

Sebastian Scherer

List of Publications by Year in descending order

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95
papers

4,553
citations

430442

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96
all docs

96
docs citations

96
times ranked

3629
citing authors

#	ARTICLE	IF	CITATIONS
1	RGB-D SLAM in Dynamic Environments Using Point Correlations. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2022, 44, 373-389.	9.7	82
2	Unsupervised Online Learning for Robotic Interestingness With Visual Memory. IEEE Transactions on Robotics, 2022, 38, 2446-2461.	7.3	6
3	AirCode: A Robust Object Encoding Method. IEEE Robotics and Automation Letters, 2022, 7, 1816-1823.	3.3	4
4	Mission-level Robustness with Rapidly-deployed, Autonomous Aerial Vehicles by Carnegie Mellon Team Tartan at MBZIRC 2020. , 2022, 2, 172-200.		3
5	AirDOS: Dynamic SLAM benefits from Articulated Objects. , 2022, , .		16
6	Predicting Like A Pilot: Dataset and Method to Predict Socially-Aware Aircraft Trajectories in Non-Towered Terminal Airspace. , 2022, , .		4
7	AirLoop: Lifelong Loop Closure Detection. , 2022, , .		3
8	TartanDrive: A Large-Scale Dataset for Learning Off-Road Dynamics Models. , 2022, , .		8
9	Unified Representation of Geometric Primitives for Graph-SLAM Optimization Using Decomposed Quadrics. , 2022, , .		4
10	3D-SiamRPN: An End-to-End Learning Method for Real-Time 3D Single Object Tracking Using Raw Point Cloud. IEEE Sensors Journal, 2021, 21, 4995-5011.	2.4	34
11	Planning and Monitoring Multi-Job Type Swarm Search and Service Missions. Journal of Intelligent and Robotic Systems: Theory and Applications, 2021, 101, 1.	2.0	6
12	In-flight positional and energy use data set of a DJI Matrice 100 quadcopter for small package delivery. Scientific Data, 2021, 8, 155.	2.4	19
13	ULSD: Unified line segment detection across pinhole, fisheye, and spherical cameras. ISPRS Journal of Photogrammetry and Remote Sensing, 2021, 178, 187-202.	4.9	18
14	Monocular Visual Odometry Using Template Matching and IMU. IEEE Sensors Journal, 2021, 21, 17207-17218.	2.4	4
15	Real-Time Ellipse Detection for Robotics Applications. IEEE Robotics and Automation Letters, 2021, 6, 7009-7016.	3.3	11
16	Do You See What I See? Coordinating Multiple Aerial Cameras for Robot Cinematography. , 2021, , .		9
17	CVaR-based Flight Energy Risk Assessment for Multirotor UAVs using a Deep Energy Model. , 2021, , .		13
18	Improving Off-road Planning Techniques with Learned Costs from Physical Interactions. , 2021, , .		3

#	ARTICLE	IF	CITATIONS
19	Batteries, camera, action! Learning a semantic control space for expressive robot cinematography. , 2021, , .		6
20	3D Segmentation Learning From Sparse Annotations and Hierarchical Descriptors. IEEE Robotics and Automation Letters, 2021, 6, 5953-5960.	3.3	3
21	3D Human Reconstruction in the Wild with Collaborative Aerial Cameras. , 2021, , .		2
22	ORStereo: Occlusion-Aware Recurrent Stereo Matching for 4K-Resolution Images. , 2021, , .		2
23	DSVP: Dual-Stage Viewpoint Planner for Rapid Exploration by Dynamic Expansion. , 2021, , .		27
24	Super Odometry: IMU-centric LiDAR-Visual-Inertial Estimator for Challenging Environments. , 2021, , .		58
25	Autonomous aerial cinematography in unstructured environments with learned artistic decision-making. Journal of Field Robotics, 2020, 37, 606-641.	3.2	57
26	Deep-Learning Assisted High-Resolution Binocular Stereo Depth Reconstruction. , 2020, , .		15
27	LiDAR-enhanced Structure-from-Motion. , 2020, , .		10
28	Real-time Motion Planning of Curvature Continuous Trajectories for Urban UAV Operations in Wind. , 2020, , .		5
29	Line-Based 2-D to 3-D Registration and Camera Localization in Structured Environments. IEEE Transactions on Instrumentation and Measurement, 2020, 69, 8962-8972.	2.4	30
30	Learning Visuomotor Policies for Aerial Navigation Using Cross-Modal Representations. , 2020, , .		20
31	Precision UAV Landing in Unstructured Environments. Springer Proceedings in Advanced Robotics, 2020, , 177-187.	0.9	7
32	Visual Memorability for Robotic Interestingness via Unsupervised Online Learning. Lecture Notes in Computer Science, 2020, , 52-68.	1.0	8
33	A Robust Multi-Stereo Visual-Inertial Odometry Pipeline. , 2020, , .		6
34	Monocular Camera Localization in Prior LiDAR Maps with 2D-3D Line Correspondences. , 2020, , .		30
35	Efficient Trajectory Library Filtering for Quadrotor Flight in Unknown Environments. , 2020, , .		2
36	TP-TIO: A Robust Thermal-Inertial Odometry with Deep ThermalPoint. , 2020, , .		23

