Matteo Bianchi

List of Publications by Year
in descending order

132 papers	2,840 citations	218677 26 h-index	254184 43 g-index
138 all docs	138 docs citations	138 times ranked	2229 citing authors

#	Article	IF	Citations
1	Human-Robot Collaboration (HRC) Technologies for Reducing Work-Related Musculoskeletal Diseases in Industry 4.0. Lecture Notes in Networks and Systems, 2022, , 335-342.	0.7	5
2	The SoftPro Wearable System for Grasp Compensation in Stroke Patients. Biosystems and Biorobotics, 2022, , 363-367.	0.3	1
3	HaptiTrack: A Novel Device for theÂEvaluation of Tactile Sensitivity in Active and in Passive Tasks. Biosystems and Biorobotics, 2022, , 617-621.	0.3	0
4	Functional Analysis of Upper-Limb Movements in the Cartesian Domain. Biosystems and Biorobotics, 2022, , 339-343.	0.3	0
5	A User-Centered Approach to Artificial Sensory Substitution for Blind People Assistance. Biosystems and Biorobotics, 2022, , 599-603.	0.3	0
6	Learning to Prevent Grasp Failure with Soft Hands: From Online Prediction to Dualâ€Arm Grasp Recovery. Advanced Intelligent Systems, 2022, 4, 2100146.	6.1	5
7	Multi-Cue Haptic Guidance Through Wearables for Enhancing Human Ergonomics. IEEE Transactions on Haptics, 2022, 15, 115-120.	2.7	2
8	Learning With Few Examples the Semantic Description of Novel Human-Inspired Grasp Strategies From RGB Data. IEEE Robotics and Automation Letters, 2022, 7, 2573-2580.	5.1	2
9	Optimal Reconstruction of Human Motion From Scarce Multimodal Data. IEEE Transactions on Human-Machine Systems, 2022, 52, 833-842.	3.5	3
10	A low-dimensional representation of arm movements and hand grip forces in post-stroke individuals. Scientific Reports, 2022, 12, 7601.	3.3	3
11	BRL/Pisa/IIT SoftHand: A Low-Cost, 3D-Printed, Underactuated, Tendon-Driven Hand With Soft and Adaptive Synergies. IEEE Robotics and Automation Letters, 2022, 7, 8745-8751.	5.1	5
12	Integrating Wearable Haptics and Obstacle Avoidance for the Visually Impaired in Indoor Navigation: A User-Centered Approach. IEEE Transactions on Haptics, 2021, 14, 109-122.	2.7	33
13	Modeling Human Motor Skills to Enhance Robotsâ€™ Physical Interaction. Springer Proceedings in Advanced Robotics, 2021, , 116-126.	1.3	0
14	A Novel Device Decoupling Tactile Slip and Hand Motion in Reaching Tasks: The HaptiTrack Device. IEEE Transactions on Haptics, 2021, 14, 1-1.	2.7	4
15	Toward brainâ€“heart computer interfaces: a study on the classification of upper limb movements using multisystem directional estimates. Journal of Neural Engineering, 2021, 18, 046002.	3.5	12
16	Wearable Integrated Soft Haptics in a Prosthetic Socket. IEEE Robotics and Automation Letters, 2021, 6, 1785-1792.	5.1	6
17	Integration of a Passive Exoskeleton and a Robotic Supernumerary Finger for Grasping Compensation in Chronic Stroke Patients: The SoftPro Wearable System. Frontiers in Robotics and AI, 2021, 8, 661354.	3.2	6
18	U-Limb: A multi-modal, multi-center database on arm motion control in healthy and post-stroke conditions. GigaScience, 2021, 10, .	6.4	18

