

Howard Choset

List of Publications by Year in descending order

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Version: 2024-02-01

156
papers

7,530
citations

109137

35
h-index

82410

72
g-index

163
all docs

163
docs citations

163
times ranked

4650
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 1 | A Conflict-Based Search Framework for Multiobjective Multiagent Path Finding. IEEE Transactions on Automation Science and Engineering, 2023, 20, 1262-1274. | 3.4 | 9 |
| 2 | Learning Cooperative Multi-Agent Policies With Partial Reward Decoupling. IEEE Robotics and Automation Letters, 2022, 7, 890-897. | 3.3 | 2 |
| 3 | Multi-Objective Path-Based D* Lite. IEEE Robotics and Automation Letters, 2022, 7, 3318-3325. | 3.3 | 14 |
| 4 | Continuum Robots for Medical Interventions. Proceedings of the IEEE, 2022, 110, 847-870. | 16.4 | 80 |
| 5 | A general locomotion control framework for multi-legged locomotors. Bioinspiration and Biomimetics, 2022, 17, 046015. | 1.5 | 11 |
| 6 | The Geometry of Optimal Gaits for Inertia-Dominated Kinematic Systems. IEEE Transactions on Robotics, 2022, 38, 3279-3299. | 7.3 | 3 |
| 7 | Design of a Biomimetic Tactile Sensor for Material Classification. , 2022, , . | | 8 |
| 8 | Periodic SLAM: Using Cyclic Constraints to Improve the Performance of Visual-Inertial SLAM on Legged Robots. , 2022, , . | | 1 |
| 9 | Autonomous Ultrasound Scanning using Bayesian Optimization and Hybrid Force Control. , 2022, , . | | 11 |
| 10 | Multi-Objective Safe-Interval Path Planning With Dynamic Obstacles. IEEE Robotics and Automation Letters, 2022, 7, 8154-8161. | 3.3 | 12 |
| 11 | Online Kinematic Calibration for Legged Robots. IEEE Robotics and Automation Letters, 2022, 7, 8178-8185. | 3.3 | 6 |
| 12 | Coordination of lateral body bending and leg movements for sprawled posture quadrupedal locomotion. International Journal of Robotics Research, 2021, 40, 747-763. | 5.8 | 15 |
| 13 | Interleaving Graph Search and Trajectory Optimization for Aggressive Quadrotor Flight. IEEE Robotics and Automation Letters, 2021, 6, 5357-5364. | 3.3 | 9 |
| 14 | Evaluation of Hybrid Control and Palpation Assistance for Situational Awareness in Telemanipulated Task Execution. IEEE Transactions on Medical Robotics and Bionics, 2021, 3, 31-43. | 2.1 | 3 |
| 15 | FusionVLAD: A Multi-View Deep Fusion Networks for Viewpoint-Free 3D Place Recognition. IEEE Robotics and Automation Letters, 2021, 6, 2304-2310. | 3.3 | 17 |
| 16 | Reconstruction of Backbone Curves for Snake Robots. IEEE Robotics and Automation Letters, 2021, 6, 3264-3270. | 3.3 | 12 |
| 17 | Uncertainty-Based Adaptive Data Augmentation For Ultrasound Imaging Anatomical Variations. , 2021, , . | | 2 |
| 18 | Guest Editorial: Special issue on "Topological methods in robotics". Autonomous Robots, 2021, 45, 611-612. | 3.2 | 0 |

