Matteo Bianchi

List of Publications by Year
in descending order

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106	2,561	236925	254184
papers	citations	25 h-index	43 g-index

114	114	114	2205
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	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
2	Exploring Teleimpedance and Tactile Feedback for Intuitive Control of the Pisa/IIT SoftHand. IEEE Transactions on Haptics, 2014, 7, 203-215.	2.7	107
3	Controlling Soft Robots: Balancing Feedback and Feedforward Elements. IEEE Robotics and Automation Magazine, 2017, 24, 75-83.	2.0	104
4	A Humanâ€“Robot Interaction Perspective on Assistive and Rehabilitation Robotics. Frontiers in Neurorobotics, 2017, 11, 24.	2.8	102
5	A synergy-based hand control is encoded in human motor cortical areas. ELife, 2016, 5, .	6.0	98
6	Rendering Softness: Integration of Kinesthetic and Cutaneous Information in a Haptic Device. IEEE Transactions on Haptics, 2010, 3, 109-118.	2.7	94
7	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
8	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
9	The SoftHand Pro: Functional evaluation of a novel, flexible, and robust myoelectric prosthesis. PLoS ONE, 2018, 13, e0205653.	2.5	62
10	The Change in Fingertip Contact Area as a Novel Proprioceptive Cue. Current Biology, 2016, 26, 1159-1163.	3.9	60
11	The Rice Haptic Rocker: Skin stretch haptic feedback with the Pisa/IIT SoftHand. , 2017, , .		57
12	Postural Hand Synergies during Environmental Constraint Exploitation. Frontiers in Neurorobotics, 2017, 11, 41.	2.8	56
13	Decentralized Trajectory Tracking Control for Soft Robots Interacting With the Environment. IEEE Transactions on Robotics, 2018, 34, 924-935.	10.3	47
14	Synergy-based hand pose sensing: Optimal glove design. International Journal of Robotics Research, 2013, 32, 407-424.	8.5	46
15	ThimbleSense: A Fingertip-Wearable Tactile Sensor for Grasp Analysis. IEEE Transactions on Haptics, 2016, 9, 121-133.	2.7	42
16	AirExGlove â€" A novel pneumatic exoskeleton glove for adaptive hand rehabilitation in post-stroke patients. , 2018, , .		41
17	Modelling and control of HIV dynamics. Computer Methods and Programs in Biomedicine, 2008, 89, 162-168.	4.7	40
18	Unvealing the Principal Modes of Human Upper Limb Movements through Functional Analysis. Frontiers in Robotics and AI, 2017, 4, .	3.2	38

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19	Simplifying Telerobotics: Wearability and Teleimpedance Improves Human-Robot Interactions in Teleoperation. IEEE Robotics and Automation Magazine, 2018, 25, 77-88.	2.0	38
20	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
21	HapPro: A Wearable Haptic Device for Proprioceptive Feedback. IEEE Transactions on Biomedical Engineering, 2019, 66, 138-149.	4.2	36
22	A data-driven kinematic model of the human hand with soft-tissue artifact compensation mechanism for grasp synergy analysis. , 2013, , .		35
23	Design and Characterization of a Fabric-Based Softness Display. IEEE Transactions on Haptics, 2015, 8, 152-163.	2.7	35
24	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
25	Synergy-based hand pose sensing: Reconstruction enhancement. International Journal of Robotics Research, 2013, 32, 396-406.	8.5	34
26	A Multi-Modal Sensing Glove for Human Manual-Interaction Studies. Electronics (Switzerland), 2016, 5, 42.	3.1	34
27	A Wearable Fabric-based display for haptic multi-cue delivery. , 2016, , .		34
28	Design of a Series Elastic Transmission for hand exoskeletons. Mechatronics, 2018, 51, 8-18.	3.3	34
29	Influence of force feedback on grasp force modulation in prosthetic applications: A preliminary study. , 2016, 2016, 5439-5442.		30
30	A Synergy-Based Optimally Designed Sensing Glove for Functional Grasp Recognition. Sensors, 2016, 16, 811.	3.8	29
31	Recent Data Sets on Object Manipulation: A Survey. Big Data, 2016, 4, 197-216.	3.4	29
32	Kinematic synthesis and testing of a new portable hand exoskeleton. Meccanica, 2017, 52, 2873-2897.	2.0	28
33	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
34	Editorial: Mapping Human Sensory-Motor Skills for Manipulation Onto the Design and Control of Robots. Frontiers in Neurorobotics, 2019, 13, 1.	2.8	26
35	A Fabric-Based Approach for Wearable Haptics. Electronics (Switzerland), 2016, 5, 44.	3.1	25
36	Characterization and Psychophysical Studies of an Air-Jet Lump Display. IEEE Transactions on Haptics, 2013, 6, 156-166.	2.7	24

