Cosimo Della Santina

List of Publications by Year
in descending order

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71 papers	1,695 citations	516710 16 h-index	361022 35 g-index
74 all docs	74 docs citations	74 times ranked	1065 citing authors

#	Article	IF	Citations
1	Scaling Up Soft Robotics: A Meter-Scale, Modular, and Reconfigurable Soft Robotic System. Soft Robotics, 2022, 9, 324-336.	8.0	23
2	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
3	Piston-Driven Pneumatically-Actuated Soft Robots: Modeling and Backstepping Control. , 2022, 6, 1837-1842.		15
4	Estimating the state of epidemics spreading with graph neural networks. Nonlinear Dynamics, 2022, 109, 249-263.	5.2	9
5	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
6	Feedback Regulation of Elastically Decoupled Underactuated Soft Robots. IEEE Robotics and Automation Letters, 2022, 7, 4512-4519.	5.1	6
7	Sensing soft robots' shape with cameras: an investigation on kinematics-aware SLAM. , 2022, , .		1
8	Energy-based shape regulation of soft robots with unactuated dynamics dominated by elasticity. , 2022, , .		11
9	One-shot Learning Closed-loop Manipulation of Soft Slender Objects Based on a Planar Polynomial Curvature Model. , 2022, , .		2
10	On the Role of Coupled Damping and Gyroscopic Forces in the Stability and Performance of Mechanical Systems. , 2022, , 1-1.		2
11	Soft Robotic Grippers for Crop Handling or Harvesting: A Review. IEEE Access, 2022, 10, 75428-75443.	4.2	29
12	Planning Natural Locomotion for Articulated Soft Quadrupeds. , 2022, , .		2
13	Exponential Convergence Rates of Nonlinear Mechanical Systems: The 1-DoF Case With Configuration-Dependent Inertia. , 2021, 5, 445-450.		4
14	Covid-19 and Flattening the Curve: A Feedback Control Perspective. , 2021, 5, 1435-1440.		24
15	Sensing Soft Robot Shape Using IMUs: An Experimental Investigation. Springer Proceedings in Advanced Robotics, 2021, , 543-552.	1.3	15
16	Soft Robots. , 2021, , 1-15.		12
17	Flexible Manipulators. , 2021, , 1-15.		8
18	Modeling Human Motor Skills to Enhance Robotsâ€™ Physical Interaction. Springer Proceedings in Advanced Robotics, 2021, , 116-126.	1.3	0

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19	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
20	Model-Based Control Can Improve the Performance of Artificial Cilia. , 2021, , .		4
21	Actuating Eigenmanifolds of Conservative Mechanical Systems via Bounded or Impulsive Control Actions. IEEE Robotics and Automation Letters, 2021, 6, 2783-2790.	5.1	7
22	Adaptive Control of Soft Robots Based on an Enhanced 3D Augmented Rigid Robot Matching. , 2021, , .		10
23	Exciting efficient oscillations in nonlinear mechanical systems through Eigenmanifold stabilization. , 2021, , .		0
24	PD-like Regulation of Mechanical Systems with Prescribed Bounds of Exponential Stability: the Point-to-Point Case. , 2021, , .		0
25	Covid-19 and Flattening the Curve: a Feedback Control Perspective. , 2021, , .		0
26	Understanding Human Manipulation With the Environment: A Novel Taxonomy for Video Labelling. IEEE Robotics and Automation Letters, 2021, 6, 6537-6544.	5.1	8
27	PD-Like Regulation of Mechanical Systems With Prescribed Bounds of Exponential Stability: The Point-to-Point Case. , 2021, 5, 2102-2107.		3
28	Adaptive Control of Soft Robots Based on an Enhanced 3D Augmented Rigid Robot Matching. , 2021, 5, 1934-1939.		12
29	Exciting Efficient Oscillations in Nonlinear Mechanical Systems Through Eigenmanifold Stabilization. , 2021, 5, 1916-1921.		14
30	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
31	Editorial: On the Planning, Control, and Perception of Soft Robotic End-Effectors. Frontiers in Robotics and AI, 2021, 8, 795863.	3.2	1
32	PI^{Ïƒ} - PI^{Ïƒ} Continuous Iterative Learning Control for Nonlinear Systems with Arbitrary Relative Degree. , 2021, , .		2
33	Embedding a Nonlinear Strict Oscillatory Mode into a Segmented Leg. , 2021, , .		2
34	Iterative Learning in Functional Space for Non-Square Linear Systems. , 2021, , .		2
35	Exciting Nonlinear Modes of Conservative Mechanical Systems by Operating a Master Variable Decoupling. , 2021, , .		0
36	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

