Eric J Perreault

List of Publications by Year
in descending order

125 papers	4,351 citations	126858 33 h-index	123376 61 g-index
139 all docs	139 docs citations	139 times ranked	3175 citing authors

#	Article	IF	Citations
1	Alterations in upper limb muscle synergy structure in chronic stroke survivors. Journal of Neurophysiology, 2013, 109, 768-781.	0.9	249
2	Estimation of Human Ankle Impedance During the Stance Phase of Walking. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2014, 22, 870-878.	2.7	223
3	The number and choice of muscles impact the results of muscle synergy analyses. Frontiers in Computational Neuroscience, 2013, 7, 105.	1.2	188
4	Consensus for experimental design in electromyography (CEDE) project: Amplitude normalization matrix. Journal of Electromyography and Kinesiology, 2020, 53, 102438.	0.7	170
5	Effects of voluntary force generation on the elastic components of endpoint stiffness. Experimental Brain Research, 2001, 141, 312-323.	0.7	135
6	Toward the Restoration of Hand Use to a Paralyzed Monkey: Brain-Controlled Functional Electrical Stimulation of Forearm Muscles. PLoS ONE, 2009, 4, e5924.	1.1	123
7	Multijoint dynamics and postural stability of the human arm. Experimental Brain Research, 2004, 157, 507-17.	0.7	122
8	Multiple-input, multiple-output system identification for characterization of limb stiffness dynamics. Biological Cybernetics, 1999, 80, 327-337.	0.6	113
9	The Differential Role of Motor Cortex in Stretch Reflex Modulation Induced by Changes in Environmental Mechanics and Verbal Instruction. Journal of Neuroscience, 2009, 29, 13255-13263.	1.7	110
10	Model-Based Estimation of Knee Stiffness. IEEE Transactions on Biomedical Engineering, 2012, 59, 2604-2612.	2.5	108
11	Voluntary Control of Static Endpoint Stiffness During Force Regulation Tasks. Journal of Neurophysiology, 2002, 87, 2808-2816.	0.9	106
12	Evidence for reticulospinal contributions to coordinated finger movements in humans. Journal of Neurophysiology, 2013, 110, 1476-1483.	0.9	106
13	Prediction of upper limb muscle activity from motor cortical discharge during reaching. Journal of Neural Engineering, 2007, 4, 369-379.	1.8	102
14	Interactions With Compliant Loads Alter Stretch Reflex Gains But Not Intermuscular Coordination. Journal of Neurophysiology, 2008, 99, 2101-2113.	0.9	102
15	Stretch sensitive reflexes as an adaptive mechanism for maintaining limb stability. Clinical Neurophysiology, 2010, 121, 1680-1689.	0.7	99
16	Consensus for experimental design in electromyography (CEDE) project: Electrode selection matrix. Journal of Electromyography and Kinesiology, 2019, 48, 128-144.	0.7	95
17	Modeling short-range stiffness of feline lower hindlimb muscles. Journal of Biomechanics, 2008, 41, 1945-1952.	0.9	92
18	Online adaptive neural control of a robotic lower limb prosthesis. Journal of Neural Engineering, 2018, 15, 016015.	1.8	92

