UGVs teams localized by a hawk-eye approach. , 2012, , .		24
34	Low cost MAV platform AR-drone in experimental verifications of methods for vision based autonomous navigation. , 2012, , .		24
35	COSΦ: Artificial pheromone system for robotic swarms research. , 2015, , .		24
36	Hybrid vision-based navigation for mobile robots in mixed indoor/outdoor environments. Pattern Recognition Letters, 2015, 53, 118-128.	4.2	24

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37	An efficient visual fiducial localisation system. ACM SIGAPP Applied Computing Review: A Publication of the Special Interest Group on Applied Computing, 2017, 17, 28-37.	0.9	24
38	Perpetual Robot Swarm: Long-Term Autonomy of Mobile Robots Using On-the-fly Inductive Charging. Journal of Intelligent and Robotic Systems: Theory and Applications, 2018, 92, 395-412.	3.4	24
39	Bio-inspired artificial pheromone system for swarm robotics applications. Adaptive Behavior, 2021, 29, 395-415.	1.9	24
40	The When, Where, and How. , 2017, , .		23
41	<tex>Phi</tex> Clust: Pheromone-Based Aggregation for Robotic Swarms. , 2018, , .		23
42	A versatile high-performance visual fiducial marker detection system with scalable identity encoding. , 2017, , .		22
43	External localization system for mobile robotics. , 2013, , .		20
44	Real-time monocular image-based path detection. Journal of Real-Time Image Processing, 2016, 11, 335-348.	3.5	18
45	Where's waldo at time t ? using spatio-temporal models for mobile robot search. , 2015, , .		16
46	Warped Hypertime Representations for Long-Term Autonomy of Mobile Robots. IEEE Robotics and Automation Letters, 2019, 4, 3310-3317.	5.1	16
47	FPGA-based module for SURF extraction. Machine Vision and Applications, 2014, 25, 787-800.	2.7	15
48	Image features and seasons revisited. , 2015, , .		15
49	Modelling and Predicting Rhythmic Flow Patterns in Dynamic Environments. Lecture Notes in Computer Science, 2018, , 135-146.	1.3	15
50	A Simple Visual Navigation System with Convergence Property. , 2008, , 283-292.		15
51	Predictive and adaptive maps for long-term visual navigation in changing environments. , 2019, , .		14
52	Accelerating embedded image processing for real time: a case study. Journal of Real-Time Image Processing, 2016, 11, 349-374.	3.5	13
53	Spatio-temporal representation for long-term anticipation of human presence in service robotics. , 2019, , .		13
54	Learning to see through the haze: Multi-sensor learning-fusion System for Vulnerable Traffic Participant Detection in Fog. Robotics and Autonomous Systems, 2021, 136, 103687.	5.1	13

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55	Learning to see through haze: Radar-based Human Detection for Adverse Weather Conditions. , 2019, , .		12
56	Vision techniques for onâ€board detection, following, and mapping of moving targets. Journal of Field Robotics, 2019, 36, 252-269.	6.0	12
57	Life-long spatio-temporal exploration of dynamic environments. , 2015, , .		11
58	A Minimally Invasive Approach Towards â€œEcosystem Hackingâ€•With Honeybees. Frontiers in Robotics and AI, 2022, 9, 791921.	3.2	11
59	Navigation, localization and stabilization of formations of unmanned aerial and ground vehicles. , 2013, , .		10
60	Can you pick a broccoli? 3D-vision based detection and localisation of broccoli heads in the field. , 2016, , .		10
61	Time-varying Pedestrian Flow Models for Service Robots. , 2019, , .		10
62	LIDAR-based Stabilization, Navigation and Localization for UAVs Operating in Dark Indoor Environments. , 2021, , .		10
63	A Poisson-spectral model for modelling temporal patterns in human data observed by a robot. , 2016, , .		9
64	On localization uncertainty in an autonomous inspection. , 2012, , .		8
65	Monte Carlo Localization for Teach-and-Repeat Feature-Based Navigation. Lecture Notes in Computer Science, 2014, , 13-24.	1.3	8
66	A cognitive architecture for modular and self-reconfigurable robots. , 2014, , .		8
67	Joint Localization of Pursuit Quadcopters and Target Using Monocular Cues. Journal of Intelligent and Robotic Systems: Theory and Applications, 2015, 78, 613-630.	3.4	8
68	Visual road following using intrinsic images. , 2015, , .		7
69	Extended Artificial Pheromone System for Swarm Robotic Applications. , 2019, , .		7
70	Adaptive Image Processing Methods for Outdoor Autonomous Vehicles. Lecture Notes in Computer Science, 2019, , 456-476.	1.3	7
71	Contrastive Learning for Image Registration in Visual Teach and Repeat Navigation. Sensors, 2022, 22, 2975.	3.8	7
72	A co-design methodology for processor-centric embedded systems with hardware acceleration using FPGA. , 2012, , .		6

