Hugh Herr

List of Publications by Year
in descending order

67 papers	4,218 citations	218381 26 h-index	182168 51 g-index
72 all docs	72 docs citations	72 times ranked	2961 citing authors

#	Article	IF	Citations
1	A cutaneous mechanoneural interface for neuroprosthetic feedback. Nature Biomedical Engineering, 2022, 6, 731-740.	11.6	16
2	ARACAM: A RGB-D Multi-View Photogrammetry System for Lower Limb 3D Reconstruction Applications. Sensors, 2022, 22, 2443.	2.1	8
3	Modulation of Prosthetic Ankle Plantarflexion Through Direct Myoelectric Control of a Subject-Optimized Neuromuscular Model. IEEE Robotics and Automation Letters, 2022, 7, 7620-7627.	3.3	4
4	An Ankle-Foot Prosthesis for Rock Climbing Augmentation. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2021, 29, 41-51.	2.7	18
5	Accurate Heuristic Terrain Prediction in Powered Lower-Limb Prostheses Using Onboard Sensors. IEEE Transactions on Biomedical Engineering, 2021, 68, 384-392.	2.5	15
6	Neural interfacing architecture enables enhanced motor control and residual limb functionality postamputation. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	13
7	Restoration of bilateral motor coordination from preserved agonist-antagonist coupling in amputation musculature. Journal of NeuroEngineering and Rehabilitation, 2021, 18, 38.	2.4	2
8	The Agonist-antagonist Myoneural Interface. Techniques in Orthopaedics, 2021, 36, 337-344.	0.1	2
9	Acquisition of Surface EMG Using Flexible and Low-Profile Electrodes for Lower Extremity Neuroprosthetic Control. IEEE Transactions on Medical Robotics and Bionics, 2021, 3, 563-572.	2.1	10
10	Magnetomicrometry. Science Robotics, 2021, 6, .	9.9	26
11	The Agonist-Antagonist Myoneural Interface. Hand Clinics, 2021, 37, 435-445.	0.4	5
12	Design and Preliminary Results of a Reaction Force Series Elastic Actuator for Bionic Knee and Ankle Prostheses. IEEE Transactions on Medical Robotics and Bionics, 2021, 3, 542-553.	2.1	26
13	Reinventing Extremity Amputation in the Era of Functional Limb Restoration. Annals of Surgery, 2021, 273, 269-279.	2.1	36
14	Agonist-antagonist Myoneural Interfaces in Above-knee Amputation Preserve Distal Joint Function and Perception. Annals of Surgery, 2021, 273, e115-e118.	2.1	7
15	Rejecting Impulse Artifacts from Surface EMG Signals using Real-time Cumulative Histogram Filtering. , 2021, 2021, 6235-6241.		4
16	Spatiotemporally Synchronized Surface EMG and Ultrasonography Measurement Using a Flexible and Low-Profile EMG Electrode. , 2021, 2021, 6242-6246.		1
17	Flexible Dry Electrodes for EMG Acquisition within Lower Extremity Prosthetic Sockets. , 2020, 2020, 1088-1095.		12
18	Electric-Energetic Consequences of Springs in Lower-Extremity Powered Prostheses on Varied Terrain. , 2020, , .		2

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19	Pressure based MRI-compatible muscle fascicle length and joint angle estimation. Journal of NeuroEngineering and Rehabilitation, 2020, 17, 118.	2.4	2
20	Agonist-antagonist myoneural interface amputation preserves proprioceptive sensorimotor neurophysiology in lower limbs. Science Translational Medicine, 2020, 12, .	5.8	27
21	An untethered cable-driven ankle exoskeleton with plantarflexion-dorsiflexion bidirectional movement assistance. Frontiers of Information Technology and Electronic Engineering, 2020, 21, 723-739.	1.5	20
22	An Autonomous Exoskeleton for Ankle Plantarflexion Assistance. , 2019, , .		2
23	Low-Latency Tracking of Multiple Permanent Magnets. IEEE Sensors Journal, 2019, 19, 11458-11468.	2.4	36
24	A Framework for Measuring the Time-Varying Shape and Full-Field Deformation of Residual Limbs Using 3-D Digital Image Correlation. IEEE Transactions on Biomedical Engineering, 2019, 66, 2740-2752.	2.5	31
25	3D Ultrasound Imaging of Residual Limbs With Camera-Based Motion Compensation. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2019, 27, 207-217.	2.7	12
26	Goats decrease hindlimb stiffness when walking over compliant surfaces. Journal of Experimental Biology, 2019, 222, .	0.8	9
27	Polyimide Electrode-Based Electrical Stimulation Impedes Early Stage Muscle Graft Regeneration. Frontiers in Neurology, 2019, 10, 252.	1.1	6
28	Towards functional restoration for persons with limb amputation: A dual-stage implementation of regenerative agonist-antagonist myoneural interfaces. Scientific Reports, 2019, 9, 1981.	1.6	30
29	Caprine Models of the Agonist-Antagonist Myoneural Interface Implemented at the Above- and Below-Knee Amputation Levels. Plastic and Reconstructive Surgery, 2019, 144, 218e-229e.	0.7	15
30	A High-Performance Cable-Drive Module for the Development of Wearable Devices. IEEE/ASME Transactions on Mechatronics, 2018, 23, 1238-1248.	3.7	31
31	Translational Motion Tracking of Leg Joints for Enhanced Prediction of Walking Tasks. IEEE Transactions on Biomedical Engineering, 2018, 65, 763-769.	2.5	46
32	The Ewing Amputation: The First Human Implementation of the Agonist-Antagonist Myoneural Interface. Plastic and Reconstructive Surgery - Global Open, 2018, 6, e1997.	0.3	51
33	Closed-loop functional optogenetic stimulation. Nature Communications, 2018, 9, 5303.	5.8	40
34	A Radar-Based Terrain Mapping Approach for Stair Detection Towards Enhanced Prosthetic Foot Control. , 2018, , .		16
35	Optogenetic Peripheral Nerve Immunogenicity. Scientific Reports, 2018, 8, 14076.	1.6	48
36	Proprioception from a neurally controlled lower-extremity prosthesis. Science Translational Medicine, 2018, 10, .	5.8	145

