Boris I Prilutsky

List of Publications by Year
in descending order

#	Article	IF	Citations
1	Tendon action of two-joint muscles: Transfer of mechanical energy between joints during jumping, landing, and running. Journal of Biomechanics, 1994, 27, 25-34.	0.9	209
2	Optimization-Based Models of Muscle Coordination. Exercise and Sport Sciences Reviews, 2002, 30, 32-38.	1.6	188
3	Swing- and support-related muscle actions differentially trigger human walkâ€“run and runâ€“walk transitions. Journal of Experimental Biology, 2001, 204, 2277-2287.	0.8	137
4	Gains in Upper Extremity Function After Stroke via Recovery or Compensation: Potential Differential Effects on Amount of Real-World Limb Use. Topics in Stroke Rehabilitation, 2009, 16, 237-253.	1.0	135
5	Sensitivity of predicted muscle forces to parameters of the optimization-based human leg model revealed by analytical and numerical analyses. Journal of Biomechanics, 2001, 34, 1243-1255.	0.9	124
6	Mechanics of Slope Walking in the Cat: Quantification of Muscle Load, Length Change, and Ankle Extensor EMG Patterns. Journal of Neurophysiology, 2006, 95, 1397-1409.	0.9	102
7	Afferent control of locomotor CPG: insights from a simple neuromechanical model. Annals of the New York Academy of Sciences, 2010, 1198, 21-34.	1.8	93
8	Analysis of muscle coordination strategies in cycling. IEEE Transactions on Rehabilitation Engineering: A Publication of the IEEE Engineering in Medicine and Biology Society, 2000, 8, 362-370.	1.4	77
9	Coordination of two-joint rectus femoris and hamstrings during the swing phase of human walking and running. Experimental Brain Research, 1998, 120, 479-486.	0.7	71
10	The effects of self-reinnervation of cat medial and lateral gastrocnemius muscles on hindlimb kinematics in slope walking. Experimental Brain Research, 2007, 181, 377-393.	0.7	65
11	Quantification of Motor Cortex Activity and Full-Body Biomechanics During Unconstrained Locomotion. Journal of Neurophysiology, 2005, 94, 2959-2969.	0.9	64
12	Motoneuronal and muscle synergies involved in cat hindlimb control during fictive and real locomotion: a comparison study. Journal of Neurophysiology, 2012, 107, 2057-2071.	0.9	63
13	Comparison of mechanical energy expenditure of joint moments and muscle forces during human locomotion. Journal of Biomechanics, 1996, 29, 405-415.	0.9	60
14	Differences in Movement Mechanics, Electromyographic, and Motor Cortex Activity Between Accurate and Nonaccurate Stepping. Journal of Neurophysiology, 2010, 103, 2285-2300.	0.9	60
15	A numerical procedure for inferring from experimental data the optimization cost functions using a multibody model of the neuro-musculoskeletal system. Multibody System Dynamics, 2006, 16, 123-154.	1.7	54
16	Muscle Coordination: The Discussion Continues. Motor Control, 2000, 4, 97-116.	0.3	52
17	Transfer of mechanical energy between ankle and knee joints by gastrocnemius and plantaris muscles during cat locomotion. Journal of Biomechanics, 1996, 29, 391-403.	0.9	45
18	Forces of individual cat ankle extensor muscles during locomotion predicted using static optimization. Journal of Biomechanics, 1997, 30, 1025-1033.	0.9	43