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73	Raindrop Removal With Light Field Image Using Image Inpainting. IEEE Access, 2020, 8, 58416-58426.	4.2	6
74	Natural Criteria for Comparison of Pedestrian Flow Forecasting Models. , 2020, , .		5
75	Hardware/Software Co-design for Real Time Embedded Image Processing: A Case Study. Lecture Notes in Computer Science, 2012, , 599-606.	1.3	4
76	To Explore or to Exploit? Learning Humansâ€™ Behaviour to Maximize Interactions with Them. Lecture Notes in Computer Science, 2016, , 48-63.	1.3	4
77	A Quantifiable Stratification Strategy for Tidy-up in Service Robotics. , 2021, , .		4
78	Robust Image Alignment for Outdoor Teach-and-Repeat Navigation. , 2021, , .		4
79	Visual Topological Mapping. , 2008, , 333-342.		4
80	Robust and Long-term Monocular Teach and Repeat Navigation using a Single-experience Map. , 2021, , .		4
81	Design and deployment of an autonomous unmanned ground vehicle for urban firefighting scenarios. , 2021, 1, 186-202.		4
82	Monocular navigation for long-term autonomy. , 2013, , .		3
83	A Versatile Visual Navigation System for Autonomous Vehicles. Lecture Notes in Computer Science, 2019, , 90-110.	1.3	3
84	Estimation of Mobile Robot Pose from Optical Mouses. Communications in Computer and Information Science, 2011, , 93-107.	0.5	3
85	Monocular Teach-and-Repeat Navigation using a Deep Steering Network with Scale Estimation. , 2021, , .		3
86	Towards fast fiducial marker with full 6 DOF pose estimation. , 2022, , .		3
87	Spatiotemporal Models of Human Activity for Robotic Patrolling. Lecture Notes in Computer Science, 2019, , 54-64.	1.3	2
88	Self-Supervised Robust Feature Matching Pipeline for Teach and Repeat Navigation. Sensors, 2022, 22, 2836.	3.8	2
89	Semi-supervised learning for image alignment in teach and repeat navigation. , 2022, , .		2
90	Toward Benchmarking of Long-Term Spatio-Temporal Maps of Pedestrian Flows for Human-Aware Navigation. Frontiers in Robotics and AI, 0, 9, .	3.2	2

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91	P $$mathrm {Phi }$$ SS: An Open-Source Experimental Setup for Real-World Implementation of Swarm Robotic Systems in Long-Term Scenarios. Lecture Notes in Computer Science, 2019, , 351-364.	1.3	1
92	Cooperative Pollution Source Exploration and Cleanup with a Bio-inspired Swarm Robot Aggregation. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2021, , 469-481.	0.3	1
93	CHRONOROBOTICS. , 2020, , .		1
94	Airport snow shoveling. , 2010, , .		0
95	Boosting the Performance of Object Detection CNNs with Context-Based Anomaly Detection. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2021, , 159-176.	0.3	0
96	A Mobile Robot for EUROBOT Mars Challenge. Communications in Computer and Information Science, 2009, , 107-118.	0.5	0
97	A Mobile Robot for Small Object Handling. Communications in Computer and Information Science, 2010, , 47-60.	0.5	0