

Andrea D'avella

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/4020584/publications.pdf>

Version: 2024-02-01

88
papers

8,485
citations

94381

37
h-index

54882

84
g-index

98
all docs

98
docs citations

98
times ranked

3862
citing authors

#	ARTICLE	IF	CITATIONS
1	Combinations of muscle synergies in the construction of a natural motor behavior. <i>Nature Neuroscience</i> , 2003, 6, 300-308.	7.1	1,073
2	Matrix Factorization Algorithms for the Identification of Muscle Synergies: Evaluation on Simulated and Experimental Data Sets. <i>Journal of Neurophysiology</i> , 2006, 95, 2199-2212.	0.9	634
3	Shared and specific muscle synergies in natural motor behaviors. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005, 102, 3076-3081.	3.3	600
4	Control of Fast-Reaching Movements by Muscle Synergy Combinations. <i>Journal of Neuroscience</i> , 2006, 26, 7791-7810.	1.7	591
5	Locomotor Primitives in Newborn Babies and Their Development. <i>Science</i> , 2011, 334, 997-999.	6.0	552
6	Combining modules for movement. <i>Brain Research Reviews</i> , 2008, 57, 125-133.	9.1	470
7	Central and Sensory Contributions to the Activation and Organization of Muscle Synergies during Natural Motor Behaviors. <i>Journal of Neuroscience</i> , 2005, 25, 6419-6434.	1.7	392
8	Muscle Synergies Encoded Within the Spinal Cord: Evidence From Focal Intraspinal NMDA Iontophoresis in the Frog. <i>Journal of Neurophysiology</i> , 2001, 85, 605-619.	0.9	246
9	Microstimulation Activates a Handful of Muscle Synergies. <i>Neuron</i> , 2012, 76, 1071-1077.	3.8	238
10	Modulation of Phasic and Tonic Muscle Synergies With Reaching Direction and Speed. <i>Journal of Neurophysiology</i> , 2008, 100, 1433-1454.	0.9	226
11	Modulation of Muscle Synergy Recruitment in Primate Grasping. <i>Journal of Neuroscience</i> , 2008, 28, 880-892.	1.7	224
12	New perspectives on spinal motor systems. <i>Nature Reviews Neuroscience</i> , 2000, 1, 101-108.	4.9	203
13	Differences in Adaptation Rates after Virtual Surgeries Provide Direct Evidence for Modularity. <i>Journal of Neuroscience</i> , 2013, 33, 12384-12394.	1.7	170
14	Representation of Muscle Synergies in the Primate Brain. <i>Journal of Neuroscience</i> , 2015, 35, 12615-12624.	1.7	151
15	Identifying Representative Synergy Matrices for Describing Muscular Activation Patterns During Multidirectional Reaching in the Horizontal Plane. <i>Journal of Neurophysiology</i> , 2010, 103, 1532-1542.	0.9	150
16	Control of reaching movements by muscle synergy combinations. <i>Frontiers in Computational Neuroscience</i> , 2013, 7, 42.	1.2	146
17	Coordination and localization in spinal motor systems. <i>Brain Research Reviews</i> , 2002, 40, 66-79.	9.1	141
18	On the Origin of Planar Covariation of Elevation Angles During Human Locomotion. <i>Journal of Neurophysiology</i> , 2008, 99, 1890-1898.	0.9	120

#	ARTICLE	IF	CITATIONS
19	Locomotor patterns in cerebellar ataxia. <i>Journal of Neurophysiology</i> , 2014, 112, 2810-2821.	0.9	114
20	Neuromuscular adjustments of gait associated with unstable conditions. <i>Journal of Neurophysiology</i> , 2015, 114, 2867-2882.	0.9	112
21	EMG patterns during assisted walking in the exoskeleton. <i>Frontiers in Human Neuroscience</i> , 2014, 8, 423.	1.0	106
22	Adjustments of Motor Pattern for Load Compensation Via Modulated Activations of Muscle Synergies During Natural Behaviors. <i>Journal of Neurophysiology</i> , 2009, 101, 1235-1257.	0.9	101
23	Effective force control by muscle synergies. <i>Frontiers in Computational Neuroscience</i> , 2014, 8, 46.	1.2	93
24	Superposition and modulation of muscle synergies for reaching in response to a change in target location. <i>Journal of Neurophysiology</i> , 2011, 106, 2796-2812.	0.9	91
25	An instrumented glove for small primates. <i>Journal of Neuroscience Methods</i> , 2010, 187, 100-104.	1.3	64
26	Dimensionality of joint torques and muscle patterns for reaching. <i>Frontiers in Computational Neuroscience</i> , 2014, 8, 24.	1.2	57
27	Muscle synergies evoked by microstimulation are preferentially encoded during behavior. <i>Frontiers in Computational Neuroscience</i> , 2014, 8, 20.	1.2	56
28	Robustness and Reliability of Synergy-Based Myocontrol of a Multiple Degree of Freedom Robotic Arm. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2016, 24, 940-950.	2.7	54
29	A Comprehensive Spatial Mapping of Muscle Synergies in Highly Variable Upper-Limb Movements of Healthy Subjects. <i>Frontiers in Physiology</i> , 2019, 10, 1231.	1.3	54
30	Editorial: Modularity in motor control: from muscle synergies to cognitive action representation. <i>Frontiers in Computational Neuroscience</i> , 2015, 9, 126.	1.2	52
31	Learned parametrized dynamic movement primitives with shared synergies for controlling robotic and musculoskeletal systems. <i>Frontiers in Computational Neuroscience</i> , 2013, 7, 138.	1.2	51
32	Low dimensionality of supraspinally induced force fields. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1998, 95, 7711-7714.	3.3	50
33	Evolutionary and Developmental Modules. <i>Frontiers in Computational Neuroscience</i> , 2013, 7, 61.	1.2	50
34	Robustness of muscle synergies during visuomotor adaptation. <i>Frontiers in Computational Neuroscience</i> , 2013, 7, 120.	1.2	50
35	Catching a Ball at the Right Time and Place: Individual Factors Matter. <i>PLoS ONE</i> , 2012, 7, e31770.	1.1	47
36	Distinct locomotor precursors in newborn babies. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 9604-9612.	3.3	45

