Matthew C Tresch

List of Publications by Year
in descending order

43 papers	3,176 citations	516710 16 h-index	377865 34 g-index
48 all docs	48 docs citations	48 times ranked	1957 citing authors

#	Article	IF	Citations
1	Inhibition of Knee Sensory Receptors Alters Quadriceps Muscle Coordination in the Rat. Biosystems and Biorobotics, 2022, , 519-523.	0.3	0
2	Analyzing Modeled Torque Profiles to Understand Scale-Dependent Active Muscle Responses in the Hip Joint. Biomimetics, 2022, 7, 17.	3.3	4
3	Estimating muscle activation from EMG using deep learning-based dynamical systems models. Journal of Neural Engineering, 2022, 19, 036013.	3.5	11
4	Spinal and Neuromechanical Integration: Overview. , 2022, , 118-119.		0
5	Creation and Deployment of a Virtual, Inquiry-Guided Biomedical Engineering Laboratory Course. Biomedical Engineering Education, 2021, 1, 67-71.	0.7	3
6	The Effects of Mechanical Scale on Neural Control and the Regulation of Joint Stability. International Journal of Molecular Sciences, 2021, 22, 2018.	4.1	2
7	More than movement: the proprioceptive system as a new regulator of musculoskeletal biology. Current Opinion in Physiology, 2021, 20, 77-89.	1.8	10
8	Inhibition of Knee Sensory Receptors does not affect Quadriceps Muscle Activity at Different Conditions of Patellofemoral Loading. , 2021, , .		0
9	Bursting interneurons in the deep dorsal horn develop increased excitability and sensitivity to serotonin after chronic spinal injury. Journal of Neurophysiology, 2020, 123, 1657-1670.	1.8	8
10	Coordination amongst quadriceps muscles suggests neural regulation of internal joint stresses, not simplification of task performance. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 8135-8142.	7.1	38
11	Decoding neural activity to predict rat locomotion using intracortical and epidural arrays. Journal of Neural Engineering, 2019, 16, 036005.	3.5	9
12	Adaptation of muscle activation after patellar loading demonstrates neural control of joint variables. Scientific Reports, 2019, 9, 20370.	3.3	20
13	Uncertainty in Limb Configuration Makes Minimal Contribution to Errors Between Observed and Predicted Forces in a Musculoskeletal Model of the Rat Hindlimb. IEEE Transactions on Biomedical Engineering, 2018, 65, 469-476.	4.2	4
14	Vastus lateralis and vastus medialis produce distinct mediolateral forces on the patella but similar forces on the tibia in the rat. Journal of Biomechanics, 2018, 81, 45-51.	2.1	8
15	Adaptation after vastus lateralis denervation in rats demonstrates neural regulation of joint stresses and strains. ELife, 2018, 7, .	6.0	29
16	Chronic electromyograms in treadmill running SOD1 mice reveal early changes in muscle activation. Journal of Physiology, 2017, 595, 5387-5400.	2.9	12
17	Musculoskeletal geometry accounts for apparent extrinsic representation of paw position in dorsal spinocerebellar tract. Journal of Neurophysiology, 2017, 118, 234-242.	1.8	10
18	Critical Points and Traveling Wave in Locomotion: Experimental Evidence and Some Theoretical Considerations. Frontiers in Neural Circuits, 2017, 11, 98.	2.8	6

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19	Working hard to make a simple definition of synergies. Physics of Life Reviews, 2016, 17, 24-26.	2.8	4
20	A Probabilistic Analysis of Muscle Force Uncertainty for Control. IEEE Transactions on Biomedical Engineering, 2016, 63, 2359-2367.	4.2	3
21	Consequences of biomechanically constrained tasks in the design and interpretation of synergy analyses. Journal of Neurophysiology, 2015, 113, 2102-2113.	1.8	75
22	Multi-muscle FES control of the human arm for interaction tasks—Stabilizing with muscle co-contraction and postural adjustment: A simulation study. , 2014, , .		3
23	Characterization of motor units in behaving adult mice shows a wide primary range. Journal of Neurophysiology, 2014, 112, 543-551.	1.8	16
24	Identifying inverse human arm dynamics using a robotic testbed. , 2014, , .		3
25	Spinal and Neuromechanical Integration: Overview. , 2014, , 1-2.		1
26	Design and evaluation of a chronic EMG multichannel detection system for long-term recordings of hindlimb muscles in behaving mice. Journal of Electromyography and Kinesiology, 2013, 23, 531-539.	1.7	32
27	FES Control of Isometric Forces in the Rat Hindlimb Using Many Muscles. IEEE Transactions on Biomedical Engineering, 2013, 60, 1422-1430.	4.2	26
28	The number and choice of muscles impact the results of muscle synergy analyses. Frontiers in Computational Neuroscience, 2013, 7, 105.	2.1	188
29	System identification for 3D force control of a human arm neuroprosthesis using functional electrical stimulation. , 2012, , .		5
30	Transducer and base compliance alter the in situ 6 dof force measured from muscle during an isometric contraction in a multi-joint limb. Journal of Biomechanics, 2012, 45, 1017-1022.	2.1	1
31	Estimation of musculoskeletal models from in situ measurements of muscle action in the rat hindlimb. Journal of Experimental Biology, 2011, 214, 735-746.	1.7	10
32	Flexibility of Motor Pattern Generation Across Stimulation Conditions by the Neonatal Rat Spinal Cord. Journal of Neurophysiology, 2010, 103, 1580-1590.	1.8	25
33	Specificity of Intramuscular Activation During Rhythms Produced by Spinal Patterning Systems in the In Vitro Neonatal Rat With Hindlimb Attached Preparation. Journal of Neurophysiology, 2010, 104, 2158-2168.	1.8	16
34	Understanding complex muscles in the rat hindlimb: Activations and actions. , 2010, 2010, 4502-5.		1
35	Simplified and effective motor control based on muscle synergies to exploit musculoskeletal dynamics. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 7601-7606.	7.1	145
36	The case for and against muscle synergies. Current Opinion in Neurobiology, 2009, 19, 601-607.	4.2	467

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37	A balanced view of motor control. Nature Neuroscience, 2007, 10, 1227-1228.	14.8	17
38	Matrix Factorization Algorithms for the Identification of Muscle Synergies: Evaluation on Simulated and Experimental Data Sets. Journal of Neurophysiology, 2006, 95, 2199-2212.	1.8	634
39	Central and Sensory Contributions to the Activation and Organization of Muscle Synergies during Natural Motor Behaviors. Journal of Neuroscience, 2005, 25, 6419-6434.	3.6	392
40	Coordination and localization in spinal motor systems. Brain Research Reviews, 2002, 40, 66-79.	9.0	141
41	Muscle Synergies Encoded Within the Spinal Cord: Evidence From Focal Intraspinal NMDA Iontophoresis in the Frog. Journal of Neurophysiology, 2001, 85, 605-619.	1.8	246
42	The construction of movement by the spinal cord. Nature Neuroscience, 1999, 2, 162-167.	14.8	540
43	Muscle Synergies for Motor Control. , 0, , 449-465.		6