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19	Hill muscle model errors during movement are greatest within the physiologically relevant range of motor unit firing rates. Journal of Biomechanics, 2003, 36, 211-218.	0.9	91
20	Interactions Between Limb and Environmental Mechanics Influence Stretch Reflex Sensitivity in the Human Arm. Journal of Neurophysiology, 2010, 103, 429-440.	0.9	87
21	Muscle short-range stiffness can be used to estimate the endpoint stiffness of the human arm. Journal of Neurophysiology, 2011, 105, 1633-1641.	0.9	85
22	Detection of and Compensation for EMG Disturbances for Powered Lower Limb Prosthesis Control. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2016, 24, 226-234.	2.7	80
23	Use of Self-Selected Postures to Regulate Multi-Joint Stiffness During Unconstrained Tasks. PLoS ONE, 2009, 4, e5411.	1.1	75
24	Consequences of biomechanically constrained tasks in the design and interpretation of synergy analyses. Journal of Neurophysiology, 2015, 113, 2102-2113.	0.9	75
25	Contributions of Altered Stretch Reflex Coordination to Arm Impairments Following Stroke. Journal of Neurophysiology, 2010, 104, 3612-3624.	0.9	63
26	The influence of perturbation duration and velocity on the long-latency response to stretch in the biceps muscle. Experimental Brain Research, 2005, 163, 361-369.	0.7	61
27	Identification of Multiple-Input Systems with Highly Coupled Inputs: Application to EMG Prediction from Multiple Intracortical Electrodes. Neural Computation, 2006, 18, 329-355.	1.3	60
28	Shear wave velocity is sensitive to changes in muscle stiffness that occur independently from changes in force. Journal of Applied Physiology, 2020, 128, 8-16.	1.2	49
29	Startling acoustic stimuli can evoke fast hand extension movements in stroke survivors. Clinical Neurophysiology, 2015, 126, 160-164.	0.7	48
30	Contributions of feed-forward and feedback strategies at the human ankle during control of unstable loads. Experimental Brain Research, 2012, 217, 53-66.	0.7	45
31	Development of a Mechatronic Platform and Validation of Methods for Estimating Ankle Stiffness During the Stance Phase of Walking. Journal of Biomechanical Engineering, 2013, 135, 81009.	0.6	45
32	Grand Challenges in Interfacing Engineering With Life Sciences and Medicine. IEEE Transactions on Biomedical Engineering, 2013, 60, 589-598.	2.5	42
33	Instruction-dependent modulation of the long-latency stretch reflex is associated with indicators of startle. Experimental Brain Research, 2013, 230, 59-69.	0.7	41
34	Comparison of electromyography and force as interfaces for prosthetic control. Journal of Rehabilitation Research and Development, 2011, 48, 629.	1.6	39
35	A muscle-activity-dependent gain between motor cortex and EMG. Journal of Neurophysiology, 2019, 121, 61-73.	0.9	37
36	Learning impedance controller parameters for lower-limb prostheses. , 2013, , .		36

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37	System Identification of Physiological Systems Using Short Data Segments. IEEE Transactions on Biomedical Engineering, 2012, 59, 3541-3549.	2.5	35
38	Corticomotor excitability of arm muscles modulates according to static position and orientation of the upper limb. Clinical Neurophysiology, 2014, 125, 2046-2054.	0.7	32
39	Multi-Muscle FES Force Control of the Human Arm for Arbitrary Goals. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2014, 22, 654-663.	2.7	32
40	Estimating the dimensionality of the manifold underlying multi-electrode neural recordings. PLoS Computational Biology, 2021, 17, e1008591.	1.5	32
41	Summation of Forces From Multiple Motor Units in the Cat Soleus Muscle. Journal of Neurophysiology, 2003, 89, 738-744.	0.9	31
42	Real-Time Evaluation of a Noninvasive Neuroprosthetic Interface for Control of Reach. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2013, 21, 674-683.	2.7	29
43	Consensus for experimental design in electromyography (CEDE) project: Terminology matrix. Journal of Electromyography and Kinesiology, 2021, 59, 102565.	0.7	29
44	Estimation of human ankle impedance during walking using the perturberator robot. , 2012, , .		28
45	Motor Cortical Measures of Use-Dependent Plasticity Are Graded From Distal to Proximal in the Human Upper Limb. Journal of Neurophysiology, 2007, 98, 3230-3241.	0.9	27
46	Motor unit composition has little effect on the short-range stiffness of feline medial gastrocnemius muscle. Journal of Applied Physiology, 2007, 103, 796-802.	1.2	27
47	Bilateral impairments in task-dependent modulation of the long-latency stretch reflex following stroke. Clinical Neurophysiology, 2013, 124, 1373-1380.	0.7	27
48	Influence of environmental stability on the regulation of end-point impedance during the maintenance of arm posture. Journal of Neurophysiology, 2013, 109, 1045-1054.	0.9	27
49	Acceleration dependence and task-specific modulation of short- and medium-latency reflexes in the ankle extensors. Physiological Reports, 2013, 1, e00051.	0.7	26
50	Mechanisms contributing to reduced knee stiffness during movement. Experimental Brain Research, 2017, 235, 2959-2970.	0.7	26
51	Educational Methods and Best Practices in BME Laboratories1. Annals of Biomedical Engineering, 2006, 34, 209-216.	1.3	25
52	Biomechanical constraints on the feedforward regulation of endpoint stiffness. Journal of Neurophysiology, 2012, 108, 2083-2091.	0.9	24
53	Closed-Loop Identification: Application to the Estimation of Limb Impedance in a Compliant Environment. IEEE Transactions on Biomedical Engineering, 2011, 58, 521-530.	2.5	22
54	Decoding with limited neural data: a mixture of time-warped trajectory models for directional reaches. Journal of Neural Engineering, 2012, 9, 036002.	1.8	22

