Cosimo Della Santina

List of Publications by Year
in descending order

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71	1,695	516710	361022
papers	citations	16 h-index	35 g-index

74	74	74	1065
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Model-based dynamic feedback control of a planar soft robot: trajectory tracking and interaction with the environment. International Journal of Robotics Research, 2020, 39, 490-513.	8.5	151
2	Toward Dexterous Manipulation With Augmented Adaptive Synergies: The Pisa/IIT SoftHand 2. IEEE Transactions on Robotics, 2018, 34, 1141-1156.	10.3	130
3	Dynamic control of soft robots interacting with the environment. , 2018, , .		129
4	On an Improved State Parametrization for Soft Robots With Piecewise Constant Curvature and Its Use in Model Based Control. IEEE Robotics and Automation Letters, 2020, 5, 1001-1008.	5.1	110
5	Controlling Soft Robots: Balancing Feedback and Feedforward Elements. IEEE Robotics and Automation Magazine, 2017, 24, 75-83.	2.0	104
6	Distributed Proprioception of 3D Configuration in Soft, Sensorized Robots via Deep Learning. IEEE Robotics and Automation Letters, 2020, 5, 3299-3306.	5.1	104
7	Dynamic Motion Control of Multi-Segment Soft Robots Using Piecewise Constant Curvature Matched with an Augmented Rigid Body Model. , 2019, , .		102
8	The Quest for Natural Machine Motion: An Open Platform to Fast-Prototyping Articulated Soft Robots. IEEE Robotics and Automation Magazine, 2017, 24, 48-56.	2.0	87
9	Control Oriented Modeling of Soft Robots: The Polynomial Curvature Case. IEEE Robotics and Automation Letters, 2020, 5, 290-298.	5.1	75
10	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
11	Postural Hand Synergies during Environmental Constraint Exploitation. Frontiers in Neurorobotics, 2017, 11, 41.	2.8	56
12	Decentralized Trajectory Tracking Control for Soft Robots Interacting With the Environment. IEEE Transactions on Robotics, 2018, 34, 924-935.	10.3	47
13	Dataâ€“Driven Disturbance Observers for Estimating External Forces on Soft Robots. IEEE Robotics and Automation Letters, 2020, 5, 5717-5724.	5.1	42
14	Soft Robots. , 2020, , 1-14.		40
15	Unvealing the Principal Modes of Human Upper Limb Movements through Functional Analysis. Frontiers in Robotics and AI, 2017, 4, .	3.2	38
16	A review on nonlinear modes in conservative mechanical systems. Annual Reviews in Control, 2020, 50, 49-71.	7.9	32
17	Soft Robotic Grippers for Crop Handling or Harvesting: A Review. IEEE Access, 2022, 10, 75428-75443.	4.2	29
18	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

#	Article	IF	Citations
19	Covid-19 and Flattening the Curve: A Feedback Control Perspective. , 2021, 5, 1435-1440.		24
20	Scaling Up Soft Robotics: A Meter-Scale, Modular, and Reconfigurable Soft Robotic System. Soft Robotics, 2022, 9, 324-336.	8.0	23
21	Toward an adaptive foot for natural walking. , 2016, , .		21
22	Sensing Soft Robot Shape Using IMUs: An Experimental Investigation. Springer Proceedings in Advanced Robotics, 2021, , 543-552.	1.3	15
23	Piston-Driven Pneumatically-Actuated Soft Robots: Modeling and Backstepping Control. , 2022, 6, 1837-1842.		15
24	Exciting Efficient Oscillations in Nonlinear Mechanical Systems Through Eigenmanifold Stabilization. , 2021, 5, 1916-1921.		14
25	Dynamic Control of Soft Robots with Internal Constraints in the Presence of Obstacles. , 2019, , .		13
26	Exact Task Execution in Highly Under-Actuated Soft Limbs: An Operational Space Based Approach. IEEE Robotics and Automation Letters, 2019, 4, 2508-2515.	5.1	12
27	Soft Robots. , 2021, , 1-15.		12
28	Adaptive Control of Soft Robots Based on an Enhanced 3D Augmented Rigid Robot Matching. , 2021, 5, 1934-1939.		12
29	Energy-based shape regulation of soft robots with unactuated dynamics dominated by elasticity. , 2022, , .		11
30	Adaptive Control of Soft Robots Based on an Enhanced 3D Augmented Rigid Robot Matching. , 2021, , .		10
31	Estimating the state of epidemics spreading with graph neural networks. Nonlinear Dynamics, 2022, 109, 249-263.	5.2	9
32	Design and Assessment of Control Maps for Multi-Channel sEMG-Driven Prostheses and Supernumerary Limbs. Frontiers in Neurorobotics, 2019, 13, 26.	2.8	8
33	Flexible Manipulators. , 2021, , 1-15.		8
34	Understanding Human Manipulation With the Environment: A Novel Taxonomy for Video Labelling. IEEE Robotics and Automation Letters, 2021, 6, 6537-6544.	5.1	8
35	Estimating contact forces from postural measures in a class of under-actuated robotic hands. , 2017, , .		7
36	To grasp or not to grasp: an end-to-end deep-learning approach for predicting grasping failures in soft hands. , 2020, , .		7

