Ronald S Fearing

List of Publications by Year
in descending order

121 papers	11,587 citations	101543 36 h-index	133252 59 g-index
127 all docs	127 docs citations	127 times ranked	10178 citing authors

#	Article	IF	Citations
1	Adhesive force of a single gecko foot-hair. Nature, 2000, 405, 681-685.	27.8	2,387
2	Evidence for van der Waals adhesion in gecko setae. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 12252-12256.	7.1	1,617
3	Nanowire active-matrix circuitry for low-voltage macroscale artificial skin. Nature Materials, 2010, 9, 821-826.	27.5	1,162
4	Optically- and Thermally-Responsive Programmable Materials Based on Carbon Nanotube-Hydrogel Polymer Composites. Nano Letters, 2011, 11, 3239-3244.	9.1	476
5	Synthetic gecko foot-hair micro/nano-structures as dry adhesives. Journal of Adhesion Science and Technology, 2003, 17, 1055-1073.	2.6	456
6	Wearable Microfluidic Diaphragm Pressure Sensor for Health and Tactile Touch Monitoring. Advanced Materials, 2017, 29, 1701985.	21.0	431
7	Microfabricated hinges. Sensors and Actuators A: Physical, 1992, 33, 249-256.	4.1	286
8	Effective elastic modulus of isolated gecko setal arrays. Journal of Experimental Biology, 2006, 209, 3558-3568.	1.7	284
9	Insect-scale fast moving and ultrarobust soft robot. Science Robotics, 2019, 4, .	17.6	282
10	Carbon Nanotube Active-Matrix Backplanes for Conformal Electronics and Sensors. Nano Letters, 2011, 11, 5408-5413.	9.1	270
11	Photoactuators and motors based on carbon nanotubes with selective chirality distributions. Nature Communications, 2014, 5, 2983.	12.8	269
12	Optimal energy density piezoelectric bending actuators. Sensors and Actuators A: Physical, 2005, 119, 476-488.	4.1	217
13	RoACH: An autonomous 2.4g crawling hexapod robot. , 2008, , .		147
14	Directional adhesion of gecko-inspired angled microfiber arrays. Applied Physics Letters, 2008, 93, .	3.3	146
15	Tracking fast inverted trajectories of the underactuated Acrobot. IEEE Transactions on Automation Science and Engineering, 1999, 15, 740-750.	2.3	139
16	Contact Self-Cleaning of Synthetic Gecko Adhesive from Polymer Microfibers. Langmuir, 2008, 24, 10587-10591.	3.5	119
17	Sliding-induced adhesion of stiff polymer microfibre arrays. I. Macroscale behaviour. Journal of the Royal Society Interface, 2008, 5, 835-844.	3.4	116
18	Basic Solid Mechanics for Tactile Sensing. International Journal of Robotics Research, 1985, 4, 40-54.	8.5	110

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19	Applications of micromechatronics in minimally invasive surgery. IEEE/ASME Transactions on Mechatronics, 1998, 3, 34-42.	5.8	91
20	Efficient charge recovery method for driving piezoelectric actuators with quasi-square waves. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2003, 50, 237-244.	3.0	90
21	Robotics in scansorial environments. , 2005, , .		89
22	Controllable Particle Adhesion with a Magnetically Actuated Synthetic Gecko Adhesive. Advanced Functional Materials, 2013, 23, 3256-3261.	14.9	86
23	Sliding and hopping gaits for the underactuated Acrobot. IEEE Transactions on Automation Science and Engineering, 1998, 14, 629-634.	2.3	84
24	Gecko-Inspired Combined Lamellar and Nanofibrillar Array for Adhesion on Nonplanar Surface. Langmuir, 2009, 25, 12449-12453.	3.5	84
25	Sliding-induced adhesion of stiff polymer microfibre arrays. II. Microscale behaviour. Journal of the Royal Society Interface, 2008, 5, 845-853.	3.4	80
26	Terradynamically streamlined shapes in animals and robots enhance traversability through densely cluttered terrain. Bioinspiration and Biomimetics, 2015, 10, 046003.	2.9	73
27	Efficient resonant drive of flapping-wing robots. , 2009, , .		71
28	Attachment of fiber array adhesive through side contact. Journal of Applied Physics, 2005, 98, 103521.	2.5	70
29	Animal-inspired design and aerodynamic stabilization of a hexapedal millirobot. , 2013, , .		65
30	Design Exploration and Kinematic Tuning of a Power Modulating Jumping Monopod. Journal of Mechanisms and Robotics, 2017, 9, .	2.2	60
31	Hybrid Coreâ^'Shell Nanowire Forests as Self-Selective Chemical Connectors. Nano Letters, 2009, 9, 2054-2058.	9.1	59
32	Gecko toe and lamellar shear adhesion on macroscopic, engineered rough surfaces. Journal of Experimental Biology, 2013, 217, 283-9.	1.7	57
33	Repetitive extreme-acceleration (14-g) spatial jumping with Salto-1P. , 2017, , .		53
34	Shear Adhesion Strength of Thermoplastic Gecko-Inspired Synthetic Adhesive Exceeds Material Limits. Langmuir, 2011, 27, 11278-11281.	3.5	52
35	Transition by head-on collision: mechanically mediated manoeuvres in cockroaches and small robots. Journal of the Royal Society Interface, 2018, 15, 20170664.	3.4	52
36	An integrated jumping-crawling robot using height-adjustable jumping module. , 2016, , .		50

