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	Muscle Synergies as a Tool to Unveil Specific Features in the Muscle Patterns After Cerebellar Damage. Biosystems and Biorobotics, 2022, , 903-907.	0.2	3
2	Online Continuous Detection of Time-Varying Muscle Synergies. Biosystems and Biorobotics, 2022, , 797-801.	0.2	1
3	Muscle synergies in cerebral palsy and variability: challenges and opportunities. Developmental Medicine and Child Neurology, 2022, 64, 404-405.	1.1	3
4	Mixed matrix factorization: a novel algorithm for the extraction of kinematic-muscular synergies. Journal of Neurophysiology, 2022, 127, 529-547.	0.9	24
5	Simultaneous control of natural and extra degrees of freedom by isometric force and electromyographic activity in the muscle-to-force null space. Journal of Neural Engineering, 2022, 19, 016004.	1.8	13
6	Task space exploration improves adaptation after incompatible virtual surgeries. Journal of Neurophysiology, 2022, 127, 1127-1146.	0.9	13
7	A Low-Cost Wireless Bite Force Measurement Device. Materials, 2022, 15, 4000.	1.3	1
8	Can spatial filtering separate voluntary and involuntary components in children with dyskinetic cerebral palsy?. PLoS ONE, 2021, 16, e0250001.	1.1	2
9	A Hessian-based decomposition characterizes how performance in complex motor skills depends on individual strategy and variability. PLoS ONE, 2021, 16, e0253626.	1.1	4
10	The neural resource allocation problem when enhancing human bodies with extra robotic limbs. Nature Machine Intelligence, 2021, 3, 850-860.	8.3	34
11	Reorganization of Muscle Coordination Underlying Motor Learning in Cycling Tasks. Frontiers in Bioengineering and Biotechnology, 2020, 8, 800.	2.0	19
12	Does the cerebellum shape the spatiotemporal organization of muscle patterns? Insights from subjects with cerebellar ataxias. Journal of Neurophysiology, 2020, 123, 1691-1710.	0.9	27
13	A bang-bang control model predicts the triphasic muscles activity during hand reaching. Journal of Neurophysiology, 2020, 124, 295-304.	0.9	13
14	Contraction level, but not force direction or wrist position, affects the spatial distribution of motor unit recruitment in the biceps brachii muscle. European Journal of Applied Physiology, 2020, 120, 853-860.	1.2	11
15	Identification of the best strategy to command variable stiffness using electromyographic signals. Journal of Neural Engineering, 2020, 17, 016058.	1.8	4
16	Distinct locomotor precursors in newborn babies. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 9604-9612.	3.3	45
17	Identification of Time-Varying and Time-Scalable Synergies From Continuous Electromyographic Patterns. IEEE Robotics and Automation Letters, 2019, 4, 3053-3058.	3.3	8
18	A whole body characterization of individual strategies, gender differences, and common styles in overarm throwing. Journal of Neurophysiology, 2019, 122, 2486-2503.	0.9	20

#	Article	IF	Citations
19	A Comprehensive Spatial Mapping of Muscle Synergies in Highly Variable Upper-Limb Movements of Healthy Subjects. Frontiers in Physiology, 2019, 10, 1231.	1.3	54
20	Consistency of Myoelectric Control Across Multiple Sessions. Biosystems and Biorobotics, 2019, , 1166-1170.	0.2	1
21	Evidence for sparse synergies in grasping actions. Scientific Reports, 2018, 8, 616.	1.6	20
22	Muscle patterns underlying voluntary modulation of co-contraction. PLoS ONE, 2018, 13, e0205911.	1.1	13
23	Human-Human Interaction Forces and Interlimb Coordination During Side-by-Side Walking With Hand Contact. Frontiers in Physiology, 2018, 9, 179.	1.3	38
24	Rolling Motion Along an Incline: Visual Sensitivity to the Relation Between Acceleration and Slope. Frontiers in Neuroscience, 2018, 12, 406.	1.4	18
25	Catching Virtual Throws: An Immersive Virtual Reality Setup to Evaluate Human Predictive Skills. Lecture Notes in Computer Science, 2018, , 235-242.	1.0	1