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55	Startle evoked movement is delayed in older adults: implications for brainstem processing in the elderly. Physiological Reports, 2014, 2, e12025.	0.7	21
56	Deficits in startle-evoked arm movements increase with impairment following stroke. Clinical Neurophysiology, 2014, 125, 1682-1688.	0.7	21
57	Brain-state classification and a dual-state decoder dramatically improve the control of cursor movement through a brain-machine interface. Journal of Neural Engineering, 2016, 13, 016009.	1.8	21
58	Efficiency of skeletal muscle decellularization methods and their effects on the extracellular matrix. Journal of Biomechanics, 2020, 110, 109961.	0.9	21
59	Arm dominance affects feedforward strategy more than feedback sensitivity during a postural task. Experimental Brain Research, 2015, 233, 2001-2011.	0.7	20
60	Semiparametric Identification of Human Arm Dynamics for Flexible Control of a Functional Electrical Stimulation Neuroprosthesis. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2016, 24, 1405-1415.	2.7	19
61	Changes in shear wave propagation within skeletal muscle during active and passive force generation. Journal of Biomechanics, 2019, 94, 115-122.	0.9	19
62	Evidence for startle as a measurable behavioral indicator of motor learning. PLoS ONE, 2018, 13, e0195689.	1.1	18
63	Considering Limb Impedance in the Design and Control of Prosthetic Devices. Trends in Augmentation of Human Performance, 2014, , 59-83.	0.4	17
64	Task-relevant adaptation of musculoskeletal impedance during posture and movement. , 2014, , .		15
65	A review of movement disorders in chemotherapy-induced neurotoxicity. Journal of NeuroEngineering and Rehabilitation, 2021, 18, 16.	2.4	14
66	Gait Characteristics When Walking on Different Slippery Walkways. IEEE Transactions on Biomedical Engineering, 2016, 63, 228-239.	2.5	13
67	Quantifying the Multidimensional Impedance of the Shoulder During Volitional Contractions. Annals of Biomedical Engineering, 2020, 48, 2354-2369.	1.3	12
68	Prediction of Muscle Activity from Cortical Signals to Restore Hand Grasp in Subjects with Spinal Cord Injury. , 2010, , 369-406.		10
69	Leveraging Joint Mechanics Simplifies the Neural Control of Movement. Frontiers in Integrative Neuroscience, 2022, 16, 802608.	1.0	10
70	Real-Time Control of the Hand by Intracortically Controlled Functional Neuromuscular Stimulation. , 2007, , .		9
71	Estimates of Acausal Joint Impedance Models. IEEE Transactions on Biomedical Engineering, 2012, 59, 2913-2921.	2.5	9
72	A strategy for labeling data for the neural adaptation of a powered lower limb prosthesis. , 2014, 2014, 3090-3.		9