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37	Actuating Eigenmanifolds of Conservative Mechanical Systems via Bounded or Impulsive Control Actions. IEEE Robotics and Automation Letters, 2021, 6, 2783-2790.	5.1	7
38	Experimental Closed-Loop Excitation of Nonlinear Normal Modes on an Elastic Industrial Robot. IEEE Robotics and Automation Letters, 2022, 7, 1689-1696.	5.1	7
39	Learning Assembly Tasks in a Few Minutes by Combining Impedance Control and Residual Recurrent Reinforcement Learning. Advanced Intelligent Systems, 2022, 4, 2100095.	6.1	6
40	Feedback Regulation of Elastically Decoupled Underactuated Soft Robots. IEEE Robotics and Automation Letters, 2022, 7, 4512-4519.	5.1	6
41	From humans to robots: The role of cutaneous impairment in human environmental constraint exploitation to inform the design of robotic hands. , 2017, , .		5
42	Control Architecture for Human-Like Motion With Applications to Articulated Soft Robots. Frontiers in Robotics and AI, 2020, 7, 117.	3.2	5
43	Efficient and Goal-Directed Oscillations in Articulated Soft Robots: The Point-To-Point Case. IEEE Robotics and Automation Letters, 2021, 6, 2555-2562.	5.1	5
44	Towards minimum-information adaptive controllers for robot manipulators. , 2017, , .		4
45	Time Generalization of Trajectories Learned on Articulated Soft Robots. IEEE Robotics and Automation Letters, 2020, 5, 3493-3500.	5.1	4
46	Exponential Convergence Rates of Nonlinear Mechanical Systems: The 1-DoF Case With Configuration-Dependent Inertia. , 2021, 5, 445-450.		4
47	Model-Based Control Can Improve the Performance of Artificial Cilia. , 2021, , .		4
48	Using Nonlinear Normal Modes for Execution of Efficient Cyclic Motions in Articulated Soft Robots. Springer Proceedings in Advanced Robotics, 2021, , 566-575.	1.3	4
49	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
50	PD-Like Regulation of Mechanical Systems With Prescribed Bounds of Exponential Stability: The Point-to-Point Case. , 2021, 5, 2102-2107.		3
51	A Neuromuscular-Model Based Control Strategy to Minimize Muscle Effort in Assistive Exoskeletons. , 2019, 2019, 963-970.		2
52	Exploiting Adaptability in Soft Feet for Sensing Contact Forces. IEEE Robotics and Automation Letters, 2020, 5, 391-398.	5.1	2
53	PI^{Ïf} - PI^{Ïf} Continuous Iterative Learning Control for Nonlinear Systems with Arbitrary Relative Degree. , 2021, , .		2
54	Embedding a Nonlinear Strict Oscillatory Mode into a Segmented Leg. , 2021, , .		2

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55	Iterative Learning in Functional Space for Non-Square Linear Systems. , 2021, , .		2
56	One-shot Learning Closed-loop Manipulation of Soft Slender Objects Based on a Planar Polynomial Curvature Model. , 2022, , .		2
57	On the Role of Coupled Damping and Gyroscopic Forces in the Stability and Performance of Mechanical Systems. , 2022, , 1-1.		2
58	Planning Natural Locomotion for Articulated Soft Quadrupeds. , 2022, , .		2
59	Advanced Grasping with the Pisa/IIT SoftHand. Communications in Computer and Information Science, 2018, , 19-38.	0.5	1
60	Modeling Previous Trial Effect in Human Manipulation through Iterative Learning Control. Advanced Intelligent Systems, 2020, 2, 1900074.	6.1	1
61	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
62	Editorial: On the Planning, Control, and Perception of Soft Robotic End-Effectors. Frontiers in Robotics and AI, 2021, 8, 795863.	3.2	1
63	Sensing soft robots' shape with cameras: an investigation on kinematics-aware SLAM. , 2022, , .		1
64	Cerebellar-inspired learning rule for gain adaptation of feedback controllers. , 2017, , .		0
65	Modeling Human Motor Skills to Enhance Robotsâ€™ Physical Interaction. Springer Proceedings in Advanced Robotics, 2021, , 116-126.	1.3	0
66	Exciting efficient oscillations in nonlinear mechanical systems through Eigenmanifold stabilization. , 2021, , .		0
67	PD-like Regulation of Mechanical Systems with Prescribed Bounds of Exponential Stability: the Point-to-Point Case. , 2021, , .		0
68	Covid-19 and Flattening the Curve: a Feedback Control Perspective. , 2021, , .		0
69	A Synergistic Behavior Underpins Human Hand Grasping Force Control During Environmental Constraint Exploitation. Biosystems and Biorobotics, 2019, , 67-71.	0.3	0
70	Kineto-Dynamic Modeling of Human Upper Limb for Robotic Manipulators and Assistive Applications. , 2020, , 23-51.		0
71	Exciting Nonlinear Modes of Conservative Mechanical Systems by Operating a Master Variable Decoupling. , 2021, , .		0