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37	‹title›Alignment of microparts using force-controlled pushing‹/title›. , 1998, , .		47
38	Flight control for target seeking by 13 gram ornithopter. , 2011, , .		46
39	JumpRoACH: A Trajectory-Adjustable Integrated Jumpingâ€“Crawling Robot. IEEE/ASME Transactions on Mechatronics, 2019, 24, 947-958.	5.8	46
40	Towards friction and adhesion from high modulus microfiber arrays. Journal of Adhesion Science and Technology, 2007, 21, 1297-1315.	2.6	45
41	Fast scale prototyping for folded millirobots. , 2008, , .		44
42	Dry Self-Cleaning Properties of Hard and Soft Fibrillar Structures. ACS Applied Materials & Interfaces, 2013, 5, 6081-6088.	8.0	42
43	Performance analysis and terrain classification for a legged robot over rough terrain. , 2012, , .		39
44	Wet Self-Cleaning of Superhydrophobic Microfiber Adhesives Formed from High Density Polyethylene. Langmuir, 2012, 28, 15372-15377.	3.5	39
45	Integrated Manufacture of Exoskeletons and Sensing Structures for Folded Millirobots. Journal of Mechanisms and Robotics, 2015, 7, .	2.2	38
46	Controlled In-Plane Locomotion of a Hexapod Using a Single Actuator. IEEE Transactions on Robotics, 2015, 31, 157-167.	10.3	37
47	STAR, a sprawl tuned autonomous robot. , 2013, , .		36
48	Adhesion of an elastic plate to a sphere. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2008, 464, 1309-1317.	2.1	33
49	Experimental dynamics of wing assisted running for a bipedal ornithopter. , 2011, , .		33
50	Precision Robotic Leaping and Landing Using Stance-Phase Balance. IEEE Robotics and Automation Letters, 2020, 5, 3422-3429.	5.1	33
51	Wet and Dry Adhesion Properties of Selfâ€Selective Nanowire Connectors. Advanced Functional Materials, 2009, 19, 3098-3102.	14.9	31
52	Effect of Fiber Geometry on Macroscale Friction of Ordered Low-Density Polyethylene Nanofiber Arrays. Langmuir, 2011, 27, 11008-11016.	3.5	31
53	Dynamic climbing of near-vertical smooth surfaces. , 2012, , .		31
54	Ground fluidization promotes rapid running of a lightweight robot. International Journal of Robotics Research, 2013, 32, 859-869.	8.5	30

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55	Running beyond the bio-inspired regime. , 2015, , .		30
56	Pop-up mars rover with textile-enhanced rigid-flex PCB body. , 2017, , .		29
57	Towards a Soft Fingertip with Integrated Sensing and Actuation. , 2018, , .		27
58	MEDIC: A legged millirobot utilizing novel obstacle traversal. , 2011, , .		26
59	Fast scale prototyping for folded millirobots. , 2008, , .		25
60	Dynamometer Power Output Measurements of Miniature Piezoelectric Actuators. IEEE/ASME Transactions on Mechatronics, 2009, 14, 1-10.	5.8	25
61	A power modulating leg mechanism for monopedal hopping. , 2016, , .		22
62	Planning with the STAR(s). , 2014, , .		21
63	Finding Only Finite Roots to Large Kinematic Synthesis Systems. Journal of Mechanisms and Robotics, 2017, 9, .	2.2	21
64	Mechanical principles of dynamic terrestrial self-righting using wings. Advanced Robotics, 2017, 31, 881-900.	1.8	21
65	Precision Jumping Limits from Flight-phase Control in Salto-1P. , 2018, , .		21
66	Rapidly Prototyped Orthotweezers for Automated Microassembly. , 2007, , .		20
67	Rapid Inversion: Running Animals and Robots Swing like a Pendulum under Ledges. PLoS ONE, 2012, 7, e38003.	2.5	19
68	Systematic study of the performance of small robots on controlled laboratory substrates. Proceedings of SPIE, 2010, , .	0.8	18
69	Flight forces and altitude regulation of 12 gram I-Bird. , 2010, , .		18
70	Anisotropic collapsible leg spines for increased millirobot traction. , 2015, , .		18
71	Thin-film repulsive-force electrostatic actuators. Sensors and Actuators A: Physical, 2018, 270, 252-261.	4.1	18
72	Foot design and integration for bioinspired climbing robots. , 2006, 6230, 426.		17