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19	Is coordination of two-joint leg muscles during load lifting consistent with the strategy of minimum fatigue?. Journal of Biomechanics, 1998, 31, 1025-1034.	0.9	42
20	A dynamical systems analysis of afferent control in a neuromechanical model of locomotion: I. Rhythm generation. Journal of Neural Engineering, 2011, 8, 065003.	1.8	41
21	Distinct muscle fascicle length changes in feline medial gastrocnemius and soleus muscles during slope walking. Journal of Applied Physiology, 2009, 106, 1169-1180.	1.2	38
22	Body stability and muscle and motor cortex activity during walking with wide stance. Journal of Neurophysiology, 2014, 112, 504-524.	0.9	38
23	Short-Term Motor Compensations to Denervation of Feline Soleus and Lateral Gastrocnemius Result in Preservation of Ankle Mechanical Output during Locomotion. Cells Tissues Organs, 2011, 193, 310-324.	1.3	36
24	A Neuromechanical Model of Spinal Control of Locomotion. Springer Series in Computational Neuroscience, 2016, , 21-65.	0.3	35
25	Effects of pore size, implantation time, and nanoâ€surface properties on rat skin ingrowth into percutaneous porous titanium implants. Journal of Biomedical Materials Research - Part A, 2014, 102, 1305-1315.	2.1	34
26	Control of Mammalian Locomotion by Somatosensory Feedback. , 2021, 12, 2877-2947.		32
27	Role of the muscle belly and tendon of soleus, gastrocnemius, and plantaris in mechanical energy absorption and generation during cat locomotion. Journal of Biomechanics, 1996, 29, 417-434.	0.9	31
28	Strategy of Coordination of Two- and One-Joint Leg Muscles in Controlling an External Force. Motor Control, 1997, 1, 92-116.	0.3	31
29	A dynamical systems analysis of afferent control in a neuromechanical model of locomotion: II. Phase asymmetry. Journal of Neural Engineering, 2011, 8, 065004.	1.8	31
30	Force-sharing between cat soleus and gastrocnemius muscles during walking: Explanations based on electrical activity, properties, and kinematics. Journal of Biomechanics, 1994, 27, 1223-1235.	0.9	30
31	Locomotor changes in length and EMG activity of feline medial gastrocnemius muscle following paralysis of two synergists. Experimental Brain Research, 2010, 203, 681-692.	0.7	29
32	Comments on Point:Counterpoint: Afferent feedback from fatigued locomotor muscles is/is not an important determinant of endurance exercise performance. Journal of Applied Physiology, 2010, 108, 458-468.	1.2	26
33	Does ankle joint power reflect type of muscle action of soleus and gastrocnemius during walking in cats and humans?. Journal of Biomechanics, 2013, 46, 1383-1386.	0.9	26
34	Stance and swing phase detection during level and slope walking in the cat: Effects of slope, injury, subject and kinematic detection method. Journal of Biomechanics, 2012, 45, 1529-1533.	0.9	23
35	The Spinal Control of Backward Locomotion. Journal of Neuroscience, 2021, 41, 630-647.	1.7	22
36	Stabilization of cat paw trajectory during locomotion. Journal of Neurophysiology, 2014, 112, 1376-1391.	0.9	21

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37	An animal model to evaluate skinâ€“implantâ€“bone integration and gait with a prosthesis directly attached to the residual limb. Clinical Biomechanics, 2014, 29, 336-349.	0.5	20
38	Accurate stepping on a narrow path: mechanics, EMG, and motor cortex activity in the cat. Journal of Neurophysiology, 2015, 114, 2682-2702.	0.9	20
39	Self-reinnervated muscles lose autogenic length feedback, but intermuscular feedback can recover functional connectivity. Journal of Neurophysiology, 2016, 116, 1055-1067.	0.9	19
40	Mathematical modeling and mechanical and histopathological testing of porous prosthetic pylon for direct skeletal attachment. Journal of Rehabilitation Research and Development, 2009, 46, 315.	1.6	19
41	Electrical stimulation of the sural cutaneous afferent nerve controls the amplitude and onset of the swing phase of locomotion in the spinal cat. Journal of Neurophysiology, 2011, 105, 2297-2308.	0.9	18
42	Hindlimb Kinetics and Neural Control during Slope Walking in the Cat: Unexpected Findings. Journal of Applied Biomechanics, 2001, 17, 277-286.	0.3	17
43	Motor adaptation to prosthetic cycling in people with trans-tibial amputation. Journal of Biomechanics, 2014, 47, 2306-2313.	0.9	16
44	Control of transitions between locomotor-like and paw shake-like rhythms in a model of a multistable central pattern generator. Journal of Neurophysiology, 2018, 120, 1074-1089.	0.9	16
45	Cutaneous sensory feedback from paw pads affects lateral balance control during split-belt locomotion in the cat. Journal of Experimental Biology, 2019, 222, .	0.8	14
46	Kinetics of individual limbs during level and slope walking with a unilateral transtibial bone-anchored prosthesis in the cat. Journal of Biomechanics, 2018, 76, 74-83.	0.9	12
47	Task dependent activity of motor unit populations in feline ankle extensor muscles. Journal of Experimental Biology, 2012, 215, 3711-22.	0.8	11
48	A real-time closed-loop control system for modulating gait characteristics via electrical stimulation of peripheral nerves. , 2016, , .		11
49	Increased intensity and reduced frequency of EMG signals from feline self-reinnervated ankle extensors during walking do not normalize excessive lengthening. Journal of Neurophysiology, 2016, 115, 2406-2420.	0.9	11
50	Task-dependent inhibition of slow-twitch soleus and excitation of fast-twitch gastrocnemius do not require high movement speed and velocity-dependent sensory feedback. Frontiers in Physiology, 2014, 5, 410.	1.3	10
51	Time course of functional recovery during the first 3 mo after surgical transection and repair of nerves to the feline soleus and lateral gastrocnemius muscles. Journal of Neurophysiology, 2018, 119, 1166-1185.	0.9	9
52	Common and distinct muscle synergies during level and slope locomotion in the cat. Journal of Neurophysiology, 2021, 126, 493-515.	0.9	9
53	Modeling the Organization of Spinal Cord Neural Circuits Controlling Two-Joint Muscles. Springer Series in Computational Neuroscience, 2016, , 121-162.	0.3	8
54	Computing Motion Dependent Afferent Activity During Cat Locomotion Using a Forward Dynamics Musculoskeletal Model. Springer Series in Computational Neuroscience, 2016, , 273-307.	0.3	7