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19	Controlling Hand Movements Relying on Tactile Illusions: A Model Predictive Control Framework. , 2021, , .		1
20	Enhancing the Localization of Uterine Leiomyomas Through Cutaneous Softness Rendering for Robot-Assisted Surgical Palpation Applications. IEEE Transactions on Haptics, 2021, 14, 503-512.	2.7	5
21	The interaction between motion and texture in the sense of touch. Journal of Neurophysiology, 2021, 126, 1375-1390.	1.8	20
22	Understanding Human Manipulation With the Environment: A Novel Taxonomy for Video Labelling. IEEE Robotics and Automation Letters, 2021, 6, 6537-6544.	5.1	8
23	Towards integrated tactile sensorimotor control in anthropomorphic soft robotic hands. , 2021, , .		13
24	Editorial: On the Planning, Control, and Perception of Soft Robotic End-Effectors. Frontiers in Robotics and AI, 2021, 8, 795863.	3.2	1
25	Characterization of upper limb movement-related EEG dynamics through fractional integrated autoregressive modeling. , 2021, 2021, 5987-5990.		1
26	Classifying Affective Haptic Stimuli through Gender-Specific Heart Rate Variability Nonlinear Analysis. IEEE Transactions on Affective Computing, 2020, 11, 459-469.	8.3	8
27	A technical framework for human-like motion generation with autonomous anthropomorphic redundant manipulators. , 2020, , .		11
28	Control Architecture for Human-Like Motion With Applications to Articulated Soft Robots. Frontiers in Robotics and AI, 2020, 7, 117.	3.2	5
29	Modeling Previous Trial Effect in Human Manipulation through Iterative Learning Control. Advanced Intelligent Systems, 2020, 2, 1900074.	6.1	1
30	The Sensor-Based Biomechanical Risk Assessment at the Base of the Need for Revising of Standards for Human Ergonomics. Sensors, 2020, 20, 5750.	3.8	31
31	Exploiting upper-limb functional principal components for human-like motion generation of anthropomorphic robots. Journal of NeuroEngineering and Rehabilitation, 2020, 17, 63.	4.6	26
32	Smart Collaborative Systems for Enabling Flexible and Ergonomic Work Practices [Industry Activities]. IEEE Robotics and Automation Magazine, 2020, 27, 169-176.	2.0	40
33	On the Role of Lateral Force in Texture-Induced Motion Bias During Reaching Tasks. IEEE Transactions on Haptics, 2020, 13, 233-238.	2.7	2
34	To grasp or not to grasp: an end-to-end deep-learning approach for predicting grasping failures in soft hands. , 2020, , .		7
35	Design and Validation of the <i>Readable</i> Device: A Single-Cell Electromagnetic Refreshable Braille Display. IEEE Transactions on Haptics, 2020, 13, 239-245.	2.7	27
36	Kineto-Dynamic Modeling of Human Upper Limb for Robotic Manipulators and Assistive Applications. , 2020, , 23-51.		0

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37	Iterative Learning Control as a Framework for Human-Inspired Control with Bio-mimetic Actuators. Lecture Notes in Computer Science, 2020, , 12-16.	1.3	1
38	A Miniaturised Neuromorphic Tactile Sensor integrated with an Anthropomorphic Robot Hand. , 2020, , .		5
39	HapPro: A Wearable Haptic Device for Proprioceptive Feedback. IEEE Transactions on Biomedical Engineering, 2019, 66, 138-149.	4.2	36
40	On the role of wearable haptics for force feedback in teleimpedance control for dual-arm robotic teleoperation. , 2019, , .		19
41	Robotic manipulation and the role of the task in the metric of success. Nature Machine Intelligence, 2019, 1, 340-346.	16.0	22
42	On the Time-Invariance Properties of Upper Limb Synergies. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2019, 27, 1397-1406.	4.9	21
43	Spatially Separating Haptic Guidance From Task Dynamics Through Wearable Devices. IEEE Transactions on Haptics, 2019, 12, 581-593.	2.7	20
44	Relaying the High-Frequency Contents of Tactile Feedback to Robotic Prosthesis Users: Design, Filtering, Implementation, and Validation. IEEE Robotics and Automation Letters, 2019, 4, 926-933.	5.1	13
45	A Novel Skin-Stretch Haptic Device for Intuitive Control of Robotic Prostheses and Avatars. IEEE Robotics and Automation Letters, 2019, 4, 1572-1579.	5.1	26
46	Brain Dynamics Induced by Pleasant/Unpleasant Tactile Stimuli Conveyed by Different Fabrics. IEEE Journal of Biomedical and Health Informatics, 2019, 23, 2417-2427.	6.3	12
47	Touch as an auxiliary proprioceptive cue for movement control. Science Advances, 2019, 5, eaaw3121.	10.3	22
48	Tailor-Made Hand Exoskeletons at the University of Florence: From Kinematics to Mechatronic Design. Machines, 2019, 7, 22.	2.2	19
49	Wearable haptic interfaces for applications in gynecologic robotic surgery: a proof of concept in robotic myomectomy. Journal of Robotic Surgery, 2019, 13, 585-588.	1.8	6
50	Skin Stretch Haptic Feedback to Convey Closure Information in Anthropomorphic, Under-Actuated Upper Limb Soft Prostheses. IEEE Transactions on Haptics, 2019, 12, 508-520.	2.7	35
51	Editorial: Mapping Human Sensory-Motor Skills for Manipulation Onto the Design and Control of Robots. Frontiers in Neurorobotics, 2019, 13, 1.	2.8	26
52	Assessment of muscle fatigue during isometric contraction using autonomic nervous system correlates. Biomedical Signal Processing and Control, 2019, 51, 42-49.	5.7	24
53	Learning From Humans How to Grasp: A Data-Driven Architecture for Autonomous Grasping With Anthropomorphic Soft Hands. IEEE Robotics and Automation Letters, 2019, 4, 1533-1540.	5.1	65
54	Predicting Object-Mediated Gestures From Brain Activity: An EEG Study on Gender Differences. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2019, 27, 411-418.	4.9	19