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73	Experimentally quantifying the feasible torque space of the human shoulder. Journal of Electromyography and Kinesiology, 2022, 62, 102313.	0.7	9
74	Voluntary activation of biceps-to-triceps and deltoid-to-triceps transfers in quadriplegia. PLoS ONE, 2017, 12, e0171141.	1.1	9
75	Multimodal decoding and congruent sensory information enhance reaching performance in subjects with cervical spinal cord injury. Frontiers in Neuroscience, 2014, 8, 123.	1.4	8
76	Preliminary results for an adaptive pattern recognition system for novel users using a powered lower limb prosthesis. , 2016, 2016, 5083-5086.		8
77	Stabilizing stretch reflexes are modulated independently from the rapid release of perturbation-triggered motor plans. Scientific Reports, 2019, 9, 13926.	1.6	8
78	Optimal sampling of recruitment curves for functional electrical stimulation control. , 2012, 2012, 329-32.		7
79	Withdrawal reflexes in the upper limb adapt to arm posture and stimulus location. Muscle and Nerve, 2014, 49, 716-723.	1.0	7
80	System identification for 3D force control of a human arm neuroprosthesis using functional electrical stimulation. , 2012, , .		5
81	System Identification of Multidimensional Shoulder Impedance During Volitional Contractions. IFAC-PapersOnLine, 2015, 48, 1369-1374.	0.5	5
82	Evaluation of a semi-parametric model for high-dimensional FES control. , 2015, , .		5
83	Using Feedback Control to Reduce Limb Impedance during Forceful Contractions. Scientific Reports, 2017, 7, 9317.	1.6	5
84	Altered Neural Control Reduces Shear Forces and Ankle Impedance on a Slippery Surface. IEEE Transactions on Biomedical Engineering, 2019, 66, 2381-2389.	2.5	5
85	Muscle Contraction Has a Reduced Effect on Increasing Glenohumeral Stability in the Apprehension Position. Medicine and Science in Sports and Exercise, 2021, 53, 2354-2362.	0.2	5
86	A Framework for Dyadic Physical Interaction Studies During Ankle Motor Tasks. IEEE Robotics and Automation Letters, 2021, 6, 6876-6883.	3.3	5
87	Mechanical perturbations applied during impending movement evoke startle-like responses. , 2009, 2009, 2947-50.		4
88	Dealing with noisy gaze information for a target-dependent neural decoder. , 2011, 2011, 5428-31.		4
89	Modeling open-loop stability of a human arm driven by a functional electrical stimulation neuroprosthesis. , 2013, 2013, 3598-601.		4
90	Stretch Reflexes in Shoulder Muscles Are Described Best by Heteronymous Pathways. Biosystems and Biorobotics, 2017, , 141-145.	0.2	4

