Maria Chiara Carrozza

List of Publications by Year
in descending order

137 papers	8,832 citations	44069 48 h-index	46799 89 g-index
145 all docs	145 docs citations	145 times ranked	6932 citing authors

#	Article	IF	Citations
1	Restoring Natural Sensory Feedback in Real-Time Bidirectional Hand Prostheses. Science Translational Medicine, 2014, 6, 222ra19.	12.4	805
2	On the Shared Control of an EMG-Controlled Prosthetic Hand: Analysis of Userâ€“Prosthesis Interaction. IEEE Transactions on Robotics, 2008, 24, 170-184.	10.3	409
3	Intention-Based EMG Control for Powered Exoskeletons. IEEE Transactions on Biomedical Engineering, 2012, 59, 2180-2190.	4.2	312
4	Design of a cybernetic hand for perception and action. Biological Cybernetics, 2006, 95, 629-644.	1.3	287
5	Biomechatronic Design and Control of an Anthropomorphic Artificial Hand for Prosthetic and Robotic Applications. IEEE/ASME Transactions on Mechatronics, 2007, 12, 418-429.	5.8	287
6	Intraneural stimulation elicits discrimination of textural features by artificial fingertip in intact and amputee humans. ELife, 2016, 5, e09148.	6.0	286
7	iCub: the design and realization of an open humanoid platform for cognitive and neuroscience research. Advanced Robotics, 2007, 21, 1151-1175.	1.8	234
8	NEUROExos: A Powered Elbow Exoskeleton for Physical Rehabilitation. IEEE Transactions on Robotics, 2013, 29, 220-235.	10.3	225
9	The SmartHand transradial prosthesis. Journal of NeuroEngineering and Rehabilitation, 2011, 8, 29.	4.6	209
10	Mechatronic Design and Characterization of the Index Finger Module of a Hand Exoskeleton for Post-Stroke Rehabilitation. IEEE/ASME Transactions on Mechatronics, 2012, 17, 884-894.	5.8	208
11	Online Myoelectric Control of a Dexterous Hand Prosthesis by Transradial Amputees. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2011, 19, 260-270.	4.9	201
12	Analysis and development of locomotion devices for the gastrointestinal tract. IEEE Transactions on Biomedical Engineering, 2002, 49, 613-616.	4.2	186
13	Micro-systems in biomedical applications. Journal of Micromechanics and Microengineering, 2000, 10, 235-244.	2.6	176
14	Powered Hip Exoskeletons Can Reduce the User's Hip and Ankle Muscle Activations During Walking. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2013, 21, 938-948.	4.9	169
15	Design and fabrication of a hybrid silicon three-axial force sensor for biomechanical applications. Sensors and Actuators A: Physical, 2005, 120, 370-382.	4.1	168
16	Oscillator-based assistance of cyclical movements: model-based and model-free approaches. Medical and Biological Engineering and Computing, 2011, 49, 1173-1185.	2.8	159
17	Assessing Mechanisms of Recovery During Robot-Aided Neurorehabilitation of the Upper Limb. Neurorehabilitation and Neural Repair, 2008, 22, 50-63.	2.9	136
18	Humanâ€“Robot Synchrony: Flexible Assistance Using Adaptive Oscillators. IEEE Transactions on Biomedical Engineering, 2011, 58, 1001-1012.	4.2	129

