Annarita Cutrone

List of Publications by Year
in descending order

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93 papers	7,372 citations	136950 32 h-index	60623 81 g-index
94 all docs	94 docs citations	94 times ranked	7230 citing authors

#	Article	IF	Citations
1	Electronic dura mater for long-term multimodal neural interfaces. Science, 2015, 347, 159-163.	12.6	845
2	Restoring Natural Sensory Feedback in Real-Time Bidirectional Hand Prostheses. Science Translational Medicine, 2014, 6, 222ra19.	12.4	805
3	A critical review of interfaces with the peripheral nervous system for the control of neuroprostheses and hybrid bionic systems. Journal of the Peripheral Nervous System, 2005, 10, 229-258.	3.1	723
4	A brainâ€“spine interface alleviating gait deficits after spinal cord injury in primates. Nature, 2016, 539, 284-288.	27.8	492
5	Intraneural stimulation elicits discrimination of textural features by artificial fingertip in intact and amputee humans. ELife, 2016, 5, e09148.	6.0	286
6	Spatiotemporal neuromodulation therapies engaging muscle synergies improve motor control after spinal cord injury. Nature Medicine, 2016, 22, 138-145.	30.7	274
7	Biomimetic Intraneural Sensory Feedback Enhances Sensation Naturalness, Tactile Sensitivity, and Manual Dexterity in a Bidirectional Prosthesis. Neuron, 2018, 100, 37-45.e7.	8.1	265
8	Electrical spinal cord stimulation must preserve proprioception to enable locomotion in humans with spinal cord injury. Nature Neuroscience, 2018, 21, 1728-1741.	14.8	247
9	A closed-loop hand prosthesis with simultaneous intraneural tactile and position feedback. Science Robotics, 2019, 4, .	17.6	198
10	Sensory feedback restoration in leg amputees improves walking speed, metabolic cost and phantom pain. Nature Medicine, 2019, 25, 1356-1363.	30.7	174
11	Closed-loop neuromodulation of spinal sensorimotor circuits controls refined locomotion after complete spinal cord injury. Science Translational Medicine, 2014, 6, 255ra133.	12.4	170
12	Unidirectional brain to muscle connectivity reveals motor cortex control of leg muscles during stereotyped walking. NeuroImage, 2017, 159, 403-416.	4.2	148
13	A somatotopic bidirectional hand prosthesis with transcutaneous electrical nerve stimulation based sensory feedback. Scientific Reports, 2017, 7, 10930.	3.3	147
14	Neuroplastic Changes Following Brain Ischemia and their Contribution to Stroke Recovery: Novel Approaches in Neurorehabilitation. Frontiers in Cellular Neuroscience, 2017, 11, 76.	3.7	144
15	Sixâ€Month Assessment of a Hand Prosthesis with Intraneural Tactile Feedback. Annals of Neurology, 2019, 85, 137-154.	5.3	140
16	Neurotechnology-aided interventions for upper limb motor rehabilitation in severe chronic stroke. Brain, 2019, 142, 2182-2197.	7.6	138
17	Enhancing functional abilities and cognitive integration of the lower limb prosthesis. Science Translational Medicine, 2019, 11, .	12.4	133
18	Brain-controlled modulation of spinal circuits improves recovery from spinal cord injury. Nature Communications, 2018, 9, 3015.	12.8	108

