Elliot W Hawkes

List of Publications by Year
in descending order

63	3,517	186265	276875
papers	citations	28 h-index	41 g-index

65	65	65	2483
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	A soft robot that navigates its environment through growth. Science Robotics, 2017, 2, .	17.6	603
2	A robotic device using gecko-inspired adhesives can grasp and manipulate large objects in microgravity. Science Robotics, 2017, 2, .	17.6	196
3	Wolverine: A wearable haptic interface for grasping in virtual reality. , 2016, , .		135
4	A Soft, Steerable Continuum Robot That Grows via Tip Extension. Soft Robotics, 2019, 6, 95-108.	8.0	130
5	Series pneumatic artificial muscles (sPAMs) and application to a soft continuum robot. , 2017, 2017, 5503-5510.		111
6	A Multimodal Robot for Perching and Climbing on Vertical Outdoor Surfaces. IEEE Transactions on Robotics, 2017, 33, 38-48.	10.3	105
7	Vine Robots. IEEE Robotics and Automation Magazine, 2020, 27, 120-132.	2.0	97
8	Human climbing with efficiently scaled gecko-inspired dry adhesives. Journal of the Royal Society Interface, 2015, 12, 20140675.	3.4	96
9	Fluidic Fabric Muscle Sheets for Wearable and Soft Robotics. Soft Robotics, 2020, 7, 179-197.	8.0	95
10	Design and implementation of a 300% strain soft artificial muscle. , 2016, , .		91
11	The Geckoâ€™s Toe: Scaling Directional Adhesives for Climbing Applications. IEEE/ASME Transactions on Mechatronics, 2013, 18, 518-526.	5.8	87
12	Controlling subterranean forces enables a fast, steerable, burrowing soft robot. Science Robotics, 2021, 6, .	17.6	75
13	Bio-inspired geotechnical engineering: principles, current work, opportunities and challenges. Geotechnique, 2022, 72, 687-705.	4.0	74
14	An untethered isoperimetric soft robot. Science Robotics, 2020, 5, .	17.6	72
15	A Multimodal, Enveloping Soft Gripper: Shape Conformation, Bioinspired Adhesion, and Expansion-Driven Suction. IEEE Transactions on Robotics, 2021, 37, 350-362.	10.3	71
16	Hard questions for soft robotics. Science Robotics, 2021, 6, .	17.6	70
17	Aggressive Flight With Quadrotors for Perching on Inclined Surfaces. Journal of Mechanisms and Robotics, 2016, 8, .	2.2	68
18	A Tip-Extending Soft Robot Enables Reconfigurable and Deployable Antennas. IEEE Robotics and Automation Letters, 2018, 3, 949-956.	5.1	66

#	Article	IF	Citations
19	A Soft, Controllable, High Force Density Linear Brake Utilizing Layer Jamming. IEEE Robotics and Automation Letters, 2018, 3, 450-457.	5.1	58
20	Grasping Without Squeezing: Design and Modeling of Shear-Activated Grippers. IEEE Transactions on Robotics, 2018, 34, 303-316.	10.3	57
21	Engineered jumpers overcome biological limits via work multiplication. Nature, 2022, 604, 657-661.	27.8	51
22	Eversion and Retraction of a Soft Robot Towards the Exploration of Coral Reefs. , 2019, , .		50
23	Simple, Low-Hysteresis, Foldable, Fabric Pneumatic Artificial Muscle. IEEE Robotics and Automation Letters, 2020, 5, 3406-3413.	5.1	48
24	Dynamic surface grasping with directional adhesion. , 2013, , .		47
25	Mechanism and function of root circumnutation. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	45
26	Surface and Shape Deposition Manufacturing for the Fabrication of a Curved Surface Gripper. Journal of Mechanisms and Robotics, 2015, 7, .	2.2	42
27	Robust navigation of a soft growing robot by exploiting contact with the environment. International Journal of Robotics Research, 2020, 39, 1724-1738.	8.5	42
28	Connecting the legs with a spring improves human running economy. Journal of Experimental Biology, 2019, 222, .	1.7	41
29	Pneumatic Reel Actuator: Design, modeling, and implementation. , 2017, , .		40
30	Soft, Wearable Robotics and Haptics: Technologies, Trends, and Emerging Applications. Proceedings of the IEEE, 2022, 110, 246-272.	21.3	40
31	Modeling of Bioinspired Apical Extension in a Soft Robot. Lecture Notes in Computer Science, 2017, , 522-531.	1.3	39
32	Scaling controllable adhesives to grapple floating objects in space. , 2015, , .		36
33	Exomuscle: An inflatable device for shoulder abduction support. , 2017, , .		35
34	Obstacle-Aided Navigation of a Soft Growing Robot. , 2018, , .		35
35	APAM: Antagonistic Pneumatic Artificial Muscle. , 2018, , .		34
36	Soft Robotic Burrowing Device with Tip-Extension and Granular Fluidization. , 2018, , .		33