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37	Efficient Multiresolution Scrolling Grid for Stereo Vision-based MAV Obstacle Avoidance. , 2020, , .		0
38	Wind and the City: Utilizing UAV-Based In-Situ Measurements for Estimating Urban Wind Fields. , 2020, , .		9
39	Monocular Object and Plane SLAM in Structured Environments. IEEE Robotics and Automation Letters, 2019, 4, 3145-3152.	3.3	62
40	A Joint Optimization Approach of LiDAR-Camera Fusion for Accurate Dense 3-D Reconstructions. IEEE Robotics and Automation Letters, 2019, 4, 3585-3592.	3.3	39
41	High performance and safe flight of full-scale helicopters from takeoff to landing with an ensemble of planners. Journal of Field Robotics, 2019, 36, 1275-1332.	3.2	3
42	Improved Generalization of Heading Direction Estimation for Aerial Filming Using Semi-Supervised Regression. , 2019, , .		5
43	Automatic Real-time Anomaly Detection for Autonomous Aerial Vehicles. , 2019, , .		20
44	CubeSLAM: Monocular 3-D Object SLAM. IEEE Transactions on Robotics, 2019, 35, 925-938.	7.3	257
45	Hybrid Model for A Priori Performance Prediction of Multi-Job Type Swarm Search and Service Missions. , 2019, , .		2
46	Can a Robot Become a Movie Director? Learning Artistic Principles for Aerial Cinematography. , 2019, , .		37
47	A Robust Laser-Inertial Odometry and Mapping Method for Large-Scale Highway Environments. , 2019, , .		40
48	Towards a Robust Aerial Cinematography Platform: Localizing and Tracking Moving Targets in Unstructured Environments. , 2019, , .		51
49	Improving Learning-based Ego-motion Estimation with Homomorphism-based Losses and Drift Correction. , 2019, , .		9
50	DROAN - Disparity-Space Representation for Obstacle Avoidance: Enabling Wire Mapping & Avoidance. , 2018, , .		5
51	Decentralized Method for Sub-Swarm Deployment and Rejoining. , 2018, , .		6
52	Visual Place Recognition in Long-term and Large-scale Environment based on CNN Feature. , 2018, , .		9
53	Path Planning for Unmanned Fixed-Wing Aircraft in Uncertain Wind Conditions Using Trochoids. , 2018, , .		8
54	Bayesian Active Edge Evaluation on Expensive Graphs. , 2018, , .		6

