

# Annarita Cutrone

## List of Publications by Year in descending order

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93  
papers

7,372  
citations

136740

32  
h-index

60497

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. <i>Science</i> , 2015, 347, 159-163.	6.0	845
2	Restoring Natural Sensory Feedback in Real-Time Bidirectional Hand Prostheses. <i>Science Translational Medicine</i> , 2014, 6, 222ra19.	5.8	805
3	A critical review of interfaces with the peripheral nervous system for the control of neuroprostheses and hybrid bionic systems. <i>Journal of the Peripheral Nervous System</i> , 2005, 10, 229-258.	1.4	723
4	A brain-spine interface alleviating gait deficits after spinal cord injury in primates. <i>Nature</i> , 2016, 539, 284-288.	13.7	492
5	Intraneural stimulation elicits discrimination of textural features by artificial fingertip in intact and amputee humans. <i>ELife</i> , 2016, 5, e09148.	2.8	286
6	Spatiotemporal neuromodulation therapies engaging muscle synergies improve motor control after spinal cord injury. <i>Nature Medicine</i> , 2016, 22, 138-145.	15.2	274
7	Biomimetic Intraneural Sensory Feedback Enhances Sensation Naturalness, Tactile Sensitivity, and Manual Dexterity in a Bidirectional Prosthesis. <i>Neuron</i> , 2018, 100, 37-45.e7.	3.8	265
8	Electrical spinal cord stimulation must preserve proprioception to enable locomotion in humans with spinal cord injury. <i>Nature Neuroscience</i> , 2018, 21, 1728-1741.	7.1	247
9	A closed-loop hand prosthesis with simultaneous intraneural tactile and position feedback. <i>Science Robotics</i> , 2019, 4, .	9.9	198
10	Sensory feedback restoration in leg amputees improves walking speed, metabolic cost and phantom pain. <i>Nature Medicine</i> , 2019, 25, 1356-1363.	15.2	174
11	Closed-loop neuromodulation of spinal sensorimotor circuits controls refined locomotion after complete spinal cord injury. <i>Science Translational Medicine</i> , 2014, 6, 255ra133.	5.8	170
12	Unidirectional brain to muscle connectivity reveals motor cortex control of leg muscles during stereotyped walking. <i>NeuroImage</i> , 2017, 159, 403-416.	2.1	148
13	A somatotopic bidirectional hand prosthesis with transcutaneous electrical nerve stimulation based sensory feedback. <i>Scientific Reports</i> , 2017, 7, 10930.	1.6	147
14	Neuroplastic Changes Following Brain Ischemia and their Contribution to Stroke Recovery: Novel Approaches in Neurorehabilitation. <i>Frontiers in Cellular Neuroscience</i> , 2017, 11, 76.	1.8	144
15	Six-Month Assessment of a Hand Prosthesis with Intraneural Tactile Feedback. <i>Annals of Neurology</i> , 2019, 85, 137-154.	2.8	140
16	Neurotechnology-aided interventions for upper limb motor rehabilitation in severe chronic stroke. <i>Brain</i> , 2019, 142, 2182-2197.	3.7	138
17	Enhancing functional abilities and cognitive integration of the lower limb prosthesis. <i>Science Translational Medicine</i> , 2019, 11, .	5.8	133
18	Brain-controlled modulation of spinal circuits improves recovery from spinal cord injury. <i>Nature Communications</i> , 2018, 9, 3015.	5.8	108

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19	Toward higher-performance bionic limbs for wider clinical use. <i>Nature Biomedical Engineering</i> , 2023, 7, 473-485.	11.6	104
20	Evaluation of the effects of the Arm Light Exoskeleton on movement execution and muscle activities: a pilot study on healthy subjects. <i>Journal of NeuroEngineering and Rehabilitation</i> , 2016, 13, 9.	2.4	101
21	Shared human-robot proportional control of a dexterous myoelectric prosthesis. <i>Nature Machine Intelligence</i> , 2019, 1, 400-411.	8.3	91
22	Decoding Information From Neural Signals Recorded Using Intra-neural Electrodes: Toward the Development of a Neurocontrolled Hand Prosthesis. <i>Proceedings of the IEEE</i> , 2010, 98, 407-417.	16.4	84
23	Artificial Balance: Restoration of the Vestibulo-Ocular Reflex in Humans with a Prototype Vestibular Neuroprosthesis. <i>Frontiers in Neurology</i> , 2014, 5, 66.	1.1	80
24	RELICA: A method for estimating the reliability of independent components. <i>NeuroImage</i> , 2014, 103, 391-400.	2.1	76
25	Advanced Neurotechnologies for the Restoration of Motor Function. <i>Neuron</i> , 2020, 105, 604-620.	3.8	69
26	Engagement of the Rat Hindlimb Motor Cortex across Natural Locomotor Behaviors. <i>Journal of Neuroscience</i> , 2016, 36, 10440-10455.	1.7	60
27	Chronic multichannel neural recordings from soft regenerative microchannel electrodes during gait. <i>Scientific Reports</i> , 2015, 5, 14363.	1.6	59
28	Focal release of neurotrophic factors by biodegradable microspheres enhance motor and sensory axonal regeneration in vitro and in vivo. <i>Brain Research</i> , 2016, 1636, 93-106.	1.1	51
29	Combining robotic training and inactivation of the healthy hemisphere restores pre-stroke motor patterns in mice. <i>ELife</i> , 2017, 6, .	2.8	50
30	Corticospinal neuroprostheses to restore locomotion after spinal cord injury. <i>Neuroscience Research</i> , 2014, 78, 21-29.	1.0	47
31	Current Solutions and Future Trends for Robotic Prosthetic Hands. <i>Annual Review of Control, Robotics, and Autonomous Systems</i> , 2021, 4, 595-627.	7.5	46
32	Combined Rehabilitation Promotes the Recovery of Structural and Functional Features of Healthy Neuronal Networks after Stroke. <i>Cell Reports</i> , 2019, 28, 3474-3485.e6.	2.9	42
33	Tutorial: a computational framework for the design and optimization of peripheral neural interfaces. <i>Nature Protocols</i> , 2020, 15, 3129-3153.	5.5	40
34	Dynamic Functional Connectivity of Resting-State Spinal Cord fMRI Reveals Fine-Grained Intrinsic Architecture. <i>Neuron</i> , 2020, 108, 424-435.e4.	3.8	38
35	Bioelectronic medicine for the autonomic nervous system: clinical applications and perspectives. <i>Journal of Neural Engineering</i> , 2021, 18, 041002.	1.8	37
36	Stability against backward balance loss: Age-related modifications following slip-like perturbations of multiple amplitudes. <i>Gait and Posture</i> , 2017, 53, 207-214.	0.6	35