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 19 | Frequency modulation of body waves to improve performance of sidewinding robots. International Journal of Robotics Research, 2021, 40, 1547-1562. | 5.8 | 16 |
| 20 | Subdimensional Expansion for Multi-Objective Multi-Agent Path Finding. IEEE Robotics and Automation Letters, 2021, 6, 7153-7160. | 3.3 | 8 |
| 21 | Autonomous Decentralized Shape-Based Navigation for Snake Robots in Dense Environments. , 2021, , . | | 3 |
| 22 | Exploring Large and Complex Environments Fast and Efficiently. , 2021, , . | | 14 |
| 23 | Visual-Laser-Inertial SLAM Using a Compact 3D Scanner for Confined Space. , 2021, , . | | 5 |
| 24 | Multi-objective Conflict-based Search for Multi-agent Path Finding. , 2021, , . | | 7 |
| 25 | 3D Segmentation Learning From Sparse Annotations and Hierarchical Descriptors. IEEE Robotics and Automation Letters, 2021, 6, 5953-5960. | 3.3 | 3 |
| 26 | Geometric Motion Planning for a System on the Cylindrical Surface. , 2021, , . | | 1 |
| 27 | Toward Robotically Automated Femoral Vascular Access. , 2021, , . | | 6 |
| 28 | Communication Learning via Backpropagation in Discrete Channels with Unknown Noise. Proceedings of the AAAI Conference on Artificial Intelligence, 2020, 34, 7160-7168. | 3.6 | 4 |
| 29 | Directional Compliance in Obstacle-Aided Navigation for Snake Robots. , 2020, , . | | 17 |
| 30 | A Compact and Infrastructure-free Confined Space Sensor for 3D Scanning and SLAM. , 2020, , . | | 4 |
| 31 | Surprising simplicities and syntheses in limbless self-propulsion in sand. Journal of Experimental Biology, 2020, 223, . | 0.8 | 29 |
| 32 | Simultaneous Policy and Discrete Communication Learning for Multi-Agent Cooperation. IEEE Robotics and Automation Letters, 2020, 5, 2498-2505. | 3.3 | 6 |
| 33 | Locomotion of a multi-link non-holonomic snake robot with passive joints. International Journal of Robotics Research, 2020, 39, 598-616. | 5.8 | 13 |
| 34 | Sparse Discrete Communication Learning for Multi-Agent Cooperation Through Backpropagation. , 2020, , . | | 6 |
| 35 | A Tunable Magnet-based Tactile Sensor Framework. , 2020, , . | | 5 |
| 36 | SeqSphereVLAD: Sequence Matching Enhanced Orientation-invariant Place Recognition. , 2020, , . | | 12 |

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 37 | Distributed Learning of Decentralized Control Policies for Articulated Mobile Robots. IEEE Transactions on Robotics, 2019, 35, 1109-1122. | 7.3 | 40 |
| 38 | Distributed Reinforcement Learning for Multi-robot Decentralized Collective Construction. Springer Proceedings in Advanced Robotics, 2019, , 35-49. | 0.9 | 41 |
| 39 | Registration with a small number of sparse measurements. International Journal of Robotics Research, 2019, 38, 1403-1419. | 5.8 | 8 |
| 40 | PRIMAL: Pathfinding via Reinforcement and Imitation Multi-Agent Learning. IEEE Robotics and Automation Letters, 2019, 4, 2378-2385. | 3.3 | 149 |
| 41 | Task-Specific Manipulator Design and Trajectory Synthesis. IEEE Robotics and Automation Letters, 2019, 4, 301-308. | 3.3 | 14 |
| 42 | Shape-based coordination in locomotion control. International Journal of Robotics Research, 2018, 37, 1253-1268. | 5.8 | 35 |
| 43 | Distributed Learning for the Decentralized Control of Articulated Mobile Robots. , 2018, , . | | 10 |
| 44 | Snake Robot Urban Search After the 2017 Mexico City Earthquake. , 2018, , . | | 49 |
| 45 | Central Pattern Generator With Inertial Feedback for Stable Locomotion and Climbing in Unstructured Terrain. , 2018, , . | | 22 |
| 46 | Proprioceptive-Inertial Autonomous Locomotion for Articulated Robots. , 2018, , . | | 6 |
| 47 | Geometric Motion Planning for a Three-Link Swimmer in a Three-Dimensional low Reynolds-Number Regime. , 2018, , . | | 8 |
| 48 | Probabilistic pose estimation using a Bingham distribution-based linear filter. International Journal of Robotics Research, 2018, 37, 1610-1631. | 5.8 | 21 |
| 49 | Kinematic Cartography and the Efficiency of Viscous Swimming. IEEE Transactions on Robotics, 2017, 33, 523-535. | 7.3 | 14 |
| 50 | Utility-Guided Palpation for Locating Tissue Abnormalities. IEEE Robotics and Automation Letters, 2017, 2, 864-871. | 3.3 | 17 |
| 51 | Control and locomotion of hydrodynamically coupled rigid spheres. , 2017, , . | | 0 |
| 52 | Ergodic coverage in constrained environments using stochastic trajectory optimization. , 2017, , . | | 31 |
| 53 | Using Bayesian optimization to guide probing of a flexible environment for simultaneous registration and stiffness mapping. , 2016, , . | | 23 |
| 54 | Complementary model update: A method for simultaneous registration and stiffness mapping in flexible environments. , 2016, , . | | 19 |

