Gregory S Sawicki

List of Publications by Year
in descending order

61 papers	5,086 citations	147801 31 h-index	138484 58 g-index
65 all docs	65 docs citations	65 times ranked	2998 citing authors

#	Article	IF	Citations
1	Emulator-Based Optimization of a Semi-Active Hip Exoskeleton Concept: Sweeping Impedance Across Walking Speeds. IEEE Transactions on Biomedical Engineering, 2023, 70, 271-282.	4.2	1
2	Reduced Achilles Tendon Stiffness Disrupts Calf Muscle Neuromechanics in Elderly Gait. Gerontology, 2022, 68, 241-251.	2.8	18
3	Onset timing of treadmill belt perturbations influences stability during walking. Journal of Biomechanics, 2022, 130, 110800.	2.1	21
4	Running birds reveal secrets for legged robot design. Science Robotics, 2022, 7, eabo2147.	17.6	4
5	Which lower limb joints compensate for destabilizing energy during walking in humans?. Journal of the Royal Society Interface, 2022, 19, .	3.4	3
6	Shorter muscle fascicle operating lengths increase the metabolic cost of cyclic force production. Journal of Applied Physiology, 2022, 133, 524-533.	2.5	14
7	Isolating the energetic and mechanical consequences of imposed reductions in ankle and knee flexion during gait. Journal of NeuroEngineering and Rehabilitation, 2021, 18, 21.	4.6	4
8	Series elasticity facilitates safe plantar flexor muscleâ€“tendon shock absorption during perturbed human hopping. Proceedings of the Royal Society B: Biological Sciences, 2021, 288, 20210201.	2.6	17
9	Neuromechanics and Energetics of Walking With an Ankle Exoskeleton Using Neuromuscular-Model Based Control: A Parameter Study. Frontiers in Bioengineering and Biotechnology, 2021, 9, 615358.	4.1	14
10	Extracting electricity with exosuit braking. Science, 2021, 372, 909-911.	12.6	9
11	Machine learning to extract muscle fascicle length changes from dynamic ultrasound images in real-time. PLoS ONE, 2021, 16, e0246611.	2.5	18
12	Adding carbon fiber to shoe soles may not improve running economy: a muscle-level explanation. Scientific Reports, 2020, 10, 17154.	3.3	23
13	Cyclically producing the same average muscle-tendon force with a smaller duty increases metabolic rate. Proceedings of the Royal Society B: Biological Sciences, 2020, 287, 20200431.	2.6	24
14	Mechanics of walking and running up and downhill: A joint-level perspective to guide design of lower-limb exoskeletons. PLoS ONE, 2020, 15, e0231996.	2.5	44
15	Impact of elastic ankle exoskeleton stiffness on neuromechanics and energetics of human walking across multiple speeds. Journal of NeuroEngineering and Rehabilitation, 2020, 17, 75.	4.6	28
16	The exoskeleton expansion: improving walking and running economy. Journal of NeuroEngineering and Rehabilitation, 2020, 17, 25.	4.6	243
17	Older Adults Overcome Reduced Triceps Surae Structural Stiffness to Preserve Ankle Joint Quasi-Stiffness During Walking. Journal of Applied Biomechanics, 2020, 36, 209-216.	0.8	3
18	Hurry Up and Get Out of the Way! Exploring the Limits of Muscle-Based Latch Systems for Power Amplification. Integrative and Comparative Biology, 2019, 59, 1546-1558.	2.0	16

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19	Humans falling in holes: adaptations in lower-limb joint mechanics in response to a rapid change in substrate height during human hopping. Journal of the Royal Society Interface, 2019, 16, 20190292.	3.4	19
20	Trailing limb angle is a surrogate for propulsive limb forces during walking post-stroke. Clinical Biomechanics, 2019, 67, 115-118.	1.2	21
21	Mechanics and energetics of post-stroke walking aided by a powered ankle exoskeleton with speed-adaptive myoelectric control. Journal of NeuroEngineering and Rehabilitation, 2019, 16, 57.	4.6	61
22	Development of a Novel Gait Analysis Tool Measuring Center of Pressure for Evaluation of Canine Chronic Thoracolumbar Spinal Cord Injury. Journal of Neurotrauma, 2019, 36, 3018-3025.	3.4	19
23	Exoskeletons Improve Locomotion Economy by Reducing Active Muscle Volume. Exercise and Sport Sciences Reviews, 2019, 47, 237-245.	3.0	44
24	A Soft-Exosuit Enables Multi-Scale Analysis of Wearable Robotics in a Bipedal Animal Model. , 2018, , .		4
25	A benchtop biorobotic platform for in vitro observation of muscle-tendon dynamics with parallel mechanical assistance from an elastic exoskeleton. Journal of Biomechanics, 2017, 57, 8-17.	2.1	7
26	Modeling age-related changes in muscle-tendon dynamics during cyclical contractions in the rat gastrocnemius. Journal of Applied Physiology, 2016, 121, 1004-1012.	2.5	13
27	Adding Stiffness to the Foot Modulates Soleus Force-Velocity Behaviour during Human Walking. Scientific Reports, 2016, 6, 29870.	3.3	71
28	A Simple Model to Estimate Plantarflexor Muscleâ€“Tendon Mechanics and Energetics During Walking With Elastic Ankle Exoskeletons. IEEE Transactions on Biomedical Engineering, 2016, 63, 914-923.	4.2	61
29	A Cyber Expert System for Auto-Tuning Powered Prosthesis Impedance Control Parameters. Annals of Biomedical Engineering, 2016, 44, 1613-1624.	2.5	75
30	Individual limb mechanical analysis of gait following stroke. Journal of Biomechanics, 2015, 48, 984-989.	2.1	49
31	Factors Influencing Ball-Player Impact Probability in Youth Baseball. Sports Health, 2015, 7, 154-160.	2.7	1
32	Revisiting the mechanics and energetics of walking in individuals with chronic hemiparesis following stroke: from individual limbs to lower limb joints. Journal of NeuroEngineering and Rehabilitation, 2015, 12, 24.	4.6	74
33	A neuromechanics-based powered ankle exoskeleton to assist walking post-stroke: a feasibility study. Journal of NeuroEngineering and Rehabilitation, 2015, 12, 23.	4.6	111
34	Six degree-of-freedom analysis of hip, knee, ankle and foot provides updated understanding of biomechanical work during human walking. Journal of Experimental Biology, 2015, 218, 876-886.	1.7	114
35	Reducing the energy cost of human walking using an unpowered exoskeleton. Nature, 2015, 522, 212-215.	27.8	732
36	Unconstrained muscle-tendon workloops indicate resonance tuning as a mechanism for elastic limb behavior during terrestrial locomotion. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E5891-8.	7.1	30