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19	A Miniature Vibrotactile Sensory Substitution Device for Multifingered Hand Prosthetics. IEEE Transactions on Biomedical Engineering, 2012, 59, 400-408.	4.2	127
20	Roughness Encoding for Discrimination of Surfaces in Artificial Active-Touch. IEEE Transactions on Robotics, 2011, 27, 522-533.	10.3	125
21	Towards a force-controlled microgripper for assembling biomedical microdevices. Journal of Micromechanics and Microengineering, 2000, 10, 271-276.	2.6	124
22	Synthetic and Bio-Artificial Tactile Sensing: A Review. Sensors, 2013, 13, 1435-1466.	3.8	124
23	Objectives, criteria and methods for the design of the SmartHand transradial prosthesis. Robotica, 2010, 28, 919-927.	1.9	119
24	Self-Alignment Mechanisms for Assistive Wearable Robots: A Kinetostatic Compatibility Method. IEEE Transactions on Robotics, 2013, 29, 236-250.	10.3	116
25	On the Use of Longitudinal Intrafascicular Peripheral Interfaces for the Control of Cybernetic Hand Prostheses in Amputees. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2008, 16, 453-472.	4.9	106
26	Principal components analysis based control of a multi-dof underactuated prosthetic hand. Journal of NeuroEngineering and Rehabilitation, 2010, 7, 16.	4.6	105
27	A capacitive tactile sensor array for surface texture discrimination. Microelectronic Engineering, 2011, 88, 1811-1813.	2.4	101
28	Development and Experimental Analysis of a Soft Compliant Tactile Microsensor for Anthropomorphic Artificial Hand. IEEE/ASME Transactions on Mechatronics, 2008, 13, 158-168.	5.8	98
29	Sensing Pressure Distribution on a Lower-Limb Exoskeleton Physical Human-Machine Interface. Sensors, 2011, 11, 207-227.	3.8	96
30	Automated detection of gait initiation and termination using wearable sensors. Medical Engineering and Physics, 2013, 35, 1713-1720.	1.7	92
31	Bio-inspired sensorization of a biomechatronic robot hand for the grasp-and-lift task. Brain Research Bulletin, 2008, 75, 785-795.	3.0	90
32	Real-time myoelectric control of a multi-fingered hand prosthesis using principal components analysis. Journal of NeuroEngineering and Rehabilitation, 2012, 9, 40.	4.6	88
33	Development of a bioinspired MEMS based capacitive tactile sensor for a robotic finger. Sensors and Actuators A: Physical, 2011, 165, 221-229.	4.1	87
34	Design of Artificial Hands: A Review. Springer Tracts in Advanced Robotics, 2014, , 219-246.	0.4	86
35	A Flexible Sensor Technology for the Distributed Measurement of Interaction Pressure. Sensors, 2013, 13, 1021-1045.	3.8	75
36	Miniaturized non-back-drivable mechanism for robotic applications. Mechanism and Machine Theory, 2010, 45, 1395-1406.	4.5	74

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37	Providing Time-Discrete Gait Information by Wearable Feedback Apparatus for Lower-Limb Amputees: Usability and Functional Validation. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2015, 23, 250-257.	4.9	74
38	Upper Limb Robotic Rehabilitation After Stroke: A Multicenter, Randomized Clinical Trial. Journal of Neurologic Physical Therapy, 2020, 44, 3-14.	1.4	73
39	Design and Experimental Characterization of a Shoulder-Elbow Exoskeleton With Compliant Joints for Post-Stroke Rehabilitation. IEEE/ASME Transactions on Mechatronics, 2019, 24, 1485-1496.	5.8	69
40	A Simple Robotic System for Neurorehabilitation. Autonomous Robots, 2005, 19, 271-284.	4.8	67
41	Measuring humanâ€“robot interaction on wearable robots: A distributed approach. Mechatronics, 2011, 21, 1123-1131.	3.3	64
42	A Wearable Biomechatronic Interface for Controlling Robots with Voluntary Foot Movements. IEEE/ASME Transactions on Mechatronics, 2007, 12, 1-11.	5.8	58
43	Artificial Roughness Encoding with a Bio-inspired MEMS-based Tactile Sensor Array. Sensors, 2009, 9, 3161-3183.	3.8	58
44	Robotics as a future and emerging technology biomimetics, cybernetics, and neuro-robotics in european projects. IEEE Robotics and Automation Magazine, 2005, 12, 29-45.	2.0	57
45	Real-Time Estimate of Velocity and Acceleration of Quasi-Periodic Signals Using Adaptive Oscillators. IEEE Transactions on Robotics, 2013, 29, 783-791.	10.3	56
46	A Mechatronic System for Robot-Mediated Hand Telerehabilitation. IEEE/ASME Transactions on Mechatronics, 2015, 20, 1753-1764.	5.8	56
47	Towards Humanlike Social Touch for Sociable Robotics andÂProsthetics: Comparisons onÂtheÂCompliance, Conformance and Hysteresis of Synthetic and Human Fingertip Skins. International Journal of Social Robotics, 2009, 1, 29-40.	4.6	53
48	Design and fabrication of an electrostatically driven microgripper for blood vessel manipulation. Microelectronic Engineering, 2006, 83, 1651-1654.	2.4	50
49	Roughness Encoding in Human and Biomimetic Artificial Touch: Spatiotemporal Frequency Modulation and Structural Anisotropy of Fingerprints. Sensors, 2011, 11, 5596-5615.	3.8	46
50	Haptic-assistive technologies for audition and vision sensory disabilities. Disability and Rehabilitation: Assistive Technology, 2018, 13, 394-421.	2.2	46
51	Investigation on calibration methods for multi-axis, linear and redundant force sensors. Measurement Science and Technology, 2007, 18, 623-631.	2.6	45
52	Kinematics and design of a portable and wearable exoskeleton for hand rehabilitation. , 2013, 2013, 6650414.		45
53	A Novel Concept for a Prosthetic Hand With a Bidirectional Interface: A Feasibility Study. IEEE Transactions on Biomedical Engineering, 2009, 56, 2739-2743.	4.2	44
54	Adaptive oscillators with human-in-the-loop: Proof of concept for assistance and rehabilitation. , 2010, , .		43