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37	Control Oriented Modeling of Soft Robots: The Polynomial Curvature Case. IEEE Robotics and Automation Letters, 2020, 5, 290-298.	5.1	75
38	Exploiting Adaptability in Soft Feet for Sensing Contact Forces. IEEE Robotics and Automation Letters, 2020, 5, 391-398.	5.1	2
39	Control Architecture for Human-Like Motion With Applications to Articulated Soft Robots. Frontiers in Robotics and AI, 2020, 7, 117.	3.2	5
40	Dataâ€“Driven Disturbance Observers for Estimating External Forces on Soft Robots. IEEE Robotics and Automation Letters, 2020, 5, 5717-5724.	5.1	42
41	Modeling Previous Trial Effect in Human Manipulation through Iterative Learning Control. Advanced Intelligent Systems, 2020, 2, 1900074.	6.1	1
42	A review on nonlinear modes in conservative mechanical systems. Annual Reviews in Control, 2020, 50, 49-71.	7.9	32
43	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
44	To grasp or not to grasp: an end-to-end deep-learning approach for predicting grasping failures in soft hands. , 2020, , .		7
45	Distributed Proprioception of 3D Configuration in Soft, Sensorized Robots via Deep Learning. IEEE Robotics and Automation Letters, 2020, 5, 3299-3306.	5.1	104
46	Time Generalization of Trajectories Learned on Articulated Soft Robots. IEEE Robotics and Automation Letters, 2020, 5, 3493-3500.	5.1	4
47	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
48	Soft Robots. , 2020, , 1-14.		40
49	Kineto-Dynamic Modeling of Human Upper Limb for Robotic Manipulators and Assistive Applications. , 2020, , 23-51.		0
50	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
51	A Neuromuscular-Model Based Control Strategy to Minimize Muscle Effort in Assistive Exoskeletons. , 2019, 2019, 963-970.		2
52	Design and Assessment of Control Maps for Multi-Channel sEMG-Driven Prostheses and Supernumerary Limbs. Frontiers in Neurorobotics, 2019, 13, 26.	2.8	8
53	Dynamic Motion Control of Multi-Segment Soft Robots Using Piecewise Constant Curvature Matched with an Augmented Rigid Body Model. , 2019, , .		102
54	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

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55	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
56	Dynamic Control of Soft Robots with Internal Constraints in the Presence of Obstacles. , 2019, , .		13
57	A Synergistic Behavior Underpins Human Hand Grasping Force Control During Environmental Constraint Exploitation. Biosystems and Biorobotics, 2019, , 67-71.	0.3	0
58	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
59	Decentralized Trajectory Tracking Control for Soft Robots Interacting With the Environment. IEEE Transactions on Robotics, 2018, 34, 924-935.	10.3	47
60	Advanced Grasping with the Pisa/IIT SoftHand. Communications in Computer and Information Science, 2018, , 19-38.	0.5	1
61	Dynamic control of soft robots interacting with the environment. , 2018, , .		129
62	Toward Dexterous Manipulation With Augmented Adaptive Synergies: The Pisa/IIT SoftHand 2. IEEE Transactions on Robotics, 2018, 34, 1141-1156.	10.3	130
63	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
64	Controlling Soft Robots: Balancing Feedback and Feedforward Elements. IEEE Robotics and Automation Magazine, 2017, 24, 75-83.	2.0	104
65	Towards minimum-information adaptive controllers for robot manipulators. , 2017, , .		4
66	From humans to robots: The role of cutaneous impairment in human environmental constraint exploitation to inform the design of robotic hands. , 2017, , .		5
67	Cerebellar-inspired learning rule for gain adaptation of feedback controllers. , 2017, , .		0
68	Estimating contact forces from postural measures in a class of under-actuated robotic hands. , 2017, , .		7
69	Unvealing the Principal Modes of Human Upper Limb Movements through Functional Analysis. Frontiers in Robotics and AI, 2017, 4, .	3.2	38
70	Postural Hand Synergies during Environmental Constraint Exploitation. Frontiers in Neurorobotics, 2017, 11, 41.	2.8	56
71	Toward an adaptive foot for natural walking. , 2016, , .		21