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55	The Role of Haptic Stimuli on Affective Reading: a Pilot Study. , 2019, 2019, 4938-4941.		4
56	Contact with Sliding over a Rotating Ridged Surface: the Turntable Illusion. , 2019, , .		2
57	A functional analysis-based approach to quantify upper limb impairment level in chronic stroke patients: a pilot study. , 2019, 2019, 4198-4204.		16
58	A Synergistic Behavior Underpins Human Hand Grasping Force Control During Environmental Constraint Exploitation. Biosystems and Biorobotics, 2019, , 67-71.	0.3	0
59	Efficient Walking Gait Generation via Principal Component Representation of Optimal Trajectories: Application to a Planar Biped Robot With Elastic Joints. IEEE Robotics and Automation Letters, 2018, 3, 2299-2306.	5.1	21
60	Simplifying Telerobotics: Wearability and Teleimpedance Improves Human-Robot Interactions in Teleoperation. IEEE Robotics and Automation Magazine, 2018, 25, 77-88.	2.0	38
61	W-FYD: A Wearable Fabric-Based Display for Haptic Multi-Cue Delivery and Tactile Augmented Reality. IEEE Transactions on Haptics, 2018, 11, 304-316.	2.7	36
62	EEG Complexity Maps to Characterise Brain Dynamics during Upper Limb Motor Imagery. , 2018, 2018, 3060-3063.		7
63	DeepDynamicHand: A Deep Neural Architecture for Labeling Hand Manipulation Strategies in Video Sources Exploiting Temporal Information. Frontiers in Neurorobotics, 2018, 12, 86.	2.8	3
64	EEG Processing to Discriminate Transitive-Intransitive Motor Imagery Tasks: Preliminary Evidences using Support Vector Machines. , 2018, 2018, 231-234.		3
65	Comparison of Three Hand Pose Reconstruction Algorithms Using Inertial and Magnetic Measurement Units. , 2018, , .		4
66	ExoSense: Measuring Manipulation in a Wearable Manner. , 2018, , .		6
67	Touch-Based Grasp Primitives for Soft Hands: Applications to Human-to-Robot Handover Tasks and Beyond. , 2018, , .		18
68	Towards a Technology-Based Assessment of Sensory-Motor Pathological States Through Tactile Illusions. , 2018, , .		3
69	The SoftHand Pro: Functional evaluation of a novel, flexible, and robust myoelectric prosthesis. PLoS ONE, 2018, 13, e0205653.	2.5	62
70	Incrementality and Hierarchies in the Enrollment of Multiple Synergies for Grasp Planning. IEEE Robotics and Automation Letters, 2018, 3, 2686-2693.	5.1	23
71	EEG oscillations during caressâ€like affective haptic elicitation. Psychophysiology, 2018, 55, e13199.	2.4	15
72	Separating haptic guidance from task dynamics: A practical solution via cutaneous devices. , 2018, , .		9