26	Intercepting virtual balls approaching under different gravity conditions: evidence for spatial prediction. Journal of Neurophysiology, 2017, 118, 2421-2434.	0.9	26
27	Evaluation of a Pose-Shared Synergy-Based Isometric Model for Hand Force Estimation: Towards Myocontrol. Biosystems and Biorobotics, 2017, , 953-958.	0.2	12
28	Towards a Myoelectrically Controlled Virtual Reality Interface for Synergy-Based Stroke Rehabilitation. Biosystems and Biorobotics, 2017, , 965-969.	0.2	19
29	Critical Points and Traveling Wave in Locomotion: Experimental Evidence and Some Theoretical Considerations. Frontiers in Neural Circuits, 2017, 11, 98.	1.4	6
30	Where Are You Throwing the Ball? I Better Watch Your Body, Not Just Your Arm!. Frontiers in Human Neuroscience, 2017, 11, 505.	1.0	30
31	Grasping in One-Handed Catching in Relation to Performance. PLoS ONE, 2016, 11, e0158606.	1.1	8
32	Modularity for Motor Control and Motor Learning. Advances in Experimental Medicine and Biology, 2016, 957, 3-19.	0.8	28
33	Integration of robotics and neuroscience beyond the hand: What kind of synergies?. Physics of Life Reviews, 2016, 17, 33-35.	1.5	1
34	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
35	Robustness and Reliability of Synergy-Based Myocontrol of a Multiple Degree of Freedom Robotic Arm. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2016, 24, 940-950.	2.7	54
36	Editorial: Modularity in motor control: from muscle synergies to cognitive action representation. Frontiers in Computational Neuroscience, 2015, 9, 126.	1.2	52

#	Article	IF	Citations
37	Gaze Behavior in One-Handed Catching and Its Relation with Interceptive Performance: What the Eyes Can't Tell. PLoS ONE, 2015, 10, e0119445.	1.1	39
38	Neuromuscular adjustments of gait associated with unstable conditions. Journal of Neurophysiology, 2015, 114, 2867-2882.	0.9	112
39	Representation of Muscle Synergies in the Primate Brain. Journal of Neuroscience, 2015, 35, 12615-12624.	1.7	151
40	Dimensionality of joint torques and muscle patterns for reaching. Frontiers in Computational Neuroscience, 2014, 8, 24.	1.2	57
41	Effective force control by muscle synergies. Frontiers in Computational Neuroscience, 2014, 8, 46.	1.2	93
42	EMG patterns during assisted walking in the exoskeleton. Frontiers in Human Neuroscience, 2014, 8, 423.	1.0	106
43	Locomotor patterns in cerebellar ataxia. Journal of Neurophysiology, 2014, 112, 2810-2821.	0.9	114
44	How long did it last? You would better ask a human. Frontiers in Neurorobotics, 2014, 8, 2.	1.6	23
45	Muscle synergies evoked by microstimulation are preferentially encoded during behavior. Frontiers in Computational Neuroscience, 2014, 8, 20.	1.2	56
46	Differences in Adaptation Rates after Virtual Surgeries Provide Direct Evidence for Modularity. Journal of Neuroscience, 2013, 33, 12384-12394.	1.7	170
47	Identifying Muscle Synergies from EMG Decomposition: Approaches, Evidence, and Potential Application to Neurorehabilitation. Biosystems and Biorobotics, 2013, , 1243-1247.	0.2	6
48	Evolutionary and Developmental Modules. Frontiers in Computational Neuroscience, 2013, 7, 61.	1.2	50
49	Spatiotemporal characteristics of muscle patterns for ball catching. Frontiers in Computational Neuroscience, 2013, 7, 107.	1.2	33
50	Control of reaching movements by muscle synergy combinations. Frontiers in Computational Neuroscience, 2013, 7, 42.	1.2	146
51	Robustness of muscle synergies during visuomotor adaptation. Frontiers in Computational Neuroscience, 2013, 7, 120.	1.2	50
52	Learned parametrized dynamic movement primitives with shared synergies for controlling robotic and musculoskeletal systems. Frontiers in Computational Neuroscience, 2013, 7, 138.	1.2	51
53	Effort minimization and synergistic muscle recruitment for three-dimensional force generation. Frontiers in Computational Neuroscience, 2013, 7, 186.	1.2	25
54	A novel method for measuring gaze orientation in space in unrestrained head conditions. Journal of Vision, 2013, 13, 28-28.	0.1	17