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 55 | Tail use improves performance on soft substrates in models of early vertebrate land locomotors. <i>Science</i> , 2016, 353, 154-158. | 6.0 | 78 |
| 56 | A physical parameter-based skidding model for the snakeboard. , 2016, , . | | 3 |
| 57 | Multirobot sequential composition. , 2016, , . | | 0 |
| 58 | Optimal control for geometric motion planning of a robot diver. , 2016, , . | | 4 |
| 59 | Shape-based compliant control with variable coordination centralization on a snake robot. , 2016, , . | | 17 |
| 60 | Science for robotics and robotics for science. <i>Science Robotics</i> , 2016, 1, . | 9.9 | 27 |
| 61 | Locomotive analysis of a single-input three-link snake robot. , 2016, , . | | 6 |
| 62 | A dynamical systems approach to obstacle navigation for a series-elastic hexapod robot. , 2016, , . | | 7 |
| 63 | A review on locomotion robophysics: the study of movement at the intersection of robotics, soft matter and dynamical systems. <i>Reports on Progress in Physics</i> , 2016, 79, 110001. | 8.1 | 197 |
| 64 | Pipe Network Locomotion with a Snake Robot. <i>Journal of Field Robotics</i> , 2016, 33, 322-336. | 3.2 | 76 |
| 65 | Kinematic gait synthesis for snake robots. <i>International Journal of Robotics Research</i> , 2016, 35, 100-113. | 5.8 | 45 |
| 66 | Locomotive reduction for snake robots. , 2015, , . | | 13 |
| 67 | Shape-constrained whole-body adaptivity. , 2015, , . | | 9 |
| 68 | Constraint Manifold Subsearch for multirobot path planning with cooperative tasks. , 2015, , . | | 1 |
| 69 | Intelligent Surgical Robots with Situational Awareness. <i>Mechanical Engineering</i> , 2015, 137, S3-S6. | 0.0 | 8 |
| 70 | Continuum Robots for Medical Applications: A Survey. <i>IEEE Transactions on Robotics</i> , 2015, 31, 1261-1280. | 7.3 | 1,005 |
| 71 | Gaussian reconstruction of swarm behavior from partial data. , 2015, , . | | 8 |
| 72 | Modeling rolling gaits of a snake robot. , 2015, , . | | 16 |

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 73 | A Novel, New Robotic Platform for Natural Orifice Distal Pancreatectomy. Surgical Innovation, 2015, 22, 274-282. | 0.4 | 18 |
| 74 | Modulation of orthogonal body waves enables high maneuverability in sidewinding locomotion. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 6200-6205. | 3.3 | 78 |
| 75 | Mobile manufacturing of large structures. , 2015, , . | | 8 |
| 76 | Subdimensional expansion for multirobot path planning. Artificial Intelligence, 2015, 219, 1-24. | 3.9 | 202 |
| 77 | Expensive multiobjective optimization for robotics with consideration of heteroscedastic noise. , 2014, , . | | 5 |
| 78 | Nonlinear dimensionality reduction for kinematic cartography with an application toward robotic locomotion. , 2014, , . | | 3 |
| 79 | Design and architecture of a series elastic snake robot. , 2014, , . | | 74 |
| 80 | Using Lie algebra for shape estimation of medical snake robots. , 2014, , . | | 11 |
| 81 | Torque control strategies for snake robots. , 2014, , . | | 24 |
| 82 | Visual sensing for developing autonomous behavior in snake robots. , 2014, , . | | 26 |
| 83 | Guided locomotion in 3D for snake robots based on contact force optimization. , 2014, , . | | 1 |
| 84 | Design and Open-Loop Control of the ParkourBot, a Dynamic Climbing Robot. IEEE Transactions on Robotics, 2014, 30, 705-718. | 7.3 | 15 |
| 85 | Sidewinding with minimal slip: Snake and robot ascent of sandy slopes. Science, 2014, 346, 224-229. | 6.0 | 209 |
| 86 | Fourth Biennial North American Summer School on Surgical Robotics [Education]. IEEE Robotics and Automation Magazine, 2014, 21, 128-129. | 2.2 | 0 |
| 87 | Multiobjective Optimization Based on Response Surface Methodology with Consideration of Input Dependent Noise. Transactions of the Society of Instrument and Control Engineers, 2014, 50, 792-800. | 0.1 | 0 |
| 88 | Expensive multiobjective optimization for robotics. , 2013, , . | | 25 |
| 89 | Geometric Swimming at Low and High Reynolds Numbers. IEEE Transactions on Robotics, 2013, 29, 615-624. | 7.3 | 53 |
| 90 | Geometric Visualization of Self-Propulsion in a Complex Medium. Physical Review Letters, 2013, 110, 078101. | 2.9 | 63 |