#	Article	IF	Citations
37	Design, Modeling, Control, and Application of Everting Vine Robots. Frontiers in Robotics and AI, 2020, 7, 548266.	3.2	33
38	Helical actuation on a soft inflated robot body. , 2018, , .		31
39	Tunable Photothermal Actuation Enabled by Photoswitching of Donorâ€“Acceptor Stenhouse Adducts. ACS Applied Materials & Interfaces, 2020, 12, 54075-54082.	8.0	31
40	Design of a Compact Actuation and Control System for Flexible Medical Robots. IEEE Robotics and Automation Letters, 2017, 2, 1579-1585.	5.1	29
41	Development and Evaluation of an Intuitive Flexible Interface for Teleoperating Soft Growing Robots. , 2018, , .		29
42	μTugs: Enabling microrobots to deliver macro forces with controllable adhesives. , 2015, , .		27
43	Free-flyer acquisition of spinning objects with gecko-inspired adhesives. , 2016, , .		27
44	Upper Extremity Exomuscle for Shoulder Abduction Support. IEEE Transactions on Medical Robotics and Bionics, 2020, 2, 474-484.	3.2	26
45	Scaling walls: Applying dry adhesives to the real world. , 2011, , .		25
46	Fruit fly scale robots can hover longer with flapping wings than with spinning wings. Journal of the Royal Society Interface, 2016, 13, 20160730.	3.4	25
47	Toward the Design of Personalized Continuum Surgical Robots. Annals of Biomedical Engineering, 2018, 46, 1522-1533.	2.5	23
48	Characterizing Environmental Interactions for Soft Growing Robots. , 2019, , .		22
49	Design of Materials and Mechanisms for Responsive Robots. Annual Review of Control, Robotics, and Autonomous Systems, 2018, 1, 359-384.	11.8	17
50	VINE Catheter for Endovascular Surgery. IEEE Transactions on Medical Robotics and Bionics, 2021, 3, 384-391.	3.2	14
51	Nutation Aids Heterogeneous Substrate Exploration in a Robophysical Root. , 2019, , .		12
52	Spatially variant microstructured adhesive with one-way friction. Journal of the Royal Society Interface, 2019, 16, 20180705.	3.4	12
53	3D Electromagnetic Reconfiguration Enabled by Soft Continuum Robots. IEEE Robotics and Automation Letters, 2020, 5, 1704-1711.	5.1	12
54	Hybrid Vine Robot With Internal Steering-Reeling Mechanism Enhances System-Level Capabilities. IEEE Robotics and Automation Letters, 2021, 6, 5437-5444.	5.1	12

#	Article	IF	Citations
55	Low-Cost, Continuously Variable, Strain Wave Transmission Using Gecko-Inspired Adhesives. IEEE Robotics and Automation Letters, 2019, 4, 894-901.	5.1	11
56	Forcing the issue: testing gecko-inspired adhesives. Journal of the Royal Society Interface, 2021, 18, 20200730.	3.4	11
57	Geometric Solutions for General Actuator Routing on Inflated-Beam Soft Growing Robots. IEEE Transactions on Robotics, 2022, 38, 1820-1840.	10.3	8
58	Soft Retraction Device and Internal Camera Mount for Everting Vine Robots. , 2021, , .		8
59	Perching failure detection and recovery with onboard sensing. , 2015, , .		6
60	Sampling heuristics for optimal motion planning in high dimensions. , 2011, , .		6
61	Passive returning mechanism for twisted string actuators. , 2017, , .		5
62	One Motor, Two Degrees of Freedom Through Dynamic Response Switching. IEEE Robotics and Automation Letters, 2016, 1, 969-975.	5.1	4
63	SPHR: A Soft Pneumatic Hybrid Robot with extreme shape changing and lifting abilities. , 2021, , .		0