#	Article	IF	Citations
55	A computational analysis of motor synergies by dynamic response decomposition. Frontiers in Computational Neuroscience, 2013, 7, 191.	1.2	25
56	Directional tuning of arm muscle activation in isometric force generation and its prediction by flexible and synergistic models. , 2012, , .		2
57	MINDWALKER: Going one step further with assistive lower limbs exoskeleton for SCI condition subjects. , 2012, , .		36
58	Feasible wrench space and its estimation for isometric haptic interaction. , 2012, , .		0
59	Microstimulation Activates a Handful of Muscle Synergies. Neuron, 2012, 76, 1071-1077.	3.8	238
60	Synthesis and Adaptation of Effective Motor Synergies for the Solution of Reaching Tasks. Lecture Notes in Computer Science, 2012, , 33-43.	1.0	11
61	Catching a Ball at the Right Time and Place: Individual Factors Matter. PLoS ONE, 2012, 7, e31770.	1.1	47
62	Locomotor Primitives in Newborn Babies and Their Development. Science, 2011, 334, 997-999.	6.0	552
63	Superposition and modulation of muscle synergies for reaching in response to a change in target location. Journal of Neurophysiology, 2011, 106, 2796-2812.	0.9	91
64	A new ball launching system with controlled flight parameters for catching experiments. Journal of Neuroscience Methods, 2011, 196, 264-275.	1.3	10
65	Identifying Representative Synergy Matrices for Describing Muscular Activation Patterns During Multidirectional Reaching in the Horizontal Plane. Journal of Neurophysiology, 2010, 103, 1532-1542.	0.9	150
66	An instrumented glove for small primates. Journal of Neuroscience Methods, 2010, 187, 100-104.	1.3	64
67	Myoelectric Control in Neurorehabilitation. Critical Reviews in Biomedical Engineering, 2010, 38, 381-391.	0.5	37
68	Modularity for Sensorimotor Control: Evidence and a New Prediction. Journal of Motor Behavior, 2010, 42, 361-369.	0.5	44
69	Muscle Synergies. , 2009, , 2509-2512.		4
70	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
71	Combining modules for movement. Brain Research Reviews, 2008, 57, 125-133.	9.1	470
72	Absolute Temperature. , 2008, , 2-2.		1

#	Article	IF	Citations
73	Modulation of Phasic and Tonic Muscle Synergies With Reaching Direction and Speed. Journal of Neurophysiology, 2008, 100, 1433-1454.	0.9	226
74	Modulation of Muscle Synergy Recruitment in Primate Grasping. Journal of Neuroscience, 2008, 28, 880-892.	1.7	224
75	On the Origin of Planar Covariation of Elevation Angles During Human Locomotion. Journal of Neurophysiology, 2008, 99, 1890-1898.	0.9	120
76	Control of Fast-Reaching Movements by Muscle Synergy Combinations. Journal of Neuroscience, 2006, 26, 7791-7810.	1.7	591
77	Matrix Factorization Algorithms for the Identification of Muscle Synergies: Evaluation on Simulated and Experimental Data Sets. Journal of Neurophysiology, 2006, 95, 2199-2212.	0.9	634
78	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
79	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
80	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
81	Combinations of muscle synergies in the construction of a natural motor behavior. Nature Neuroscience, 2003, 6, 300-308.	7.1	1,073
82	Coordination and localization in spinal motor systems. Brain Research Reviews, 2002, 40, 66-79.	9.1	141
83	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
84	New perspectives on spinal motor systems. Nature Reviews Neuroscience, 2000, 1, 101-108.	4.9	203
85	Low dimensionality of supraspinally induced force fields. Proceedings of the National Academy of Sciences of the United States of America, 1998, 95, 7711-7714.	3.3	50
86	Decomposition of EMG patterns as combinations of time-varying muscle synergies. , 0, , .		6
87	Muscle Synergies for Motor Control. , 0, , 449-465.		6
88	A Bayesian approach to model individual differences and to partition individuals: case studies in growth and learning curves. Statistical Methods and Applications, 0, , 1.	0.7	2