

Ian D Walker

List of Publications by Year in descending order

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Version: 2024-02-01

81
papers

4,104
citations

331538

21
h-index

414303

32
g-index

82
all docs

82
docs citations

82
times ranked

2632
citing authors

#	ARTICLE	IF	CITATIONS
1	Soft Robotics: Biological Inspiration, State of the Art, and Future Research. Applied Bionics and Biomechanics, 2008, 5, 99-117.	0.5	1,168
2	Kinematics and the Implementation of an Elephant's Trunk Manipulator and Other Continuum Style Robots. Journal of Field Robotics, 2003, 20, 45-63.	0.7	566
3	Continuous Backbone "Continuum" Robot Manipulators. ISRN Robotics, 2013, 2013, 1-19.	1.3	267
4	Continuum robot arms inspired by cephalopods. , 2005, 5804, 303.		192
5	A Neural Network Controller for Continuum Robots. IEEE Transactions on Robotics, 2007, 23, 1270-1277.	7.3	155
6	Closed-Form Inverse Kinematics for Continuum Manipulators. Advanced Robotics, 2009, 23, 2077-2091.	1.1	136
7	Geometric constraint-based modeling and analysis of a novel continuum robot with Shape Memory Alloy initiated variable stiffness. International Journal of Robotics Research, 2020, 39, 1620-1634.	5.8	95
8	A Gesture Learning Interface for Simulated Robot Path Shaping With a Human Teacher. IEEE Transactions on Human-Machine Systems, 2014, 44, 41-54.	2.5	88
9	Control Space Reduction and Real-Time Accurate Modeling of Continuum Manipulators Using Ritz and Ritz-Galerkin Methods. IEEE Robotics and Automation Letters, 2018, 3, 328-335.	3.3	80
10	Design and experimental testing of the OctArm soft robot manipulator. , 2006, , .		77
11	Soft Robots and Kangaroo Tails: Modulating Compliance in Continuum Structures Through Mechanical Layer Jamming. Soft Robotics, 2016, 3, 54-63.	4.6	71
12	Accurate and Efficient Dynamics for Variable-Length Continuum Arms: A Center of Gravity Approach. Soft Robotics, 2015, 2, 96-106.	4.6	62
13	Dynamic Modelling for Planar Extensible Continuum Robot Manipulators. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	60
14	<i>TMDyn</i> : A Matlab package for modeling and control of hybrid rigid-continuum robots based on discretized lumped systems and reduced-order models. International Journal of Robotics Research, 2021, 40, 296-347.	5.8	52
15	Octopus-inspired grasp-synergies for continuum manipulators. , 2009, , .		46
16	New dynamic models for planar extensible continuum robot manipulators. , 2007, , .		45
17	Cosserat Rod-Based Dynamic Modeling of Tendon-Driven Continuum Robots: A Tutorial. IEEE Access, 2021, 9, 68703-68719.	2.6	42
18	A geometrical approach to inverse kinematics for continuum manipulators. , 2008, , .		41

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19	Vine-Inspired Continuum Tendril Robots and Circumnutations. <i>Robotics</i> , 2018, 7, 58.	2.1	41
20	Mechanics of Continuum Manipulators, a Comparative Study of Five Methods with Experiments. <i>Lecture Notes in Computer Science</i> , 2017, , 686-702.	1.0	40
21	Dynamic Control of Multisection Three-Dimensional Continuum Manipulators Based on Virtual Discrete-Jointed Robot Models. <i>IEEE/ASME Transactions on Mechatronics</i> , 2021, 26, 777-788.	3.7	39
22	Elasticity Versus Hyperelasticity Considerations in Quasistatic Modeling of a Soft Finger-Like Robotic Appendage for Real-Time Position and Force Estimation. <i>Soft Robotics</i> , 2019, 6, 228-249.	4.6	35
23	Task-space control of extensible continuum manipulators. , 2011, , .		34
24	A new approach to clothing classification using mid-level layers. , 2013, , .		32
25	Exploration and Inspection with Vine-Inspired Continuum Robots. , 2018, , .		32
26	Robot tendrils: Long, thin continuum robots for inspection in space operations. , 2017, , .		30
27	Modeling Variable Curvature Parallel Continuum Robots Using Euler Curves. , 2019, , .		27
28	Elephantâ€™s Trunk Robot: An Extremely Versatile Under-Actuated Continuum Robot Driven by a Single Motor. <i>Journal of Mechanisms and Robotics</i> , 2019, 11, .	1.5	26
29	Empirical investigation of closed-loop control of extensible continuum manipulators. , 2014, , .		24
30	Limiting-case Analysis of Continuum Trunk Kinematics. <i>Proceedings - IEEE International Conference on Robotics and Automation</i> , 2007, , .	0.0	23
31	The Importance of Continuous and Discrete Elements in Continuum Robots. <i>International Journal of Advanced Robotic Systems</i> , 2013, 10, 165.	1.3	23
32	Center-of-Gravity-Based Approach for Modeling Dynamics of Multisection Continuum Arms. <i>IEEE Transactions on Robotics</i> , 2019, 35, 1097-1108.	7.3	22
33	A Comparison of Constant Curvature Forward Kinematics for Multisection Continuum Manipulators. , 2018, , .		21
34	Dual Quaternion based modal kinematics for multisection continuum arms. , 2015, , .		19
35	Developing a Kinematically Similar Master Device for Extensible Continuum Robot Manipulators. <i>Journal of Mechanisms and Robotics</i> , 2018, 10, .	1.5	19
36	Stiffness Imaging With a Continuum Appendage: Real-Time Shape and Tip Force Estimation From Base Load Readings. <i>IEEE Robotics and Automation Letters</i> , 2020, 5, 2824-2831.	3.3	19