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73	Decentralized Trajectory Tracking Control for Soft Robots Interacting With the Environment. IEEE Transactions on Robotics, 2018, 34, 924-935.	10.3	47
74	Mechatronic designs for a robotic hand to explore human body experience and sensory-motor skills: a Delphi study. Advanced Robotics, 2018, 32, 670-680.	1.8	6
75	Controlling Soft Robots: Balancing Feedback and Feedforward Elements. IEEE Robotics and Automation Magazine, 2017, 24, 75-83.	2.0	104
76	Design of an under-actuated wrist based on adaptive synergies. , 2017, , .		18
77	On the Role of Affective Properties in Hedonic and Discriminant Haptic Systems. International Journal of Social Robotics, 2017, 9, 87-95.	4.6	12
78	From humans to robots: The role of cutaneous impairment in human environmental constraint exploitation to inform the design of robotic hands. , 2017, , .		5
79	The SoftHand Pro-H: A Hybrid Body-Controlled, Electrically Powered Hand Prosthesis for Daily Living and Working. IEEE Robotics and Automation Magazine, 2017, 24, 87-101.	2.0	27
80	The Rice Haptic Rocker: Skin stretch haptic feedback with the Pisa/IIT SoftHand. , 2017, , .		57
81	Recognition of affective haptic stimuli conveyed by different fabrics sing EEG-based sparse SVM. , 2017, , .		4
82	Unvealing the Principal Modes of Human Upper Limb Movements through Functional Analysis. Frontiers in Robotics and AI, 2017, 4, .	3.2	38
83	A Humanâ€"Robot Interaction Perspective on Assistive and Rehabilitation Robotics. Frontiers in Neurorobotics, 2017, 11, 24.	2.8	102
84	Postural Hand Synergies during Environmental Constraint Exploitation. Frontiers in Neurorobotics, 2017, 11, 41.	2.8	56
85	SoftHand at the CYBATHLON: a userâ€™s experience. Journal of NeuroEngineering and Rehabilitation, 2017, 14, 124.	4.6	18
86	Tactile slip and hand displacement: Bending hand motion with tactile illusions. , 2017, , .		11
87	Synergy-Driven Performance Enhancement ofÂVision-Based 3D Hand Pose Reconstruction. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2017, , 328-336.	0.3	0
88	A Synergy-Based Optimally Designed Sensing Glove for Functional Grasp Recognition. Sensors, 2016, 16, 811.	3.8	29
89	Assessment of Myoelectric Controller Performance and Kinematic Behavior of a Novel Soft Synergy-Inspired Robotic Hand for Prosthetic Applications. Frontiers in Neurorobotics, 2016, 10, 11.	2.8	20
90	A Multi-Modal Sensing Glove for Human Manual-Interaction Studies. Electronics (Switzerland), 2016, 5, 42.	3.1	34

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91	A Fabric-Based Approach for Wearable Haptics. Electronics (Switzerland), 2016, 5, 44.	3.1	25
92	Towards a novel generation of haptic and robotic interfaces: Integrating affective physiology in human-robot interaction. , 2016, , .		8
93	Recent Data Sets on Object Manipulation: A Survey. Big Data, 2016, 4, 197-216.	3.4	29
94	The Change in Fingertip Contact Area as a Novel Proprioceptive Cue. Current Biology, 2016, 26, 1159-1163.	3.9	60
95	Tactile Augmented Reality for Arteries Palpation in Open Surgery Training. Lecture Notes in Computer Science, 2016, , 186-197.	1.3	13
96	Forceâ€"Velocity Assessment of Caress-Like Stimuli Through the Electrodermal Activity Processing: Advantages of a Convex Optimization Approach. IEEE Transactions on Human-Machine Systems, 2016, , 1-10.	3.5	16
97	On the pleasantness of a haptic stimulation: How different textures can be recognized through heart rate variability nonlinear analysis. , 2016, 2016, 3560-3563.		4
98	Influence of force feedback on grasp force modulation in prosthetic applications: A preliminary study. , 2016, 2016, 5439-5442.		30
99	Inhomogeneous Point-Processes to Instantaneously Assess Affective Haptic Perception through Heartbeat Dynamics Information. Scientific Reports, 2016, 6, 28567.	3.3	13
100	A Wearable Fabric-based display for haptic multi-cue delivery. , 2016, , .		34
101	Towards a synergy framework across neuroscience and robotics: Lessons learned and open questions. Reply to comments on: â€œHand synergies: Integration of robotics and neuroscience for understanding the control of biological and artificial handsâ€. Physics of Life Reviews, 2016, 17, 54-60.	2.8	13
102	ThimbleSense: A Fingertip-Wearable Tactile Sensor for Grasp Analysis. IEEE Transactions on Haptics, 2016, 9, 121-133.	2.7	42
103	Hand synergies: Integration of robotics and neuroscience for understanding the control of biological and artificial hands. Physics of Life Reviews, 2016, 17, 1-23.	2.8	191
104	The Motor Control of Hand Movements in the Human Brain: Toward the Definition of a Cortical Representation of Postural Synergies. Springer Series on Touch and Haptic Systems, 2016, , 41-60.	0.3	0
105	Sensorymotor Synergies: Fusion of Cutaneous Touch and Proprioception in the Perceived Hand Kinematics. Springer Series on Touch and Haptic Systems, 2016, , 87-98.	0.3	5
106	A synergy-based hand control is encoded in human motor cortical areas. ELife, 2016, 5, .	6.0	98
107	Synergy-Based Optimal Sensing Techniques for Hand Pose Reconstruction. Springer Series on Touch and Haptic Systems, 2016, , 259-283.	0.3	0
108	A novel tactile display for softness and texture rendering in tele-operation tasks. , 2015, , .		5