| # | ARTICLE | IF | CITATIONS |
|-----|--|-----|-----------|
| 91 | ODrM* optimal multirobot path planning in low dimensional search spaces. , 2013, , . | | 24 |
| 92 | Gait-based compliant control for snake robots. , 2013, , . | | 29 |
| 93 | Snakes on a plan: Toward combining planning and control. , 2013, , . | | 21 |
| 94 | Demonstration of transoral surgery in cadaveric specimens with the medrobotics flex system. Laryngoscope, 2013, 123, 1168-1172. | 1.1 | 67 |
| 95 | Monocular feature-based periodic motion estimation for surgical guidance. , 2013, , . | | 0 |
| 96 | Motion estimation of snake robots in straight pipes. , 2013, , . | | 28 |
| 97 | A unified Bayesian framework for global localization and SLAM in hybrid metric/topological maps. International Journal of Robotics Research, 2012, 31, 271-288. | 5.8 | 27 |
| 98 | Using kinesthetic input to overcome obstacles with snake robots. , 2012, , . | | 3 |
| 99 | Conical sidewinding. , 2012, , . | | 16 |
| 100 | Probabilistic path planning for multiple robots with subdimensional expansion. , 2012, , . | | 45 |
| 101 | Multi-agent deterministic graph mapping via robot rendezvous. , 2012, , . | | 8 |
| 102 | Virtual Chassis for Snake Robots: Definition and Applications. Advanced Robotics, 2012, 26, 2043-2064. | 1.1 | 25 |
| 103 | Simplified motion modeling for snake robots. , 2012, , . | | 25 |
| 104 | A transoral highly flexible robot. Laryngoscope, 2012, 122, 1067-1071. | 1.1 | 71 |
| 105 | The ParkourBot - a dynamic BowLeg climbing robot. , 2011, , . | | 14 |
| 106 | Geometric motion planning: The local connection, Stokes's™ theorem, and the importance of coordinate choice. International Journal of Robotics Research, 2011, 30, 988-1014. | 5.8 | 89 |
| 107 | Virtual chassis for snake robots. , 2011, , . | | 29 |
| 108 | Context Identification for Efficient Multiple-Model State Estimation of Systems With Cyclical Intermittent Dynamics. IEEE Transactions on Robotics, 2011, 27, 14-28. | 7.3 | 5 |

| # | ARTICLE | IF | CITATIONS |
|-----|---|-----|-----------|
| 109 | DTAR—A Dynamic, Tube-Ascending Robot. IEEE Transactions on Robotics, 2011, 27, 360-364. | 7.3 | 4 |
| 110 | Integrating planning and control for—single-bodied wheeled mobile robots. Autonomous Robots, 2011, 30, 243-264. | 3.2 | 18 |
| 111 | Using response surfaces and expected improvement to optimize snake robot gait parameters. , 2011, , . | | 55 |
| 112 | State estimation for snake robots. , 2011, , . | | 12 |
| 113 | Incremental construction of the saturated-GVG for multi-hypothesis topological SLAM. , 2011, , . | | 7 |
| 114 | Adapting control policies for expensive systems to changing environments. , 2011, , . | | 15 |
| 115 | Shape estimation for image-guided surgery with a highly articulated snake robot. , 2011, , . | | 33 |
| 116 | Inequality constrained Kalman filtering for the localization and registration of a surgical robot. , 2011, , . | | 10 |
| 117 | M*: A complete multirobot path planning algorithm with performance bounds. , 2011, , . | | 128 |
| 118 | Shape and location design of supporting legs for a new Water Strider Robot. , 2011, , . | | 3 |
| 119 | Monte Carlo Localization and registration to prior data for outdoor navigation. , 2011, , . | | 1 |
| 120 | Virtual chassis for snake robots. , 2011, , . | | 1 |
| 121 | LTL-based decentralized supervisory control of multi-robot tasks modelled as Petri nets. , 2011, , . | | 1 |
| 122 | Using response surfaces and expected improvement to optimize snake robot gait parameters. , 2011, , . | | 4 |
| 123 | State estimation and feedforward tremor suppression for a handheld micromanipulator with a Kalman filter. , 2011, , . | | 0 |
| 124 | Generating gaits for snake robots: annealed chain fitting and—keyframe wave extraction. Autonomous Robots, 2010, 28, 271-281. | 3.2 | 86 |
| 125 | Minimalistic, dynamic, tube climbing robot. , 2010, , . | | 9 |
| 126 | DSAC - Dynamic, Single Actuated Climber: Local stability and bifurcations. , 2010, , . | | 14 |