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37	Timing matters: tuning the mechanics of a muscle-tendon unit by adjusting stimulation phase during cyclic contractions. Journal of Experimental Biology, 2015, 218, 3150-9.	1.7	32
38	Power amplification in an isolated muscle-tendon is load dependent. Journal of Experimental Biology, 2015, 218, 3700-9.	1.7	31
39	More is not always better: modeling the effects of elastic exoskeleton compliance on underlying ankle muscleâ€"tendon dynamics. Bioinspiration and Biomimetics, 2014, 9, 046018.	2.9	26
40	Musculoskeletal modelling deconstructs the paradoxical effects of elastic ankle exoskeletons on plantar-flexor mechanics & energetics during hopping. Journal of Experimental Biology, 2014, 217, 4018-28.	1.7	51
41	Exploiting elasticity: Modeling the influence of neural control on mechanics and energetics of ankle muscleâ€"tendons during human hopping. Journal of Theoretical Biology, 2014, 353, 121-132.	1.7	24
42	Elastic ankle exoskeletons reduce soleus muscle force but not work in human hopping. Journal of Applied Physiology, 2013, 115, 579-585.	2.5	84
43	Estimation of Quasi-Stiffness of the Human Hip in the Stance Phase of Walking. PLoS ONE, 2013, 8, e81841.	2.5	69
44	Estimation of Quasi-Stiffness and Propulsive Work of the Human Ankle in the Stance Phase of Walking. PLoS ONE, 2013, 8, e59935.	2.5	120
45	Estimation of Quasi-Stiffness of the Human Knee in the Stance Phase of Walking. PLoS ONE, 2013, 8, e59993.	2.5	82
46	Human medial gastrocnemius forceâ€"velocity behavior shifts with locomotion speed and gait. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 977-982.	7.1	191
47	The mechanics and energetics of human walking and running: a joint level perspective. Journal of the Royal Society Interface, 2012, 9, 110-118.	3.4	369
48	Linking the mechanics and energetics of hopping with elastic ankle exoskeletons. Journal of Applied Physiology, 2012, 113, 1862-1872.	2.5	77
49	The influence of a unilateral fixed ankle on metabolic and mechanical demands during walking in unimpaired young adults. Journal of Biomechanics, 2012, 45, 2405-2410.	2.1	27
50	An exoskeleton using controlled energy storage and release to aid ankle propulsion. , 2011, 2011, 5975342.		78
51	It Pays to Have a Spring in Your Step. Exercise and Sport Sciences Reviews, 2009, 37, 130-138.	3.0	184
52	Mechanics and energetics of incline walking with robotic ankle exoskeletons. Journal of Experimental Biology, 2009, 212, 32-41.	1.7	70
53	Powered ankle exoskeletons reveal the metabolic cost of plantar flexor mechanical work during walking with longer steps at constant step frequency. Journal of Experimental Biology, 2009, 212, 21-31.	1.7	145
54	A pneumatically powered knee-ankle-foot orthosis (KAFO) with myoelectric activation and inhibition. Journal of NeuroEngineering and Rehabilitation, 2009, 6, 23.	4.6	191

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55	Mechanics and energetics of level walking with powered ankle exoskeletons. Journal of Experimental Biology, 2008, 211, 1402-1413.	1.7	232
56	A PHYSIOLOGIST'S PERSPECTIVE ON ROBOTIC EXOSKELETONS FOR HUMAN LOCOMOTION. International Journal of Humanoid Robotics, 2007, 04, 507-528.	1.1	149
57	An improved powered ankleâ€“foot orthosis using proportional myoelectric control. Gait and Posture, 2006, 23, 425-428.	1.4	329
58	The effects of powered ankle-foot orthoses on joint kinematics and muscle activation during walking in individuals with incomplete spinal cord injury. Journal of NeuroEngineering and Rehabilitation, 2006, 3, 3.	4.6	62
59	Mechanical performance of artificial pneumatic muscles to power an ankleâ€“foot orthosis. Journal of Biomechanics, 2006, 39, 1832-1841.	2.1	188
60	Powered Lower Limb Orthoses for Gait Rehabilitation. Topics in Spinal Cord Injury Rehabilitation, 2005, 11, 34-49.	1.8	170
61	How to hit home runs: Optimum baseball bat swing parameters for maximum range trajectories. American Journal of Physics, 2003, 71, 1152-1162.	0.7	90