Emilio Bizzi

List of Publications by Year
in descending order

65 papers	10,602 citations	71061 41 h-index	128225 60 g-index
67 all docs	67 docs citations	67 times ranked	5454 citing authors

#	Article	IF	Citations
1	From motor planning to execution: a sensorimotor loop perspective. Journal of Neurophysiology, 2020, 124, 1815-1823.	0.9	30
2	Critical Points and Traveling Wave in Locomotion: Experimental Evidence and Some Theoretical Considerations. Frontiers in Neural Circuits, 2017, 11, 98.	1.4	6
3	Are Modular Activations Altered in Lower Limb Muscles of Persons with Multiple Sclerosis during Walking? Evidence from Muscle Synergies and Biomechanical Analysis. Frontiers in Human Neuroscience, 2016, 10, 620.	1.0	42
4	Synergy temporal sequences and topography in the spinal cord: evidence for a traveling wave in frog locomotion. Brain Structure and Function, 2016, 221, 3869-3890.	1.2	17
5	Cortical circuits and modules in movement generation: experiments and theories. Current Opinion in Neurobiology, 2016, 41, 174-178.	2.0	23
6	An Optogenetic Demonstration of Motor Modularity in the Mammalian Spinal Cord. Scientific Reports, 2016, 6, 35185.	1.6	45
7	A Hard Scientific Quest: Understanding Voluntary Movements. Daedalus, 2015, 144, 83-95.	0.9	19
8	Representation of Muscle Synergies in the Primate Brain. Journal of Neuroscience, 2015, 35, 12615-12624.	1.7	151
9	Rostro-Caudal Inhibition of Hindlimb Movements in the Spinal Cord of Mice. PLoS ONE, 2014, 9, e100865.	1.1	25
10	Polymer Fiber Probes Enable Optical Control of Spinal Cord and Muscle Function In Vivo. Advanced Functional Materials, 2014, 24, 6594-6600.	7.8	74
11	Muscle synergies evoked by microstimulation are preferentially encoded during behavior. Frontiers in Computational Neuroscience, 2014, 8, 20.	1.2	56
12	The neural origin of muscle synergies. Frontiers in Computational Neuroscience, 2013, 7, 51.	1.2	365
13	A theory for how sensorimotor skills are learned and retained in noisy and nonstationary neural circuits. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E5078-87.	3.3	63
14	Activity of the same motor cortex neurons during repeated experience with perturbed movement dynamics. Journal of Neurophysiology, 2012, 107, 3144-3154.	0.9	30
15	Muscle synergy patterns as physiological markers of motor cortical damage. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 14652-14656.	3.3	479
16	Microstimulation Activates a Handful of Muscle Synergies. Neuron, 2012, 76, 1071-1077.	3.8	238
17	Neuroscience at MIT. IEEE Pulse, 2011, 2, 47-50.	0.1	0
18	Modules in the brain stem and spinal cord underlying motor behaviors. Journal of Neurophysiology, 2011, 106, 1363-1378.	0.9	118

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19	An instrumented glove for small primates. Journal of Neuroscience Methods, 2010, 187, 100-104.	1.3	64
20	Why Professional Athletes Need a Prolonged Period of Warm-Up and Other Peculiarities of Human Motor Learning. Journal of Motor Behavior, 2010, 42, 381-388.	0.5	37
21	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.	3.3	145
22	Stability of muscle synergies for voluntary actions after cortical stroke in humans. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 19563-19568.	3.3	347
23	Adjustments of Motor Pattern for Load Compensation Via Modulated Activations of Muscle Synergies During Natural Behaviors. Journal of Neurophysiology, 2009, 101, 1235-1257.	0.9	101
24	Cortical Processing during Dynamic Motor Adaptation. Advances in Experimental Medicine and Biology, 2009, 629, 423-438.	0.8	10
25	Simultaneous sensorimotor adaptation and sequence learning. Experimental Brain Research, 2008, 184, 451-456.	0.7	13
26	Modulation of Muscle Synergy Recruitment in Primate Grasping. Journal of Neuroscience, 2008, 28, 880-892.	1.7	224
27	Neuronal Activity in the Cingulate Motor Areas During Adaptation to a New Dynamic Environment. Journal of Neurophysiology, 2008, 99, 1253-1266.	0.9	15
28	Motor Learning with Unstable NeuralÂRepresentations. Neuron, 2007, 54, 653-666.	3.8	210
29	Motor Primitives and Rehabilitation. , 2007, , .		4
30	Neuronal correlates of movement dynamics in the dorsal and ventral premotor area in the monkey. Experimental Brain Research, 2006, 168, 106-119.	0.7	55
31	Intermittent Practice Facilitates Stable Motor Memories. Journal of Neuroscience, 2006, 26, 11888-11892.	1.7	48
32	Disruption of Primary Motor Cortex before Learning Impairs Memory of Movement Dynamics. Journal of Neuroscience, 2006, 26, 12466-12470.	1.7	144
33	Localization and Connectivity in Spinal Interneuronal Networks: The Adductionâ€"Caudal Extensionâ€"Flexion Rhythm in the Frog. Journal of Neurophysiology, 2005, 94, 2120-2138.	0.9	31
34	Virtual-Environment-Based Telerehabilitation in Patients with Stroke. Presence: Teleoperators and Virtual Environments, 2005, 14, 214-233.	0.3	78
35	Shared and specific muscle synergies in natural motor behaviors. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 3076-3081.	3.3	600
36	Stability analysis of nonlinear muscle dynamics using contraction theory. , 2005, 2005, 4986-9.		4