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55	Title is missing!. Journal of Medical and Biological Engineering, 2010, 30, 399.	1.8	42
56	Learning tactile skills through curious exploration. Frontiers in Neurorobotics, 2012, 6, 6.	2.8	41
57	NEUROExos: A variable impedance powered elbow exoskeleton. , 2011, , .		40
58	Transfer of tactile input from an artificial hand to the forearm: experiments in amputees and able-bodied volunteers. Disability and Rehabilitation: Assistive Technology, 2013, 8, 249-254.	2.2	39
59	Development and in Vitro Testing of a Miniature Robotic System for Computer-Assisted Colonoscopy. Computer Aided Surgery, 1999, 4, 1-14.	1.8	38
60	Upper Limb Robot-Assisted Therapy in Chronic and Subacute Stroke Patients. American Journal of Physical Medicine and Rehabilitation, 2013, 92, e26-e37.	1.4	38
61	Slippage Detection with Piezoresistive Tactile Sensors. Sensors, 2017, 17, 1844.	3.8	38
62	Effects of proximal and distal robot-assisted upper limb rehabilitation on chronic stroke recovery. NeuroRehabilitation, 2013, 33, 33-39.	1.3	37
63	Oscillator-based walking assistance: A model-free approach. , 2011, 2011, 5975352.		34
64	Upper limb spasticity reduction following active training: A robot-mediated study in patients with chronic hemiparesis. Journal of Rehabilitation Medicine, 2010, 42, 279-281.	1.1	33
65	On the design, development and experimentation of the ASTRO assistive robot integrated in smart environments. , 2013, , .		33
66	Functional Design of a Powered Elbow Orthosis Toward its Clinical Employment. IEEE/ASME Transactions on Mechatronics, 2016, 21, 1880-1891.	5.8	33
67	A Wearable System Based on Flexible Sensors for Unobtrusive Respiratory Monitoring in Occupational Settings. IEEE Sensors Journal, 2021, 21, 14369-14378.	4.7	32
68	A SMA-actuated miniature pressure regulator for a miniature robot for colonoscopy. Sensors and Actuators A: Physical, 2003, 105, 119-131.	4.1	31
69	A sensorless torque control for Antagonistic Driven Compliant Joints. Mechatronics, 2010, 20, 355-367.	3.3	30
70	Development of a Bioinstrumentation System in the Interaction between a Human and a Robot. , 2006, , .		29
71	Feasibility and Efficacy of the Pulmonary Rehabilitation Program in a Rehabilitation Center. Journal of Cardiopulmonary Rehabilitation and Prevention, 2020, 40, 205-208.	2.1	27
72	A mechatronic platform for human touch studies. Mechatronics, 2011, 21, 604-613.	3.3	26