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73	Simulation of synthetic gecko arrays shearing on rough surfaces. Journal of the Royal Society Interface, 2014, 11, 20140021.	3.4	17
74	Optical flow on a flapping wing robot. , 2009, , .		15
75	Comparison of ornithopter wind tunnel force measurements with free flight. , 2014, , .		15
76	Learning Image-Conditioned Dynamics Models for Control of Underactuated Legged Millirobots. , 2018, , .		15
77	Reducing Contact Resistance Using Compliant Nickel Nanowire Arrays. IEEE Transactions on Components and Packaging Technologies, 2008, 31, 859-868.	1.3	13
78	Compliance-based dynamic steering for hexapods. , 2012, , .		12
79	Role of Counter-substrate Surface Energy in Macroscale Friction of Nanofiber Arrays. Langmuir, 2012, 28, 2922-2927.	3.5	12
80	Roll oscillation modulated turning in dynamic millirobots. , 2014, , .		12
81	Step climbing cooperation primitives for legged robots with a reversible connection. , 2016, , .		12
82	Coordinated launching of an ornithopter with a hexapedal robot. , 2015, , .		11
83	Cockroach-inspired winged robot reveals principles of ground-based dynamic self-righting. , 2016, , .		11
84	Steering of an Underactuated Legged Robot through Terrain Contact with an Active Tail. , 2018, , .		11
85	Automatic identification of dynamic piecewise affine models for a running robot. , 2013, , .		10
86	Friction Characteristics of Polymeric Nanofiber Arrays against Substrates with Tailored Geometry. Langmuir, 2013, 29, 8395-8401.	3.5	9
87	Cost of locomotion of a dynamic hexapedal robot. , 2013, , .		9
88	Dynamic terrestrial self-righting with a minimal tail. , 2017, , .		9
89	Detection of slippery terrain with a heterogeneous team of legged robots. , 2014, , .		8
90	1STAR, A one-actuator steerable robot. , 2014, , .		8

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91	Self-Engaging Spined Gripper with Dynamic Penetration and Release for Steep Jumps. , 2018, , .		8
92	Drift-free Roll and Pitch Estimation for High-acceleration Hopping. , 2019, , .		8
93	Designing Dynamic Machines With Large-Scale Root Finding. IEEE Transactions on Robotics, 2020, 36, 1135-1152.	10.3	8
94	Challenges for Efffective Millirobots. , 2006, , .		7
95	Force sensing shell using a planar sensor for miniature legged robots. , 2015, , .		7
96	Bidirectional, Thin-Film Repulsive-/Attractive-Force Electrostatic Actuators for a Crawling Milli-Robot. , 2018, , .		7
97	Micro-Actuators for Micro-Robots: Electric and Magnetic**This work was funded in part by: NSF-PYI grant IRI-9157051.. Handbook of Sensors and Actuators, 1998, 6, 161-179.	0.0	6
98	Modeling and control of an ornithopter for diving. , 2016, , .		6
99	Wearable Devices: Wearable Microfluidic Diaphragm Pressure Sensor for Health and Tactile Touch Monitoring (Adv. Mater. 39/2017). Advanced Materials, 2017, 29, .	21.0	6
100	Maneuverability and mobility in palm-sized legged robots. , 2012, , .		5
101	Cooperative inchworm localization with a low cost team. , 2017, , .		5
102	Cockroach Milli-Robot With Improved Load Capacity. Journal of Mechanisms and Robotics, 2019, 11, .	2.2	5
103	High-rate controlled turning with a pair of miniature legged robots. , 2017, , .		4
104	Rapid-manufacturable hair sensor array for legged millirobots. , 2012, , .		3
105	Angled microfiber arrays as low-modulus, low Poisson's ratio compliant substrates. Journal of Micromechanics and Microengineering, 2014, 24, 065016.	2.6	3
106	Robotic folding of 2D and 3D structures from a ribbon. , 2016, , .		3
107	Adjustable Power Modulation For A Leg Mechanism Suitable For Running. , 2019, , .		3
108	Challenges for 100 Milligram Flapping Flight. , 2009, , 219-229.		3

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109	Macromodel for the mechanics of gecko hair adhesion. , 2008, , .		2
110	VLR: Cockroach millirobot with load decoupling structure. , 2015, , .		2
111	Finding Only Finite Roots to Large Kinematic Synthesis Systems. , 2016, , .		2
112	A Study on Finding Finite Roots for Kinematic Synthesis. , 2017, , .		2
113	Flight control for target seeking by 13 gram ornithopter. , 2011, , .		2
114	Mechanics of a Novel Shear-activated Microfiber Array Adhesive. Materials Research Society Symposia Proceedings, 2008, 1086, 1.	0.1	1
115	Dynamic legged locomotion for palm-size robots. Proceedings of SPIE, 2015, , .	0.8	1
116	A path planning algorithm for single-ended continuous planar robotic ribbon folding. , 2016, , .		1
117	Body Lift and Drag for a Legged Millirobot in Compliant Beam Environment. , 2019, , .		1
118	Automatic Leg Regeneration for Robot Mobility Recovery. , 2019, , .		1
119	Team-Based Robot Righting via Pushing and Shell Design. , 2019, , .		1
120	Exact motion planning solution for principally kinematic systems. , 2011, , .		0
121	Fitting conics to noisy data using stochastic linearization. , 2011, , .		0