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37	Intrinsic Musculoskeletal Properties Stabilize Wiping Movements in the Spinalized Frog. Journal of Neuroscience, 2005, 25, 3181-3191.	1.7	20
38	Central and Sensory Contributions to the Activation and Organization of Muscle Synergies during Natural Motor Behaviors. Journal of Neuroscience, 2005, 25, 6419-6434.	1.7	392
39	Neuronal Activity in the Supplementary Motor Area of Monkeys Adapting to a New Dynamic Environment. Journal of Neurophysiology, 2004, 91, 449-473.	0.9	108
40	Generalization in vision and motor control. Nature, 2004, 431, 768-774.	13.7	340
41	Cortical Control of Motor Learning. Frontiers in Neuroscience, 2004, , .	0.0	0
42	Combinations of muscle synergies in the construction of a natural motor behavior. Nature Neuroscience, 2003, 6, 300-308.	7.1	1,073
43	Neuronal Correlates of Kinematics-to-Dynamics Transformation in the Supplementary Motor Area. Neuron, 2002, 36, 751-765.	3.8	75
44	Coordination and localization in spinal motor systems. Brain Research Reviews, 2002, 40, 66-79.	9.1	141
45	Neuronal Correlates of Motor Performance and Motor Learning in the Primary Motor Cortex of Monkeys Adapting to an External Force Field. Neuron, 2001, 30, 593-607.	3.8	387
46	Muscle Synergies Encoded Within the Spinal Cord: Evidence From Focal Intraspinal NMDA Iontophoresis in the Frog. Journal of Neurophysiology, 2001, 85, 605-619.	0.9	246
47	New perspectives on spinal motor systems. Nature Reviews Neuroscience, 2000, 1, 101-108.	4.9	203
48	Virtual Environment Training Improves Motor Performance in Two Patients with Stroke. Neurology Report, 1999, 23, 57-67.	0.2	92
49	The construction of movement by the spinal cord. Nature Neuroscience, 1999, 2, 162-167.	7.1	540
50	Responses to spinal microstimulation in the chronically spinalized rat and their relationship to spinal systems activated by low threshold cutaneous stimulation. Experimental Brain Research, 1999, 129, 0401-0416.	0.7	160
51	Neural basis of motor control and its cognitive implications. Trends in Cognitive Sciences, 1998, 2, 97-102.	4.0	25
52	Spinal Cord Modular Organization and Rhythm Generation: An NMDA Iontophoretic Study in the Frog. Journal of Neurophysiology, 1998, 80, 2323-2339.	0.9	68
53	Group Report: Representations in Natural and Artificial Systems. Zeitschrift Fur Naturforschung - Section C Journal of Biosciences, 1998, 53, 738-751.	0.6	1
54	Augmented Feedback Presented in a Virtual Environment Accelerates Learning of a Difficult Motor Task. Journal of Motor Behavior, 1997, 29, 147-158.	0.5	246

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55	Consolidation in human motor memory. Nature, 1996, 382, 252-255.	13.7	883
56	Modular organization of motor behavior in the frog's spinal cord. Trends in Neurosciences, 1995, 18, 442-446.	4.2	162
57	Servo Hypotheses for the Biological Control of Movement. Journal of Motor Behavior, 1993, 25, 193-202.	0.5	192
58	Intermediate representations in the formation of arm trajectories. Current Opinion in Neurobiology, 1993, 3, 925-931.	2.0	14
59	6 Controlling Multijoint Motor behavior. Exercise and Sport Sciences Reviews, 1987, 15, 153???190.	1.6	161
60	Mechanical properties of muscles: Implications for motor control. Trends in Neurosciences, 1982, 5, 395-398.	4.2	124
61	The coordination of eye and head movement during smooth pursuit. Brain Research, 1978, 153, 39-53.	1.1	285
62	Motor Coordination: Central and Peripheral Control during Eyeâ€"Head Movement. , 1975, , 427-437.		10
63	Introductory lecture to session 1 Common problems confronting eye movement physiologists and investigators of somatic motor functions. Brain Research, 1974, 71, 191-194.	1.1	35
64	Single unit activity in the frontal eye fields of unanesthetized monkeys during eye and head movement. Experimental Brain Research, 1970, 10, 150-8.	0.7	304
65	Discharge of frontal eye field neurons during saccadic and following eye movements in unanesthetized monkeys. Experimental Brain Research, 1968, 6, 69-80.	0.7	274