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73	On the design of ergonomic wearable robotic devices for motion assistance and rehabilitation. , 2012, 2012, 6124-7.		26
74	Micromechatronics in surgery. Transactions of the Institute of Measurement and Control, 2003, 25, 309-327.	1.7	24
75	Bio-inspired mechanical design of a tendon-driven dexterous prosthetic hand. , 2010, 2010, 499-502.		24
76	Soft-neuromorphic artificial touch for applications in neuro-robotics. , 2012, , .		24
77	The neuro-robotics paradigm: NEURARM, NEUROExos, HANDEXOS. , 2009, 2009, 2430-3.		23
78	Encapsulation of Piezoelectric Transducers for Sensory Augmentation and Substitution with Wearable Haptic Devices. Micromachines, 2017, 8, 270.	2.9	23
79	DESIGN AND DEVELOPMENT OF FIVE-FINGERED HANDS FOR A HUMANOID EMOTION EXPRESSION ROBOT. International Journal of Humanoid Robotics, 2007, 04, 181-206.	1.1	22
80	A bio-inspired predictive sensory-motor coordination scheme forÂrobot reaching and preshaping. Autonomous Robots, 2008, 25, 85-101.	4.8	22
81	Preliminary evaluation of SensHand V1 in assessing motor skills performance in Parkinson disease. , 2013, 2013, 6650466.		22
82	Biomechanical Characterization of Needle Piercing Into Peripheral Nervous Tissue. IEEE Transactions on Biomedical Engineering, 2006, 53, 2373-2386.	4.2	21
83	NEUROExos: A powered elbow orthosis for post-stroke early neurorehabilitation. , 2013, 2013, 342-5.		21
84	A biomimetic MEMS-based tactile sensor array with fingerprints integrated in a robotic fingertip for artificial roughness encoding. , 2009, , .		20
85	Influence of the weight actions of the hand prosthesis on the performance of pattern recognition based myoelectric control: Preliminary study. , 2011, 2011, 1620-3.		20
86	Mechanical Design of Emotion Expression Humanoid Robot WE-4RII. , 2006, , 255-262.		20
87	The Uncanny Valley and the Search for Human Skin-Like Materials for a Prosthetic Fingertip. , 2006, , .		19
88	Vibrotactile sensory substitution in multi-fingered hand prostheses: Evaluation studies. , 2011, 2011, 5975477.		19
89	Bioinspired Fingertip for Anthropomorphic Robotic Hands. Applied Bionics and Biomechanics, 2014, 11, 25-38.	1.1	19
90	Neuromorphic Vibrotactile Stimulation of Fingertips for Encoding Object Stiffness in Telepresence Sensory Substitution and Augmentation Applications. Sensors, 2018, 18, 261.	3.8	18

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91	Cognitive reserve as a useful variable to address robotic or conventional upper limb rehabilitation treatment after stroke: a multicentre study of the Fondazione Don Carlo Gnocchi. European Journal of Neurology, 2020, 27, 392-398.	3.3	18
92	Controlling Assistive Machines in Paralysis Using Brain Waves and Other Biosignals. Advances in Human-Computer Interaction, 2013, 2013, 1-9.	2.8	17
93	Ambient Assisted Living and ageing: Preliminary results of RITA project. , 2012, 2012, 5823-6.		16
94	Distinct neural patterns enable grasp types decoding in monkey dorsal premotor cortex. Journal of Neural Engineering, 2014, 11, 066011.	3.5	16
95	Feasibility of subacute rehabilitation for mechanically ventilated patients with COVID-19 disease: a retrospective case series. International Journal of Rehabilitation Research, 2021, 44, 77-81.	1.3	16
96	Characterization of the NEURARM bio-inspired joint position and stiffness open loop controller. , 2008, , .		15
97	Predictors of Function, Activity, and Participation of Stroke Patients Undergoing Intensive Rehabilitation: A Multicenter Prospective Observational Study Protocol. Frontiers in Neurology, 2021, 12, 632672.	2.4	15
98	Polymer sensorised microgrippers using SMA actuation. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	14
99	Decoding of individuated finger movements using surface EMG and input optimization applying a genetic algorithm. , 2011, 2011, 1608-11.		14
100	Real-time estimate of period derivatives using adaptive oscillators: Application to impedance-based walking assistance. , 2012, , .		14
101	Electromagnetic wobble micromotor for microrobots actuation. Sensors and Actuators A: Physical, 2010, 161, 234-244.	4.1	13
102	A first step toward a pervasive and smart ZigBee sensor system for assistance and rehabilitation. , 2009, , .		12
103	A robotic model to investigate human motor control. Biological Cybernetics, 2011, 105, 1-19.	1.3	12
104	Phase-II Clinical Validation of a Powered Exoskeleton for the Treatment of Elbow Spasticity. Frontiers in Neuroscience, 2017, 11, 261.	2.8	12
105	Influence of Cognitive Impairment on the Recovery of Subjects with Subacute Stroke Undergoing Upper Limb Robotic Rehabilitation. Brain Sciences, 2021, 11, 587.	2.3	12
106	Data-driven prediction of decannulation probability and timing in patients with severe acquired brain injury. Computer Methods and Programs in Biomedicine, 2021, 209, 106345.	4.7	12
107	Design and Development of a Novel Robotic Platform for Neuro-Robotics Applications: the NEURobotics ARM (NEURARM). Advanced Robotics, 2008, 22, 3-37.	1.8	11
108	Design and validation of a miniaturized SEA transmission system. Mechatronics, 2018, 49, 149-156.	3.3	11