| # | ARTICLE | IF | CITATIONS |
|-----|---|-----|-----------|
| 127 | A multi-hypothesis topological SLAM approach for loop closing on edge-ordered graphs. , 2009, , . | | 16 |
| 128 | A Highly Articulated Robotic Surgical System for Minimally Invasive Surgery. Annals of Thoracic Surgery, 2009, 87, 1253-1256. | 0.7 | 105 |
| 129 | Topological SLAM using neighbourhood information of places. , 2009, , . | | 9 |
| 130 | Flow-Through Policies for Hybrid Controller Synthesis Applied to Fully Actuated Systems. IEEE Transactions on Robotics, 2009, 25, 136-146. | 7.3 | 30 |
| 131 | Parameterized and Scripted Gaits for Modular Snake Robots. Advanced Robotics, 2009, 23, 1131-1158. | 1.1 | 194 |
| 132 | Efficient Boustrophedon Multi-Robot Coverage: an algorithmic approach. Annals of Mathematics and Artificial Intelligence, 2008, 52, 109-142. | 0.9 | 151 |
| 133 | Courteous Cars. IEEE Robotics and Automation Magazine, 2008, 15, 30-38. | 2.2 | 40 |
| 134 | Iterated filters for bearing-only SLAM. , 2008, , . | | 24 |
| 135 | An optimization approach to planning for mobile manipulation. , 2008, , . | | 58 |
| 136 | Context identification for efficient multiple-model state estimation. , 2007, , . | | 0 |
| 137 | Hybrid localization using the hierarchical atlas. , 2007, , . | | 19 |
| 138 | Valet parking without a valet. , 2007, , . | | 55 |
| 139 | Towards a Unified Approach to Motion Planning for Dynamic Underactuated Mechanical Systems with Non-holonomic Constraints. International Journal of Robotics Research, 2007, 26, 1075-1124. | 5.8 | 44 |
| 140 | Geometric Motion Planning Analysis for Two Classes of Underactuated Mechanical Systems. International Journal of Robotics Research, 2007, 26, 1043-1073. | 5.8 | 75 |
| 141 | Design of a modular snake robot. , 2007, , . | | 167 |
| 142 | A dynamic single actuator vertical climbing robot. , 2007, , . | | 16 |
| 143 | Frictional Compliance Model Development and Experiments for Snake Robot Climbing. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , . | 0.0 | 16 |
| 144 | Epicardial Atrial Ablation Using a Novel Articulated Robotic Medical Probe via a Percutaneous Subxiphoid Approach. Innovations: Technology and Techniques in Cardiothoracic and Vascular Surgery, 2006, 1, 335-340. | 0.4 | 0 |

| # | ARTICLE | IF | CITATIONS |
|-----|---|-----|-----------|
| 145 | Three degrees-of-freedom joint for spatial hyper-redundant robots. Mechanism and Machine Theory, 2006, 41, 170-190. | 2.7 | 44 |
| 146 | Relative localization using path odometry information. Autonomous Robots, 2006, 21, 143-154. | 3.2 | 37 |
| 147 | A potential function approach to surface coverage for a surgical robot. Computer Aided Surgery, 2006, 11, 1-9. | 1.8 | 1 |
| 148 | Survey on Urban Search and Rescue Robots. Journal of the Robotics Society of Japan, 2004, 22, 582-586. | 0.0 | 40 |
| 149 | Morse Decompositions for Coverage Tasks. International Journal of Robotics Research, 2002, 21, 331-344. | 5.8 | 223 |
| 150 | Sensor-based Coverage of Unknown Environments: Incremental Construction of Morse Decompositions. International Journal of Robotics Research, 2002, 21, 345-366. | 5.8 | 126 |
| 151 | Coverage for robotics – A survey of recent results. Annals of Mathematics and Artificial Intelligence, 2001, 31, 113-126. | 0.9 | 892 |
| 152 | Coverage of Known Spaces: The Boustrophedon Cellular Decomposition. Autonomous Robots, 2000, 9, 247-253. | 3.2 | 340 |
| 153 | Editorial: Special Issue on Field and Service Robotics. International Journal of Robotics Research, 2000, 19, 971-971. | 5.8 | 0 |
| 154 | Shape-Based Compliance in Locomotion. , 0, , . | | 20 |
| 155 | Coordination of back bending and leg movements for quadrupedal locomotion. , 0, , . | | 33 |
| 156 | Frequency Modulation of Body Waves to Improve Performance of Limbless Robots. , 0, , . | | 1 |