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19	Toward higher-performance bionic limbs for wider clinical use. Nature Biomedical Engineering, 2023, 7, 473-485.	22.5	104
20	Evaluation of the effects of the Arm Light Exoskeleton on movement execution and muscle activities: a pilot study on healthy subjects. Journal of NeuroEngineering and Rehabilitation, 2016, 13, 9.	4.6	101
21	Shared humanâ€“robot proportional control of a dexterous myoelectric prosthesis. Nature Machine Intelligence, 2019, 1, 400-411.	16.0	91
22	Decoding Information From Neural Signals Recorded Using Intraneural Electrodes: Toward the Development of a Neurocontrolled Hand Prosthesis. Proceedings of the IEEE, 2010, 98, 407-417.	21.3	84
23	Artificial Balance: Restoration of the Vestibulo-Ocular Reflex in Humans with a Prototype Vestibular Neuroprosthesis. Frontiers in Neurology, 2014, 5, 66.	2.4	80
24	RELICA: A method for estimating the reliability of independent components. NeuroImage, 2014, 103, 391-400.	4.2	76
25	Advanced Neurotechnologies for the Restoration of Motor Function. Neuron, 2020, 105, 604-620.	8.1	69
26	Engagement of the Rat Hindlimb Motor Cortex across Natural Locomotor Behaviors. Journal of Neuroscience, 2016, 36, 10440-10455.	3.6	60
27	Chronic multichannel neural recordings from soft regenerative microchannel electrodes during gait. Scientific Reports, 2015, 5, 14363.	3.3	59
28	Focal release of neurotrophic factors by biodegradable microspheres enhance motor and sensory axonal regeneration in vitro and in vivo. Brain Research, 2016, 1636, 93-106.	2.2	51
29	Combining robotic training and inactivation of the healthy hemisphere restores pre-stroke motor patterns in mice. ELife, 2017, 6, .	6.0	50
30	Corticospinal neuroprostheses to restore locomotion after spinal cord injury. Neuroscience Research, 2014, 78, 21-29.	1.9	47
31	Current Solutions and Future Trends for Robotic Prosthetic Hands. Annual Review of Control, Robotics, and Autonomous Systems, 2021, 4, 595-627.	11.8	46
32	Combined Rehabilitation Promotes the Recovery of Structural and Functional Features of Healthy Neuronal Networks after Stroke. Cell Reports, 2019, 28, 3474-3485.e6.	6.4	42
33	Tutorial: a computational framework for the design and optimization of peripheral neural interfaces. Nature Protocols, 2020, 15, 3129-3153.	12.0	40
34	Dynamic Functional Connectivity of Resting-State Spinal Cord fMRI Reveals Fine-Grained Intrinsic Architecture. Neuron, 2020, 108, 424-435.e4.	8.1	38
35	Bioelectronic medicine for the autonomic nervous system: clinical applications and perspectives. Journal of Neural Engineering, 2021, 18, 041002.	3.5	37
36	Stability against backward balance loss: Age-related modifications following slip-like perturbations of multiple amplitudes. Gait and Posture, 2017, 53, 207-214.	1.4	35