#	ARTICLE	IF	CITATIONS
37	Modularity for Sensorimotor Control: Evidence and a New Prediction. <i>Journal of Motor Behavior</i> , 2010, 42, 361-369.	0.5	44
38	Gaze Behavior in One-Handed Catching and Its Relation with Interceptive Performance: What the Eyes Can't Tell. <i>PLoS ONE</i> , 2015, 10, e0119445.	1.1	39
39	Human-Human Interaction Forces and Interlimb Coordination During Side-by-Side Walking With Hand Contact. <i>Frontiers in Physiology</i> , 2018, 9, 179.	1.3	38
40	Myoelectric Control in Neurorehabilitation. <i>Critical Reviews in Biomedical Engineering</i> , 2010, 38, 381-391.	0.5	37
41	MINDWALKER: Going one step further with assistive lower limbs exoskeleton for SCI condition subjects. , 2012, , .		36
42	The neural resource allocation problem when enhancing human bodies with extra robotic limbs. <i>Nature Machine Intelligence</i> , 2021, 3, 850-860.	8.3	34
43	Spatiotemporal characteristics of muscle patterns for ball catching. <i>Frontiers in Computational Neuroscience</i> , 2013, 7, 107.	1.2	33
44	Localization and Connectivity in Spinal Interneuronal Networks: The Adductionâ€Caudal Extensionâ€Flexion Rhythm in the Frog. <i>Journal of Neurophysiology</i> , 2005, 94, 2120-2138.	0.9	31
45	Where Are You Throwing the Ball? I Better Watch Your Body, Not Just Your Arm!. <i>Frontiers in Human Neuroscience</i> , 2017, 11, 505.	1.0	30
46	Modularity for Motor Control and Motor Learning. <i>Advances in Experimental Medicine and Biology</i> , 2016, 957, 3-19.	0.8	28
47	Does the cerebellum shape the spatiotemporal organization of muscle patterns? Insights from subjects with cerebellar ataxias. <i>Journal of Neurophysiology</i> , 2020, 123, 1691-1710.	0.9	27
48	Intercepting virtual balls approaching under different gravity conditions: evidence for spatial prediction. <i>Journal of Neurophysiology</i> , 2017, 118, 2421-2434.	0.9	26
49	Effort minimization and synergistic muscle recruitment for three-dimensional force generation. <i>Frontiers in Computational Neuroscience</i> , 2013, 7, 186.	1.2	25
50	A computational analysis of motor synergies by dynamic response decomposition. <i>Frontiers in Computational Neuroscience</i> , 2013, 7, 191.	1.2	25
51	Mixed matrix factorization: a novel algorithm for the extraction of kinematic-muscular synergies. <i>Journal of Neurophysiology</i> , 2022, 127, 529-547.	0.9	24
52	How long did it last? You would better ask a human. <i>Frontiers in Neurorobotics</i> , 2014, 8, 2.	1.6	23
53	Evidence for sparse synergies in grasping actions. <i>Scientific Reports</i> , 2018, 8, 616.	1.6	20
54	A whole body characterization of individual strategies, gender differences, and common styles in overarm throwing. <i>Journal of Neurophysiology</i> , 2019, 122, 2486-2503.	0.9	20