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37	Biologically inspired vine-like and tendril-like robots. , 2015, , .		17
38	Searching and Intertwining: Climbing Plants and GrowBots. <i>Frontiers in Robotics and AI</i> , 2020, 7, 118.	2.0	17
39	A Lumped-Mass Model for Large Deformation Continuum Surfaces Actuated by Continuum Robotic Arms. <i>Journal of Mechanisms and Robotics</i> , 2020, 12, .	1.5	17
40	Spatial kinematic modeling of a long and thin continuum robotic cable. , 2015, , .		15
41	Reduced Order vs. Discretized Lumped System Models with Absolute and Relative States for Continuum Manipulators. , 0, , .		14
42	Classification of Clothing Using Midlevel Layers. <i>ISRN Robotics</i> , 2013, 2013, 1-17.	1.3	14
43	An energy minimization approach to 3D non-rigid deformable surface estimation using RGBD data. , 2012, , .		12
44	Occlusion-aware reconstruction and manipulation of 3D articulated objects. , 2012, , .		12
45	A Haptic Continuum Interface for the Teleoperation of Extensible Continuum Manipulators. <i>IEEE Robotics and Automation Letters</i> , 2020, 5, 1875-1882.	3.3	12
46	3D non-rigid deformable surface estimation without feature correspondence. , 2013, , .		11
47	Self-motion analysis of extensible continuum manipulators. , 2013, , .		11
48	Design, modeling and performance evaluation of a long and slim continuum robotic cable. , 2014, , .		11
49	Autonomous robotic refueling of an unmanned surface vehicle in varying sea states. , 2015, , .		11
50	Teleoperation mappings from rigid link robots to their extensible continuum counterparts. , 2016, , .		11
51	Three-Dimensional-Printable Thermoactive Helical Interface With Decentralized Morphological Stiffness Control for Continuum Manipulators. <i>IEEE Robotics and Automation Letters</i> , 2018, 3, 2283-2290.	3.3	11
52	Design and Characterization of a Novel Robotic Surface for Application to Compressed Physical Environments. , 2019, , .		11
53	Design, construction, and testing of a new class of mobile robots for cave exploration. , 2009, , .		10
54	Teleoperation control of a redundant continuum manipulator using a non-redundant rigid-link master. , 2012, , .		9

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55	Robot-Human Handovers Based on Trust. , 2015, , .		9
56	Design and Characterization of a Novel, Continuum-Robot Surface for the Human Environment. , 2019, , .		9
57	Rigid and non-rigid classification using interactive perception. , 2010, , .		8
58	TREE: A Variable Topology, Branching Continuum Robot. , 2019, , .		8
59	Motion Planning for a Continuum Robotic Mobile Lamp: Defining and Navigating the Configuration Space. , 2019, , .		8
60	Continuum robot appendages for traversal of uneven terrain in in situ exploration. , 2011, , .		7
61	Challenges in creating long continuum robots. , 2016, , .		7
62	Energy based control of compass gait soft limbed bipeds. , 2014, , .		6
63	A Nonlinear Control Strategy for Extensible Continuum Robots. , 2018, , .		6
64	The Challenges of Inferring Organic Function from Structure and Its Emulation in Biomechanics and Biomimetics. Biomimetics, 2021, 6, 21.	1.5	6
65	3D Printing of Concrete with a Continuum Robot Hose Using Variable Curvature Kinematics. , 2022, , .		6
66	Continuum Robot Control Based on Virtual Discrete-Jointed Robot Models. , 2018, , .		5
67	Kinematic-Model-Free Control for Space Operations with Continuum Manipulators. , 2021, , .		5
68	A vision of the patient room as an architectural-robotic ecosystem. , 2012, , .		4
69	Modelling an Actuated Large Deformation Soft Continuum Robot Surface Undergoing External Forces Using a Lumped-Mass Approach. , 2018, , .		4
70	A Discrete-Jointed Robot Model Based Control Strategy for Spatial Continuum Manipulators. , 2020, , .		4
71	Interactive Perception of Rigid and Non-Rigid Objects. International Journal of Advanced Robotic Systems, 2012, 9, 227.	1.3	3
72	Autonomous continuum grasping. , 2013, , .		3

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73	Editorial: Generation Growbots: Materials, Mechanisms, and Biomimetic Design for Growing Robots. <i>Frontiers in Robotics and AI</i> , 2021, 8, 711942.	2.0	3
74	“Architectural Robotics”: An interdisciplinary course rethinking the machines we live in. , 2010, , .		2
75	Rethinking the Machines in Which We Live: A Multidisciplinary Course in Architectural Robotics. <i>IEEE Robotics and Automation Magazine</i> , 2014, 21, 143-150.	2.2	2
76	Efficient Spatial Dynamics for Continuum Arms. , 2015, , .		2
77	Task-space control of extensible continuum manipulators. , 2011, , .		2
78	Opportunities and Challenges in Soft Robotics. <i>Advanced Intelligent Systems</i> , 2020, 2, 2000072.	3.3	1
79	Handling uncertainty due to the delay between complex sensing and manipulation in an industrial workcell. <i>Robotica</i> , 2006, 24, 697-698.	1.3	0
80	Handling Uncertainty due to the Delay Between Complex Sensing and Manipulation in an Industrial Workcell. , 2006, , .		0
81	Mobility and routing joint design for lifetime maximization in mobile sensor networks. , 2011, , .		0