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37	EEG topographies provide subject-specific correlates of motor control. Scientific Reports, 2017, 7, 13229.	3.3	35
38	Phantom somatosensory evoked potentials following selective intraneural electrical stimulation in two amputees. Clinical Neurophysiology, 2018, 129, 1117-1120.	1.5	35
39	Multi-pronged neuromodulation intervention engages the residual motor circuitry to facilitate walking in a rat model of spinal cord injury. Nature Communications, 2021, 12, 1925.	12.8	35
40	Muscle synergies and spinal maps are sensitive to the asymmetry induced by a unilateral stroke. Journal of NeuroEngineering and Rehabilitation, 2015, 12, 39.	4.6	34
41	Compliant peripheral nerve interfaces. Journal of Neural Engineering, 2021, 18, 031001.	3.5	33
42	Implantable Neural Interfaces and Wearable Tactile Systems for Bidirectional Neuroprosthetics Systems. Advanced Healthcare Materials, 2019, 8, e1801345.	7.6	32
43	Neural signal recording and processing in somatic neuroprosthetic applications. A review. Journal of Neuroscience Methods, 2020, 337, 108653.	2.5	31
44	Hand Control With Invasive Feedback Is Not Impaired by Increased Cognitive Load. Frontiers in Bioengineering and Biotechnology, 2020, 8, 287.	4.1	31
45	Closed-loop control of trunk posture improves locomotion through the regulation of leg proprioceptive feedback after spinal cord injury. Scientific Reports, 2018, 8, 76.	3.3	30
46	Intrafascicular peripheral nerve stimulation produces fine functional hand movements in primates. Science Translational Medicine, 2021, 13, eabg6463.	12.4	30
47	Progress and challenges of implantable neural interfaces based on nature-derived materials. Bioelectronic Medicine, 2021, 7, 6.	2.3	29
48	The effects on biomechanics of walking and balance recovery in a novel pelvis exoskeleton during zero-torque control. Robotica, 2014, 32, 1317-1330.	1.9	28
49	Neuroprosthetic technologies to augment the impact of neurorehabilitation after spinal cord injury. Annals of Physical and Rehabilitation Medicine, 2015, 58, 232-237.	2.3	26
50	Design and Validation of a Modular One-To-Many Actuator for a Soft Wearable Exosuit. Frontiers in Neurorobotics, 2019, 13, 39.	2.8	26
51	Experimental and Computational Study on Motor Control and Recovery After Stroke: Toward a Constructive Loop Between Experimental and Virtual Embodied Neuroscience. Frontiers in Systems Neuroscience, 2020, 14, 31.	2.5	23
52	Uncontrolled manifold hypothesis: Organization of leg joint variance in humans while walking in a wide range of speeds. Human Movement Science, 2018, 57, 227-235.	1.4	22
53	Functional imaging of rostrocaudal spinal activity during upper limb motor tasks. NeuroImage, 2019, 200, 590-600.	4.2	22
54	Towards reliable spinal cord fMRI: Assessment of common imaging protocols. NeuroImage, 2022, 250, 118964.	4.2	22

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55	Intersegmental coordination elicited by unexpected multidirectional slipping-like perturbations resembles that adopted during steady locomotion. Journal of Neurophysiology, 2016, 115, 728-740.	1.8	21
56	Pre-Impact Fall Detection: Optimal Sensor Positioning Based on a Machine Learning Paradigm. PLoS ONE, 2014, 9, e92037.	2.5	20
57	A hybrid computational model to predict chemotactic guidance of growth cones. Scientific Reports, 2015, 5, 11340.	3.3	19
58	Giuliano Vanghetti and the innovation of â€œcineplastic operationsâ€• Neurology, 2017, 89, 1627-1632.	1.1	19
59	Neuromuscular electrical stimulation restores upper limb sensory-motor functions and body representations in chronic stroke survivors. Med, 2022, 3, 58-74.e10.	4.4	19
60	Spinal Cord fMRI: A New Window into the Central Nervous System. Neuroscientist, 2023, 29, 715-731.	3.5	18
61	A modular strategy for next-generation upper-limb sensory-motor neuroprostheses. Med, 2021, 2, 912-937.	4.4	16
62	Post-Stroke Longitudinal Alterations of Inter-Hemispheric Correlation and Hemispheric Dominance in Mouse Pre-Motor Cortex. PLoS ONE, 2016, 11, e0146858.	2.5	16
63	Sensitivity to temporal parameters of intraneural tactile sensory feedback. Journal of NeuroEngineering and Rehabilitation, 2020, 17, 110.	4.6	15
64	High gamma response tracks different syntactic structures in homophonous phrases. Scientific Reports, 2020, 10, 7537.	3.3	15
65	Motor improvement estimation and task adaptation for personalized robot-aided therapy: a feasibility study. BioMedical Engineering OnLine, 2020, 19, 33.	2.7	14
66	Soft Embodiment for Engineering Artificial Limbs. Trends in Cognitive Sciences, 2020, 24, 965-968.	7.8	13
67	Computational approaches to decode grasping force and velocity level in upper-limb amputee from intraneural peripheral signals. Journal of Neural Engineering, 2021, 18, 055001.	3.5	12
68	Neuroprosthetics: Restoring multi-joint motor control. Nature Biomedical Engineering, 2017, 1, .	22.5	7
69	Preclinical upper limb neurorobotic platform to assess, rehabilitate, and develop therapies. Science Robotics, 2022, 7, eabk2378.	17.6	7
70	Nerve Repair: Biomimetic Architectures for Peripheral Nerve Repair: A Review of Biofabrication Strategies (Adv. Healthcare Mater. 8/2018). Advanced Healthcare Materials, 2018, 7, 1870035.	7.6	6
71	Brain reactions to the use of sensorized hand prosthesis in amputees. Brain and Behavior, 2020, 10, e01734.	2.2	6
72	A data-driven polynomial approach to reproduce the scar tissue outgrowth around neural implants. Journal of Materials Science: Materials in Medicine, 2020, 31, 59.	3.6	6