#	ARTICLE	IF	CITATIONS
55	Towards a Myoelectrically Controlled Virtual Reality Interface for Synergy-Based Stroke Rehabilitation. <i>Biosystems and Biorobotics</i> , 2017, , 965-969.	0.2	19
56	Reorganization of Muscle Coordination Underlying Motor Learning in Cycling Tasks. <i>Frontiers in Bioengineering and Biotechnology</i> , 2020, 8, 800.	2.0	19
57	Rolling Motion Along an Incline: Visual Sensitivity to the Relation Between Acceleration and Slope. <i>Frontiers in Neuroscience</i> , 2018, 12, 406.	1.4	18
58	A novel method for measuring gaze orientation in space in unrestrained head conditions. <i>Journal of Vision</i> , 2013, 13, 28-28.	0.1	17
59	Synergy temporal sequences and topography in the spinal cord: evidence for a traveling wave in frog locomotion. <i>Brain Structure and Function</i> , 2016, 221, 3869-3890.	1.2	17
60	Muscle patterns underlying voluntary modulation of co-contraction. <i>PLoS ONE</i> , 2018, 13, e0205911.	1.1	13
61	A bang-bang control model predicts the triphasic muscles activity during hand reaching. <i>Journal of Neurophysiology</i> , 2020, 124, 295-304.	0.9	13
62	Simultaneous control of natural and extra degrees of freedom by isometric force and electromyographic activity in the muscle-to-force null space. <i>Journal of Neural Engineering</i> , 2022, 19, 016004.	1.8	13
63	Task space exploration improves adaptation after incompatible virtual surgeries. <i>Journal of Neurophysiology</i> , 2022, 127, 1127-1146.	0.9	13
64	Evaluation of a Pose-Shared Synergy-Based Isometric Model for Hand Force Estimation: Towards Myocontrol. <i>Biosystems and Biorobotics</i> , 2017, , 953-958.	0.2	12
65	Synthesis and Adaptation of Effective Motor Synergies for the Solution of Reaching Tasks. <i>Lecture Notes in Computer Science</i> , 2012, , 33-43.	1.0	11
66	Contraction level, but not force direction or wrist position, affects the spatial distribution of motor unit recruitment in the biceps brachii muscle. <i>European Journal of Applied Physiology</i> , 2020, 120, 853-860.	1.2	11
67	A new ball launching system with controlled flight parameters for catching experiments. <i>Journal of Neuroscience Methods</i> , 2011, 196, 264-275.	1.3	10
68	Grasping in One-Handed Catching in Relation to Performance. <i>PLoS ONE</i> , 2016, 11, e0158606.	1.1	8
69	Identification of Time-Varying and Time-Scalable Synergies From Continuous Electromyographic Patterns. <i>IEEE Robotics and Automation Letters</i> , 2019, 4, 3053-3058.	3.3	8
70	Decomposition of EMG patterns as combinations of time-varying muscle synergies. , 0, , .		6
71	Muscle Synergies for Motor Control. , 0, , 449-465.		6
72	Identifying Muscle Synergies from EMG Decomposition: Approaches, Evidence, and Potential Application to Neurorehabilitation. <i>Biosystems and Biorobotics</i> , 2013, , 1243-1247.	0.2	6

#	ARTICLE	IF	CITATIONS
73	Critical Points and Traveling Wave in Locomotion: Experimental Evidence and Some Theoretical Considerations. <i>Frontiers in Neural Circuits</i> , 2017, 11, 98.	1.4	6
74	Muscle Synergies. , 2009, , 2509-2512.		4
75	Identification of the best strategy to command variable stiffness using electromyographic signals. <i>Journal of Neural Engineering</i> , 2020, 17, 016058.	1.8	4
76	A Hessian-based decomposition characterizes how performance in complex motor skills depends on individual strategy and variability. <i>PLoS ONE</i> , 2021, 16, e0253626.	1.1	4
77	Muscle Synergies as a Tool to Unveil Specific Features in the Muscle Patterns After Cerebellar Damage. <i>Biosystems and Biorobotics</i> , 2022, , 903-907.	0.2	3
78	Muscle synergies in cerebral palsy and variability: challenges and opportunities. <i>Developmental Medicine and Child Neurology</i> , 2022, 64, 404-405.	1.1	3
79	Directional tuning of arm muscle activation in isometric force generation and its prediction by flexible and synergistic models. , 2012, , .		2
80	Can spatial filtering separate voluntary and involuntary components in children with dyskinetic cerebral palsy?. <i>PLoS ONE</i> , 2021, 16, e0250001.	1.1	2
81	A Bayesian approach to model individual differences and to partition individuals: case studies in growth and learning curves. <i>Statistical Methods and Applications</i> , 0, , 1.	0.7	2
82	Absolute Temperature. , 2008, , 2-2.		1
83	Integration of robotics and neuroscience beyond the hand: What kind of synergies?. <i>Physics of Life Reviews</i> , 2016, 17, 33-35.	1.5	1
84	Catching Virtual Throws: An Immersive Virtual Reality Setup to Evaluate Human Predictive Skills. <i>Lecture Notes in Computer Science</i> , 2018, , 235-242.	1.0	1
85	Online Continuous Detection of Time-Varying Muscle Synergies. <i>Biosystems and Biorobotics</i> , 2022, , 797-801.	0.2	1
86	Consistency of Myoelectric Control Across Multiple Sessions. <i>Biosystems and Biorobotics</i> , 2019, , 1166-1170.	0.2	1
87	A Low-Cost Wireless Bite Force Measurement Device. <i>Materials</i> , 2022, 15, 4000.	1.3	1
88	Feasible wrench space and its estimation for isometric haptic interaction. , 2012, , .		0