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37	Spectrally distinct channelrhodopsins for two-colour optogenetic peripheral nerve stimulation. Nature Biomedical Engineering, 2018, 2, 485-496.	11.6	32
38	Development and Evaluation of a Powered Artificial Gastrocnemius for Transtibial Amputee Gait. Journal of Robotics, 2018, 2018, 1-15.	0.6	6
39	Biomechanic and Energetic Effects of a Quasi-Passive Artificial Gastrocnemius on Transtibial Amputee Gait. Journal of Robotics, 2018, 2018, 1-12.	0.6	5
40	MultiDIC: An Open-Source Toolbox for Multi-View 3D Digital Image Correlation. IEEE Access, 2018, 6, 30520-30535.	2.6	115
41	A murine model of a novel surgical architecture for proprioceptive muscle feedback and its potential application to control of advanced limb prostheses. Journal of Neural Engineering, 2017, 14, 036002.	1.8	40
42	Abstract P25: A Caprine Model of a Novel Amputation Paradigm for Bi-directional Neural Control of a Bionic Limb. Plastic and Reconstructive Surgery - Global Open, 2017, 5, 119-119.	0.3	1
43	Low-Cost Methodology for Skin Strain Measurement of a Flexed Biological Limb. IEEE Transactions on Biomedical Engineering, 2017, 64, 2750-2759.	2.5	11
44	FlexSEA: Flexible, Scalable Electronics Architecture for wearable robotic applications. , 2016, , .		16
45	FlexSEA-Execute: Advanced motion controller for wearable robotic applications. , 2016, , .		8
46	Multi-material 3-D viscoelastic model of a transtibial residuum from in-vivo indentation and MRI data. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 59, 379-392.	1.5	49
47	Biomechanical walking mechanisms underlying the metabolic reduction caused by an autonomous exoskeleton. Journal of NeuroEngineering and Rehabilitation, 2016, 13, 4.	2.4	161
48	Autonomous exoskeleton reduces metabolic cost of human walking. Journal of NeuroEngineering and Rehabilitation, 2014, 11, 151.	2.4	111
49	Clutchable series-elastic actuator: Implications for prosthetic knee design. International Journal of Robotics Research, 2014, 33, 1611-1625.	5.8	243
50	Autonomous exoskeleton reduces metabolic cost of human walking during load carriage. Journal of NeuroEngineering and Rehabilitation, 2014, 11, 80.	2.4	315
51	A Variable-Impedance Prosthetic Socket for a Transtibial Amputee Designed from Magnetic Resonance Imaging Data. Journal of Prosthetics and Orthotics, 2013, 25, 129-137.	0.2	108
52	Bionic ankle–foot prosthesis normalizes walking gait for persons with leg amputation. Proceedings of the Royal Society B: Biological Sciences, 2012, 279, 457-464.	1.2	341
53	Opening keynote luncheon: â€œThe impact of information technology on health care deliveryâ€•, 2011, , .		0
54	Control of a Powered Ankle–Foot Prosthesis Based on a Neuromuscular Model. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2010, 18, 164-173.	2.7	344

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55	Exploiting angular momentum to enhance bipedal center-of-mass control. , 2009, , .		39
56	Powered Ankle--Foot Prosthesis Improves Walking Metabolic Economy. IEEE Transactions on Robotics, 2009, 25, 51-66.	7.3	398
57	Powered ankle-foot prosthesis to assist level-ground and stair-descent gaits. Neural Networks, 2008, 21, 654-666.	3.3	414
58	Design of an agonist-antagonist active knee prosthesis. , 2008, , .		48
59	Design of a quasi-passive knee exoskeleton to assist running. , 2008, , .		90
60	Biomechanical Design of a Powered Ankle-Foot Prosthesis. , 2007, , .		98
61	Active Orthoses for the Lower-Limbs: Challenges and State of the Art. , 2007, , .		34
62	An autonomous, underactuated exoskeleton for load-carrying augmentation. , 2006, , .		102
63	The effect of series elasticity on actuator power and work output: Implications for robotic and prosthetic joint design. Robotics and Autonomous Systems, 2006, 54, 667-673.	3.0	97
64	Workloop Energetics of Antagonist Muscles. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0
65	A swimming robot actuated by living muscle tissue. Journal of NeuroEngineering and Rehabilitation, 2004, 1, 6.	2.4	92
66	A model of scale effects in mammalian quadrupedal running. Journal of Experimental Biology, 2002, 205, 959-967.	0.8	65
67	A model of scale effects in mammalian quadrupedal running. Journal of Experimental Biology, 2002, 205, 959-67.	0.8	40