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37	Assessment of muscle fatigue during isometric contraction using autonomic nervous system correlates. Biomedical Signal Processing and Control, 2019, 51, 42-49.	5.7	24
38	A novel application of a surface ElectroMyoGraphy-based control strategy for a hand exoskeleton system: A single-case study. International Journal of Advanced Robotic Systems, 2019, 16, 172988141982819.	2.1	24
39	Incrementality and Hierarchies in the Enrollment of Multiple Synergies for Grasp Planning. IEEE Robotics and Automation Letters, 2018, 3, 2686-2693.	5.1	23
40	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
41	On the Time-Invariance Properties of Upper Limb Synergies. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2019, 27, 1397-1406.	4.9	21
42	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
43	On the role of wearable haptics for force feedback in teleimpedance control for dual-arm robotic teleoperation. , 2019, , .		19
44	Tailor-Made Hand Exoskeletons at the University of Florence: From Kinematics to Mechatronic Design. Machines, 2019, 7, 22.	2.2	19
45	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
46	A device for mimicking the contact force/contact area relationship of different materials with applications to softness rendering. , 2013, , .		18
47	Design of an under-actuated wrist based on adaptive synergies. , 2017, , .		18
48	SoftHand at the CYBATHLON: a userâ€™s experience. Journal of NeuroEngineering and Rehabilitation, 2017, 14, 124.	4.6	18
49	Touch-Based Grasp Primitives for Soft Hands: Applications to Human-to-Robot Handover Tasks and Beyond. , 2018, , .		18
50	A new fabric-based softness display. , 2010, , .		17
51	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
52	Optimization-based scaling procedure for the design of fully portable hand exoskeletons. Meccanica, 2018, 53, 3157-3175.	2.0	16
53	EEG oscillations during caressâ€like affective haptic elicitation. Psychophysiology, 2018, 55, e13199.	2.4	15
54	Model-based mechanical design of a passive lower-limb exoskeleton for assisting workers in shotcrete projection. Meccanica, 2021, 56, 195-210.	2.0	14

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55	Design and control of an air-jet lump display. , 2012, , .		13
56	Electrodermal activity analysis during affective haptic elicitation. , 2015, 2015, 5777-80.		13
57	Tactile Augmented Reality for Arteries Palpation in Open Surgery Training. Lecture Notes in Computer Science, 2016, , 186-197.	1.3	13
58	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
59	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
60	Characterization of an air jet haptic lump display. , 2011, 2011, 3467-70.		12
61	Characterization of nonlinear finger pad mechanics for tactile rendering. , 2015, , .		12
62	On the Role of Affective Properties in Hedonic and Discriminant Haptic Systems. International Journal of Social Robotics, 2017, 9, 87-95.	4.6	12
63	Tactile slip and hand displacement: Bending hand motion with tactile illusions. , 2017, , .		11
64	On the use of postural synergies to improve human hand pose reconstruction. , 2012, , .		10
65	Gender-specific velocity recognition of caress-like stimuli through nonlinear analysis of Heart Rate Variability. , 2015, 2015, 298-301.		10
66	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
67	An automatic scaling procedure for a wearable and portable hand exoskeleton. , 2016, , .		9
68	The SoftHand Pro: Translation from Robotic Hand to Prosthetic Prototype. Biosystems and Biorobotics, 2017, , 469-473.	0.3	9
69	Separating haptic guidance from task dynamics: A practical solution via cutaneous devices. , 2018, , .		9
70	Synergy-based optimal design of hand pose sensing. , 2012, , .		8
71	Kinematics-Based Strategy for the Design of a Pediatric Hand Exoskeleton Prototype. Mechanisms and Machine Science, 2019, , 501-508.	0.5	8
72	Classifying Affective Haptic Stimuli through Gender-Specific Heart Rate Variability Nonlinear Analysis. IEEE Transactions on Affective Computing, 2020, 11, 459-469.	8.3	8