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73	All-Polymer Printed Low-Cost Regenerative Nerve Cuff Electrodes. Frontiers in Bioengineering and Biotechnology, 2021, 9, 615218.	4.1	6
74	A machine learning framework to optimize optic nerve electrical stimulation for vision restoration. Patterns, 2021, 2, 100286.	5.9	6
75	Repeated exposure to tripping like perturbations elicits more precise control and lower toe clearance of the swinging foot during steady walking. Human Movement Science, 2021, 76, 102775.	1.4	5
76	MorphoSONIC: A morphologically structured intramembrane cavitation model reveals fiber-specific neuromodulation by ultrasound. IScience, 2021, 24, 103085.	4.1	5
77	Material surface detection on various body parts: a preliminary study for temperature substitution for upper arm amputees. , 2021, , .		4
78	Stimulus evoked causality estimation in stereo-EEG. Journal of Neural Engineering, 2021, 18, 056041.	3.5	4
79	Discrimination of Walking and Standing from Entropy of EEG Signals and Common Spatial Patterns. , 2020, , .		4
80	A Oneâ€Step Biofunctionalization Strategy of Electrospun Scaffolds Enables Spatially Selective Presentation of Biological Cues. Advanced Materials Technologies, 2020, 5, 2000269.	5.8	3
81	Investigating ocular movements and Vestibular Evoked Potentials for a vestibular neuroprosthesis: Response to pulse trains and baseline stimulation. , 2013, , .		2
82	Up-Down Chair: A novel mechatronic device to assess otolith function in patients with vestibular disorders. Medical Engineering and Physics, 2016, 38, 302-307.	1.7	2
83	Adaptation and Optimization of an Intraneural Electrode to Interface with the Cervical Vagus Nerve. , 2021, , .		2
84	Reactive Exercises with Interactive Objects: Interim Analysis of a Randomized Trial on Task-Driven NMES Grasp Rehabilitation for Subacute and Early Chronic Stroke Patients. Sensors, 2021, 21, 6739.	3.8	2
85	Polysaccharide Layer-by-Layer Coating for Polyimide-Based Neural Interfaces. Micromachines, 2022, 13, 692.	2.9	2
86	Understanding age-related modifications of motor control strategies. Journal of NeuroEngineering and Rehabilitation, 2008, 5, 26.	4.6	1
87	Guest Editorial - Neural engineering: An exciting, multi-disciplinary, and revolutionary research field. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2013, 21, 523-523.	4.9	1
88	Towards in-silico robotic post-stroke rehabilitation for mice. , 2019, , .		1
89	Brain network modulation in transradial amputee with finger perception restored through biomimetic intraneural stimulation. Neurological Sciences, 2021, 42, 5369-5372.	1.9	1
90	Efferent microneurography recordings: A tool for motor control study and hand-prosthesis decoding. , 2013, , .		0

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91	Myoelectric activity imaging and decoding with multichannel surface EMG for enhanced everyday life applicability. , 2019, , .		0
92	A Software Tool for the Real-Time in Vivo Evaluation of Neural Electrodes' Selectivity. , 2021, , .		0
93	Directional Growth of cm-Long PLGA Nanofibers by a Simple and Fast Wet-Processing Method. Materials, 2022, 15, 687.	2.9	0