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109	Electroencephalographic spectral correlates of caress-like affective haptic stimuli. , 2015, 2015, 4733-6.		3
110	Design and realization of the CUFF - clenching upper-limb force feedback wearable device for distributed mechano-tactile stimulation of normal and tangential skin forces. , 2015, , .		77
111	Electrodermal activity analysis during affective haptic elicitation. , 2015, 2015, 5777-80.		13
112	A Finite element model of tactile flow for softness perception. , 2015, 2015, 2430-3.		4
113	Characterization of nonlinear finger pad mechanics for tactile rendering. , 2015, , .		12
114	Design and Characterization of a Fabric-Based Softness Display. IEEE Transactions on Haptics, 2015, 8, 152-163.	2.7	35
115	Gender-specific velocity recognition of caress-like stimuli through nonlinear analysis of Heart Rate Variability. , 2015, 2015, 298-301.		10
116	Three-digit grasp haptic device with variable contact stiffness for rehabilitation and human grasping studies. , 2014, , .		5
117	Design and preliminary affective characterization of a novel fabric-based tactile display. , 2014, , .		33
118	Exploring Teleimpedance and Tactile Feedback for Intuitive Control of the Pisa/IIT SoftHand. IEEE Transactions on Haptics, 2014, 7, 203-215.	2.7	107
119	A Change in the Fingertip Contact Area Induces an Illusory Displacement of the Finger. Lecture Notes in Computer Science, 2014, , 72-79.	1.3	10
120	Synergy-based hand pose sensing: Reconstruction enhancement. International Journal of Robotics Research, 2013, 32, 396-406.	8.5	34
121	Characterization and Psychophysical Studies of an Air-Jet Lump Display. IEEE Transactions on Haptics, 2013, 6, 156-166.	2.7	24
122	Synergy-based hand pose sensing: Optimal glove design. International Journal of Robotics Research, 2013, 32, 407-424.	8.5	46
123	A device for mimicking the contact force/contact area relationship of different materials with applications to softness rendering. , 2013, , .		18
124	A data-driven kinematic model of the human hand with soft-tissue artifact compensation mechanism for grasp synergy analysis. , 2013, , .		35
125	Synergy-based optimal design of hand pose sensing. , 2012, , .		8
126	On the use of postural synergies to improve human hand pose reconstruction. , 2012, , .		10

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127	Design and control of an air-jet lump display. , 2012, , .		13
128	Characterization of an air jet haptic lump display. , 2011, 2011, 3467-70.		12
129	Rendering Softness: Integration of Kinesthetic and Cutaneous Information in a Haptic Device. IEEE Transactions on Haptics, 2010, 3, 109-118.	2.7	94
130	A new fabric-based softness display. , 2010, , .		17
131	A new softness display based on bi-elastic fabric. , 2009, , .		20
132	Modelling and control of HIV dynamics. Computer Methods and Programs in Biomedicine, 2008, 89, 162-168.	4.7	40