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37	EEG topographies provide subject-specific correlates of motor control. <i>Scientific Reports</i> , 2017, 7, 13229.	1.6	35
38	Phantom somatosensory evoked potentials following selective intraneural electrical stimulation in two amputees. <i>Clinical Neurophysiology</i> , 2018, 129, 1117-1120.	0.7	35
39	Multi-pronged neuromodulation intervention engages the residual motor circuitry to facilitate walking in a rat model of spinal cord injury. <i>Nature Communications</i> , 2021, 12, 1925.	5.8	35
40	Muscle synergies and spinal maps are sensitive to the asymmetry induced by a unilateral stroke. <i>Journal of NeuroEngineering and Rehabilitation</i> , 2015, 12, 39.	2.4	34
41	Compliant peripheral nerve interfaces. <i>Journal of Neural Engineering</i> , 2021, 18, 031001.	1.8	33
42	Implantable Neural Interfaces and Wearable Tactile Systems for Bidirectional Neuroprosthetics Systems. <i>Advanced Healthcare Materials</i> , 2019, 8, e1801345.	3.9	32
43	Neural signal recording and processing in somatic neuroprosthetic applications. A review. <i>Journal of Neuroscience Methods</i> , 2020, 337, 108653.	1.3	31
44	Hand Control With Invasive Feedback Is Not Impaired by Increased Cognitive Load. <i>Frontiers in Bioengineering and Biotechnology</i> , 2020, 8, 287.	2.0	31
45	Closed-loop control of trunk posture improves locomotion through the regulation of leg proprioceptive feedback after spinal cord injury. <i>Scientific Reports</i> , 2018, 8, 76.	1.6	30
46	Intrafascicular peripheral nerve stimulation produces fine functional hand movements in primates. <i>Science Translational Medicine</i> , 2021, 13, eabg6463.	5.8	30
47	Progress and challenges of implantable neural interfaces based on nature-derived materials. <i>Bioelectronic Medicine</i> , 2021, 7, 6.	1.0	29
48	The effects on biomechanics of walking and balance recovery in a novel pelvis exoskeleton during zero-torque control. <i>Robotica</i> , 2014, 32, 1317-1330.	1.3	28
49	Neuroprosthetic technologies to augment the impact of neurorehabilitation after spinal cord injury. <i>Annals of Physical and Rehabilitation Medicine</i> , 2015, 58, 232-237.	1.1	26
50	Design and Validation of a Modular One-To-Many Actuator for a Soft Wearable Exosuit. <i>Frontiers in Neurobotics</i> , 2019, 13, 39.	1.6	26
51	Experimental and Computational Study on Motor Control and Recovery After Stroke: Toward a Constructive Loop Between Experimental and Virtual Embodied Neuroscience. <i>Frontiers in Systems Neuroscience</i> , 2020, 14, 31.	1.2	23
52	Uncontrolled manifold hypothesis: Organization of leg joint variance in humans while walking in a wide range of speeds. <i>Human Movement Science</i> , 2018, 57, 227-235.	0.6	22
53	Functional imaging of rostrocaudal spinal activity during upper limb motor tasks. <i>NeuroImage</i> , 2019, 200, 590-600.	2.1	22
54	Towards reliable spinal cord fMRI: Assessment of common imaging protocols. <i>NeuroImage</i> , 2022, 250, 118964.	2.1	22