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55	Randomized algorithm for informative path planning with budget constraints. , 2017, , .		24
56	A ÎPITE in the wind: Smooth trajectory optimization in a moving reference frame. , 2017, , .		9
57	Direct monocular odometry using points and lines. , 2017, , .		43
58	Robust Autonomous Flight in Constrained and Visually Degraded Shipboard Environments. Journal of Field Robotics, 2017, 34, 25-52.	3.2	43
59	DROAN â€” Disparity-space representation for obstacle AvoidaNce. , 2017, , .		8
60	Looking forward: A semantic mapping system for scouting with micro-aerial vehicles. , 2017, , .		14
61	Semantic 3D occupancy mapping through efficient high order CRFs. , 2017, , .		56
62	Wire detection using synthetic data and dilated convolutional networks for unmanned aerial vehicles. , 2017, , .		36
63	A Multi-Sensor Fusion MAV State Estimation from Long-Range Stereo, IMU, GPS and Barometric Sensors. Sensors, 2017, 17, 11.	2.1	49
64	List prediction applied to motion planning. , 2016, , .		4
65	Regionally accelerated batch informed trees (RABIT*): A framework to integrate local information into optimal path planning. , 2016, , .		54
66	Pop-up SLAM: Semantic monocular plane SLAM for low-texture environments. , 2016, , .		89
67	Autonomous Exploration for Infrastructure Modeling with a Micro Aerial Vehicle. Springer Tracts in Advanced Robotics, 2016, , 427-440.	0.3	52
68	A framework for optimal repairing of vector field-based motion plans. , 2016, , .		10
69	Robust Autonomous Flight in Constrained and Visually Degraded Environments. Springer Tracts in Advanced Robotics, 2016, , 411-425.	0.3	12
70	Real-time 3D scene layout from a single image using Convolutional Neural Networks. , 2016, , .		13
71	The planner ensemble: Motion planning by executing diverse algorithms. , 2015, , .		6
72	Connected invariant sets for high-speed motion planning in partially-known environments. , 2015, , .		0

#	ARTICLE	IF	CITATIONS
73	Autonomous Exploration and Motion Planning for an Unmanned Aerial Vehicle Navigating Rivers. Journal of Field Robotics, 2015, 32, 1141-1162.	3.2	46
74	Online safety verification of trajectories for unmanned flight with offline computed robust invariant sets. , 2015, , .		29
75	The Dynamics Projection Filter (DPF) - real-time nonlinear trajectory optimization using projection operators. , 2015, , .		4
76	VoxNet: A 3D Convolutional Neural Network for real-time object recognition. , 2015, , .		1,903
77	Real-time onboard 6DoF localization of an indoor MAV in degraded visual environments using a RGB-D camera. , 2015, , .		26
78	PASP: Policy based approach for sensor planning. , 2015, , .		6
79	3D Convolutional Neural Networks for landing zone detection from LiDAR. , 2015, , .		133
80	Autonomous River Exploration. Springer Tracts in Advanced Robotics, 2015, , 93-106.	0.3	16
81	Robust multi-sensor fusion for micro aerial vehicle navigation in GPS-degraded/denied environments. , 2014, , .		24
82	Experimental study of odometry estimation methods using RGB-D cameras. , 2014, , .		11
83	Infrastructure-free shipdeck tracking for autonomous landing. , 2013, , .		24
84	RRT*-AR: Sampling-based alternate routes planning with applications to autonomous emergency landing of a helicopter. , 2013, , .		27
85	Sparse Tangential Network (SPARTAN): Motion planning for micro aerial vehicles. , 2013, , .		39
86	First results in detecting and avoiding frontal obstacles from a monocular camera for micro unmanned aerial vehicles. , 2013, , .		97
87	First results in autonomous landing and obstacle avoidance by a full-scale helicopter. , 2012, , .		5
88	Autonomous landing at unprepared sites by a full-scale helicopter. Robotics and Autonomous Systems, 2012, 60, 1545-1562.	3.0	72
89	River mapping from a flying robot: state estimation, river detection, and obstacle mapping. Autonomous Robots, 2012, 33, 189-214.	3.2	111
90	Self-supervised segmentation of river scenes. , 2011, , .		25

#	ARTICLE	IF	CITATIONS
91	Efficient C-space and cost function updates in 3D for unmanned aerial vehicles. , 2009, , .		12
92	Flying Fast and Low Among Obstacles: Methodology and Experiments. International Journal of Robotics Research, 2008, 27, 549-574.	5.8	188
93	Flying Fast and Low Among Obstacles. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	70
94	Learning obstacle avoidance parameters from operator behavior. Journal of Field Robotics, 2006, 23, 1037-1058.	3.2	33
95	Learning to Drive Among Obstacles. , 2006, , .		3