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91	Uncertainty in when a perturbation will arrive influences the preparation and release of triggered responses. Experimental Brain Research, 2019, 237, 2353-2365.	0.7	4
92	Regulation of Multijoint Stretch Reflexes During Interactions with Stiff and Compliant Environments. , 2006, 2006, 300-2.		3
93	Use of Intracortical Recordings to Control a Hand Neuroprosthesis. , 2007, , .		3
94	Continuous movement decoding using a target-dependent model with EMG inputs. , 2011, 2011, 5432-5.		3
95	EMG control of robotic reaching by people with tetraplegia improved through proprioceptive and force feedback. , 2013, , .		3
96	Dealing with Target Uncertainty in a Reaching Control Interface. PLoS ONE, 2014, 9, e86811.	1.1	3
97	The dynamic effect of muscle activation on knee stiffness. , 2014, 2014, 1599-602.		3
98	Multi-muscle FES control of the human arm for interaction tasks—Stabilizing with muscle co-contraction and postural adjustment: A simulation study. , 2014, , .		3
99	Identifying inverse human arm dynamics using a robotic testbed. , 2014, , .		3
100	Frontal plane ankle stiffness increases with weight-bearing. Journal of Biomechanics, 2021, 124, 110565.	0.9	3
101	Interprofessional Inconsistencies in the Diagnosis of Shoulder Instability: Survey Results of Physicians and Rehabilitation Providers. International Journal of Sports Physical Therapy, 2021, 16, 1115-1125.	0.5	3
102	Efficient estimation of time-varying intrinsic and reflex stiffness. , 2011, 2011, 4124-7.		2
103	Interpretation of non-parametric estimates of time-varying systems. , 2012, , .		2
104	Time-Varying System Identification for Understanding the Control of Human Knee Impedance. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 1306-1310.	0.4	2
105	Posture-dependent changes in corticomotor excitability of the biceps after spinal cord injury and tendon transfer. , 2014, 2014, 4302-5.		2
106	Lower-limb muscle activity when walking on different slippery surfaces. , 2015, , .		2
107	The coordinate system for force control. Experimental Brain Research, 2015, 233, 899-908.	0.7	2
108	Posture-Dependent Corticomotor Excitability Differs Between the Transferred Biceps in Individuals With Tetraplegia and the Biceps of Nonimpaired Individuals. Neurorehabilitation and Neural Repair, 2017, 31, 354-363.	1.4	2

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109	Simultaneous in vivo Estimation of Muscle, Tendon, and Ankle Impedance. , 2020, 2020, 4819-4822.		2
110	Cancer survivors post-chemotherapy exhibit unique proprioceptive deficits in proximal limbs. Journal of NeuroEngineering and Rehabilitation, 2022, 19, 32.	2.4	2
111	Influence of task complexity on movement planning and release after stroke: insights from startReact. Experimental Brain Research, 2022, 240, 1765-1774.	0.7	2
112	No Strength Differences Despite Greater Posterior Rotator Cuff Intramuscular Fat in Patients With Eccentric Glenohumeral Osteoarthritis. Clinical Orthopaedics and Related Research, 2022, 480, 2217-2228.	0.7	2
113	Feedback compensation of intrinsic muscle properties during torque regulation tasks. , 2013, 2013, 5646-9.		1
114	Announcing the Fourth Biomedical Engineering Education Summit Meeting. Cellular and Molecular Bioengineering, 2019, 12, 135-138.	1.0	1
115	Contributions of joint mechanics and neural control to the generation of torque during movement. , 2020, 2020, 3807-3810.		1
116	Quantitative assessment of proprioceptive dysfunction in cancer survivors post oxaliplatin-containing chemotherapy.. Journal of Clinical Oncology, 2020, 38, e24071-e24071.	0.8	1
117	Translations of the Humeral Head Elicit Reflexes in Rotator Cuff Muscles That Are Larger Than Those in the Primary Shoulder Movers. Frontiers in Integrative Neuroscience, 2021, 15, 796472.	1.0	1
118	Frequency domain identification of a parallel-cascade joint stiffness model. , 2010, , .		0
119	Effect of arm dominance on long-latency stabilizing reflex gain during posture. , 2014, 2014, 4075-8.		0
120	Vibration Selectively Modulates Corticomotor Excitability in Hand Muscles Following Stroke. Journal of Neuroscience and Neuroengineering, 2013, 2, 407-413.	0.2	0
121	Chemotherapy-induced neuronal dysfunction in the absence of axon degeneration.. Journal of Clinical Oncology, 2019, 37, e15091-e15091.	0.8	0
122	Cancer's role in chemotherapy-induced neuropathy.. Journal of Clinical Oncology, 2020, 38, e24064-e24064.	0.8	0
123	Relationship between Shear Wave Velocity and Muscle Activation is Inconsistent Across Different Muscle Types. SSRN Electronic Journal, 0, , .	0.4	0
124	Regulation of Multijoint Stretch Reflexes During Interactions with Stiff and Compliant Environments. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0
125	Unbiased Identification of Finite Impulse Response Linear Systems Operating in Closed-Loop. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0