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55	Control of Cat Walking and Paw-Shake by a Multifunctional Central Pattern Generator. Springer Series in Computational Neuroscience, 2016, , 333-359.	0.3	7
56	A Prototype of a Neural, Powered, Transtibial Prosthesis for the Cat: Benchtop Characterization. Frontiers in Neuroscience, 2018, 12, 471.	1.4	7
57	Adaptation to slope in locomotor-trained spinal cats with intact and self-reinnervated lateral gastrocnemius and soleus muscles. Journal of Neurophysiology, 2020, 123, 70-89.	0.9	7
58	State- and Condition-Dependent Modulation of the Hindlimb Locomotor Pattern in Intact and Spinal Cats Across Speeds. Frontiers in Systems Neuroscience, 2022, 16, 814028.	1.2	7
59	Control of Forelimb and Hindlimb Movements and Their Coordination during Quadrupedal Locomotion across Speeds in Adult Spinal Cats. Journal of Neurotrauma, 2022, 39, 1113-1131.	1.7	7
60	Frontal plane dynamics of the centre of mass during quadrupedal locomotion on a split-belt treadmill. Journal of the Royal Society Interface, 2020, 17, 20200547.	1.5	6
61	Motor Control and Motor Redundancy in the Upper Extremity: Implications for Neurorehabilitation. Topics in Spinal Cord Injury Rehabilitation, 2011, 17, 7-15.	0.8	6
62	Transfer of learning between the arms during bimanual reaching. , 2012, 2012, 6785-8.		5
63	Effects of bilateral swing-away grab bars on the biomechanics of stand-to-sit and sit-to-stand toilet transfers. Disability and Rehabilitation: Assistive Technology, 2019, 14, 292-300.	1.3	5
64	Recent Progress in Animal Studies of the Skin- and Bone-integrated Pylon With Deep Porosity for Bone-Anchored Limb Prosthetics With and Without Neural Interface. Military Medicine, 2021, 186, 688-695.	0.4	4
65	Design and Preliminary Evaluation of a Tongue-Operated Exoskeleton System for Upper Limb Rehabilitation. International Journal of Environmental Research and Public Health, 2021, 18, 8708.	1.2	4
66	Unexpected Fascicle Length Changes In Denervated Feline Soleus Muscle During Stance Phase Of Walking. Scientific Reports, 2015, 5, 17619.	1.6	3
67	How to distinguish between referent configuration and internal models hypotheses of motor control?. Physics of Life Reviews, 2021, 37, 1-2.	1.5	2
68	Authorsâ€™ response | Journal of Biomechanics - Volume 35, Issue 10. Journal of Biomechanics, 2002, 35, 1437-1438.	0.9	1
69	A Method for Inferring the Optimization Cost Function of Experimentally Observed Motor Strategies. , 2005, , 367.		1
70	The effect of the direction of force-fields on transfer of learning between the arms during bimanual reaching. , 2013, 2013, 6889-92.		1
71	Multifunctional central pattern generator controlling walking and paw shaking. BMC Neuroscience, 2014, 15, P181.	0.8	1
72	Asymmetric and transient properties of reciprocal activity of antagonists during the paw-shake response in the cat. PLoS Computational Biology, 2021, 17, e1009677.	1.5	1

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73	Comments on â€˜relationship between ankle muscle and joint kinetics during the stance phase of locomotion in the catâ€™. Journal of Biomechanics, 1995, 28, 643-644.	0.9	0
74	The effect of force feedback on transfer of learning between the arms during bimanual reaching. , 2013, 2013, 6885-8.		0
75	Control of Locomotion. , 2010, , 197-218.		0
76	Modeling the CPGâ€based Control of Cat Hindlimb Movement During Locomotion. FASEB Journal, 2011, 25, 1046.1.	0.2	0
77	Emergence of Extreme Paw Accelerations During Cat Paw Shaking: Interactions of Spinal Central Pattern Generator, Hindlimb Mechanics and Muscle Length-Depended Feedback. Frontiers in Integrative Neuroscience, 2022, 16, 810139.	1.0	0