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55	Intersegmental coordination elicited by unexpected multidirectional slipping-like perturbations resembles that adopted during steady locomotion. <i>Journal of Neurophysiology</i> , 2016, 115, 728-740.	0.9	21
56	Pre-Impact Fall Detection: Optimal Sensor Positioning Based on a Machine Learning Paradigm. <i>PLoS ONE</i> , 2014, 9, e92037.	1.1	20
57	A hybrid computational model to predict chemotactic guidance of growth cones. <i>Scientific Reports</i> , 2015, 5, 11340.	1.6	19
58	Giuliano Vanghetti and the innovation of "cineplastic operations". <i>Neurology</i> , 2017, 89, 1627-1632.	1.5	19
59	Neuromuscular electrical stimulation restores upper limb sensory-motor functions and body representations in chronic stroke survivors. <i>Med</i> , 2022, 3, 58-74.e10.	2.2	19
60	Spinal Cord fMRI: A New Window into the Central Nervous System. <i>Neuroscientist</i> , 2023, 29, 715-731.	2.6	18
61	A modular strategy for next-generation upper-limb sensory-motor neuroprostheses. <i>Med</i> , 2021, 2, 912-937.	2.2	16
62	Post-Stroke Longitudinal Alterations of Inter-Hemispheric Correlation and Hemispheric Dominance in Mouse Pre-Motor Cortex. <i>PLoS ONE</i> , 2016, 11, e0146858.	1.1	16
63	Sensitivity to temporal parameters of intraneural tactile sensory feedback. <i>Journal of NeuroEngineering and Rehabilitation</i> , 2020, 17, 110.	2.4	15
64	High gamma response tracks different syntactic structures in homophonous phrases. <i>Scientific Reports</i> , 2020, 10, 7537.	1.6	15
65	Motor improvement estimation and task adaptation for personalized robot-aided therapy: a feasibility study. <i>BioMedical Engineering OnLine</i> , 2020, 19, 33.	1.3	14
66	Soft Embodiment for Engineering Artificial Limbs. <i>Trends in Cognitive Sciences</i> , 2020, 24, 965-968.	4.0	13
67	Computational approaches to decode grasping force and velocity level in upper-limb amputee from intraneural peripheral signals. <i>Journal of Neural Engineering</i> , 2021, 18, 055001.	1.8	12
68	Neuroprosthetics: Restoring multi-joint motor control. <i>Nature Biomedical Engineering</i> , 2017, 1, .	11.6	7
69	Preclinical upper limb neurorobotic platform to assess, rehabilitate, and develop therapies. <i>Science Robotics</i> , 2022, 7, eabk2378.	9.9	7
70	Nerve Repair: Biomimetic Architectures for Peripheral Nerve Repair: A Review of Biofabrication Strategies ( <i>Adv. Healthcare Mater.</i> 8/2018). <i>Advanced Healthcare Materials</i> , 2018, 7, 1870035.	3.9	6
71	Brain reactions to the use of sensorized hand prosthesis in amputees. <i>Brain and Behavior</i> , 2020, 10, e01734.	1.0	6
72	A data-driven polynomial approach to reproduce the scar tissue outgrowth around neural implants. <i>Journal of Materials Science: Materials in Medicine</i> , 2020, 31, 59.	1.7	6

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73	All-Polymer Printed Low-Cost Regenerative Nerve Cuff Electrodes. <i>Frontiers in Bioengineering and Biotechnology</i> , 2021, 9, 615218.	2.0	6
74	A machine learning framework to optimize optic nerve electrical stimulation for vision restoration. <i>Patterns</i> , 2021, 2, 100286.	3.1	6
75	Repeated exposure to tripping like perturbations elicits more precise control and lower toe clearance of the swinging foot during steady walking. <i>Human Movement Science</i> , 2021, 76, 102775.	0.6	5
76	MorphoSONIC: A morphologically structured intramembrane cavitation model reveals fiber-specific neuromodulation by ultrasound. <i>IScience</i> , 2021, 24, 103085.	1.9	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. <i>Journal of Neural Engineering</i> , 2021, 18, 056041.	1.8	4
79	Discrimination of Walking and Standing from Entropy of EEG Signals and Common Spatial Patterns. , 2020, , .		4
80	A One-Step Biofunctionalization Strategy of Electrospun Scaffolds Enables Spatially Selective Presentation of Biological Cues. <i>Advanced Materials Technologies</i> , 2020, 5, 2000269.	3.0	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. <i>Medical Engineering and Physics</i> , 2016, 38, 302-307.	0.8	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. <i>Sensors</i> , 2021, 21, 6739.	2.1	2
85	Polysaccharide Layer-by-Layer Coating for Polyimide-Based Neural Interfaces. <i>Micromachines</i> , 2022, 13, 692.	1.4	2
86	Understanding age-related modifications of motor control strategies. <i>Journal of NeuroEngineering and Rehabilitation</i> , 2008, 5, 26.	2.4	1
87	Guest Editorial - Neural engineering: An exciting, multi-disciplinary, and revolutionary research field. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2013, 21, 523-523.	2.7	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. <i>Neurological Sciences</i> , 2021, 42, 5369-5372.	0.9	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.	1.3	0