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73	EEG Complexity Maps to Characterise Brain Dynamics during Upper Limb Motor Imagery. , 2018, 2018, 3060-3063.		7
74	ExoSense: Measuring Manipulation in a Wearable Manner. , 2018, , .		6
75	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
76	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
77	Assistive Hand Exoskeletons: The Prototypes Evolution at the University of Florence. Mechanisms and Machine Science, 2019, , 307-315.	0.5	6
78	A novel tactile display for softness and texture rendering in tele-operation tasks. , 2015, , .		5
79	Design and Optimization of a Flexion/Extension Mechanism for a Hand Exoskeleton System. , 2016, , .		5
80	An Integrated Approach to Characterize the Behavior of a Human Fingertip in Contact with a Silica Window. IEEE Transactions on Haptics, 2017, 10, 123-129.	2.7	5
81	From humans to robots: The role of cutaneous impairment in human environmental constraint exploitation to inform the design of robotic hands. , 2017, , .		5
82	A Finite element model of tactile flow for softness perception. , 2015, 2015, 2430-3.		4
83	On the pleasantness of a haptic stimulation: How different textures can be recognized through heart rate variability nonlinear analysis. , 2016, 2016, 3560-3563.		4
84	Muscle fatigue assessment through electrodermal activity analysis during isometric contraction. , 2017, 2017, 398-401.		4
85	Recognition of affective haptic stimuli conveyed by different fabrics sing EEG-based sparse SVM. , 2017, , .		4
86	Soft tactile sensing: retrieving force, torque and contact point information from deformable surfaces. , 2019, , .		4
87	Lowâ€cost solution in international robotic challenge: Lessons learned by Tuscany Robotics Team at ERL Emergency Robots 2017. Journal of Field Robotics, 2019, 36, 587-601.	6.0	4
88	Underwater Robotics Competitions: The European Robotics League Emergency Robots Experience With FeelHippo AUV. Frontiers in Robotics and AI, 2020, 7, 3.	3.2	4
89	An instrumented manipulandum for human grasping studies. , 2015, , .		3
90	Electroencephalographic spectral correlates of caress-like affective haptic stimuli. , 2015, 2015, 4733-6.		3

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91	Heart rate variability analysis during muscle fatigue due to prolonged isometric contraction. , 2017, 2017, 1324-1327.		3
92	Employment of an Autonomous Underwater Vehicle as mobile bridge among heterogeneous acoustic nodes. IFAC-PapersOnLine, 2017, 50, 12380-12385.	0.9	3
93	EEG Processing to Discriminate Transitive-Intransitive Motor Imagery Tasks: Preliminary Evidences using Support Vector Machines. , 2018, 2018, 231-234.		3
94	Towards a Technology-Based Assessment of Sensory-Motor Pathological States Through Tactile Illusions. , 2018, , .		3
95	Contact with Sliding over a Rotating Ridged Surface: the Turntable Illusion. , 2019, , .		2
96	Design of a Self-moving Autonomous Buoy for the Localization of Underwater Targets. , 2019, , .		2
97	Model-Based Approach in Developing a Hand Exoskeleton for Children: A Preliminary Study. Biosystems and Biorobotics, 2019, , 490-494.	0.3	2
98	Advanced Grasping with the Pisa/IIT SoftHand. Communications in Computer and Information Science, 2018, , 19-38.	0.5	1
99	A Portable Tailor-Made Exoskeleton for Hand Disabilities. , 2020, , 177-191.		1
100	Design of an automatic optical system to measure anthropometric hand parameters. International Journal on Interactive Design and Manufacturing, 2021, 15, 73-75.	2.2	0
101	A Topology-Optimization-Based Design Methodology for Wearable Robots: Implementation and Application. Biosystems and Biorobotics, 2022, , 493-497.	0.3	0
102	Validation of a Virtual Reality Environment to Study Anticipatory Modulation of Digit Forces and Position. Lecture Notes in Computer Science, 2010, , 136-143.	1.3	0
103	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
104	A Synergistic Behavior Underpins Human Hand Grasping Force Control During Environmental Constraint Exploitation. Biosystems and Biorobotics, 2019, , 67-71.	0.3	0
105	Optimization-Based Scaling Procedure. Springer Theses, 2020, , 25-45.	0.1	0
106	ABS Hand Exoskeleton Prototypes: Experimental Results. Springer Theses, 2020, , 47-67.	0.1	0