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109	The NEURARM: towards a Platform for joint Neuroscience Experiments on Human Motion Control Theories. , 2007, , .		10
110	Development of a Biomimetic MEMS based Capacitive Tactile Sensor. Procedia Chemistry, 2009, 1, 124-127.	0.7	10
111	Improving Domiciliary Robotic Services by Integrating the ASTRO Robot in an AmI Infrastructure. Springer Tracts in Advanced Robotics, 2014, , 267-282.	0.4	10
112	On the Development of a Biomechatronic System to Record Tendon Sliding Movements. IEEE Transactions on Biomedical Engineering, 2005, 52, 1110-1119.	4.2	9
113	Assistive Technology: a New Approach to Evaluation. , 2007, , .		9
114	Identification of Slippage on Naturalistic Surfaces via Wavelet Transform of Tactile Signals. IEEE Sensors Journal, 2019, 19, 1260-1268.	4.7	8
115	Poststroke shoulder pain in subacute patients and its correlation with upper limb recovery after robotic or conventional treatment: A secondary analysis of a multicenter randomized controlled trial. International Journal of Stroke, 2021, 16, 396-405.	5.9	7
116	A meta-learning algorithm for respiratory flow prediction from FBG-based wearables in unrestrained conditions. Artificial Intelligence in Medicine, 2022, 130, 102328.	6.5	7
117	A Novel Method for Assessing Sense of Body Ownership Using Electroencephalography. IEEE Transactions on Biomedical Engineering, 2011, 58, 12-15.	4.2	6
118	Development of an Experimental Set-Up for Providing Lower-Limb Amputees with an Augmenting Feedback. Biosystems and Biorobotics, 2013, , 321-325.	0.3	6
119	Neuromorphic Artificial Sense of Touch: Bridging Robotics and Neuroscience. Springer Proceedings in Advanced Robotics, 2018, , 617-630.	1.3	6
120	RobotCub implementation of real-time least-square fitting of ellipses. , 2008, , .		5
121	Early recognition of gait initiation and termination using wearable sensors. , 2012, , .		5
122	Effects of upper limb robot-assisted therapy on motor recovery of subacute stroke patients: A kinematic approach. , 2013, 2013, 6650503.		5
123	Endoscopic Tactile Capsule for Non-Polypoid Colorectal Tumour Detection. IEEE Transactions on Medical Robotics and Bionics, 2021, 3, 64-73.	3.2	5
124	Neuro-robotics Paradigm for Intelligent Assistive Technologies. Springer Tracts in Advanced Robotics, 2015, , 1-40.	0.4	4
125	Age is negatively associated with upper limb recovery after conventional but not robotic rehabilitation in patients with stroke: a secondary analysis of a randomized-controlled trial. Journal of Neurology, 2021, 268, 474-483.	3.6	4
126	Guest Editorial Special Issue on Rehabilitation Robotics: From Bench to Bedside to Community Care. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2007, 15, 325-326.	4.9	3

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127	Relevance of Series-Elastic actuation in rehabilitation and assistance robotic: Two cases of study. , 2015, , .		3
128	Robotic endoscopic capsule for closed-loop force-based control and safety strategies. , 2017, , .		3
129	Tactile sensing with gesture-controlled collaborative robot. , 2020, , .		3
130	Guest Editorial: Special Issue on Rehabilitation Robotics. Autonomous Robots, 2003, 15, 5-6.	4.8	2
131	Influence of the skin thickness on tactile shape discrimination. , 2012, , .		2
132	Predicting SARS-CoV-2 infection duration at hospital admission:a deep learning solution. Medical and Biological Engineering and Computing, 2022, 60, 459-470.	2.8	2
133	Development of an innovative and compliant robotic wrist. , 2008, , .		1
134	Modification of Pointing Performance in Altered Gravitational Environments. Microgravity Science and Technology, 2010, 22, 123-128.	1.4	1
135	Respiratory rate monitoring of video terminal operators based on fiber optic technology. , 2021, , .		1
136	Our Friend the Robot. Biosystems and Biorobotics, 2019, , 41-52.	0.3	1
137	On the Way to Robotics. Biosystems and Biorobotics, 2019, , 13-26.	0.3	0