Federico Renda

List of Publications by Year
in descending order

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50	2,269	394421	361022
papers	citations	19 h-index	35 g-index

55	55	55	1408
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Dynamic Model of a Multibending Soft Robot Arm Driven by Cables. IEEE Transactions on Robotics, 2014, 30, 1109-1122.	10.3	328
2	Model-Based Reinforcement Learning for Closed-Loop Dynamic Control of Soft Robotic Manipulators. IEEE Transactions on Robotics, 2019, 35, 124-134.	10.3	228
3	Discrete Cosserat Approach for Multisection Soft Manipulator Dynamics. IEEE Transactions on Robotics, 2018, 34, 1518-1533.	10.3	176
4	A 3D steady-state model of a tendon-driven continuum soft manipulator inspired by the octopus arm. Bioinspiration and Biomimetics, 2012, 7, 025006.	2.9	160
5	Neural Network and Jacobian Method for Solving the Inverse Statics of a Cable-Driven Soft Arm With Nonconstant Curvature. IEEE Transactions on Robotics, 2015, 31, 823-834.	10.3	155
6	Learning dynamic models for open loop predictive control of soft robotic manipulators. Bioinspiration and Biomimetics, 2017, 12, 066003.	2.9	96
7	Dynamics of Continuum and Soft Robots: A Strain Parameterization Based Approach. IEEE Transactions on Robotics, 2021, 37, 847-863.	10.3	77
8	A feed-forward neural network learning the inverse kinetics of a soft cable-driven manipulator moving in three-dimensional space. , 2013, , .		76
9	A Geometric Variable-Strain Approach for Static Modeling of Soft Manipulators With Tendon and Fluidic Actuation. IEEE Robotics and Automation Letters, 2020, 5, 4006-4013.	5.1	61
10	Discrete Cosserat approach for soft robot dynamics: A new piece-wise constant strain model with torsion and shears. , 2016, , .		56
11	Design and development of a soft robot with crawling and grasping capabilities. , 2012, , .		49
12	A unified multi-soft-body dynamic model for underwater soft robots. International Journal of Robotics Research, 2018, 37, 648-666.	8.5	49
13	Concentric Tube Robots for Minimally Invasive Surgery: Current Applications and Future Opportunities. IEEE Transactions on Medical Robotics and Bionics, 2020, 2, 410-424.	3.2	49
14	Learning the inverse kinetics of an octopus-like manipulator in three-dimensional space. Bioinspiration and Biomimetics, 2015, 10, 035006.	2.9	47
15	Design and prototyping softâ€“rigid tendon-driven modular grippers using interpenetrating phase composites materials. International Journal of Robotics Research, 2020, 39, 1635-1646.	8.5	45
16	A two dimensional inverse kinetics model of a cable driven manipulator inspired by the octopus arm. , 2012, , .		43
17	Modeling and Prototyping of an Underactuated Gripper Exploiting Joint Compliance and Modularity. IEEE Robotics and Automation Letters, 2018, 3, 2854-2861.	5.1	43
18	Modelling cephalopod-inspired pulsed-jet locomotion for underwater soft robots. Bioinspiration and Biomimetics, 2015, 10, 055005.	2.9	41

#	Article	IF	Citations
19	Modelling the nonlinear response of fibre-reinforced bending fluidic actuators. Smart Materials and Structures, 2016, 25, 105020.	3.5	40
20	Sensorization of continuum soft robots for reconstructing their spatial configuration. , 2012, , .		33
21	A Geometric and Unified Approach for Modeling Soft-Rigid Multi-Body Systems with Lumped and Distributed Degrees of Freedom. , 2018, , .		32
22	A general mechanical model for tendon-driven continuum manipulators. , 2012, , .		31
23	Screw-Based Modeling of Soft Manipulators With Tendon and Fluidic Actuation. Journal of Mechanisms and Robotics, 2017, 9, .	2.2	30
24	PoincarÃ©â€™s Equations for Cosserat Media: Application to Shells. Journal of Nonlinear Science, 2017, 27, 1-44.	2.1	29
25	First-Order Dynamic Modeling and Control of Soft Robots. Frontiers in Robotics and AI, 2020, 7, 95.	3.2	28
26	Learning Global Inverse Statics Solution for a Redundant Soft Robot. , 2016, , .		28
27	Discrete Cosserat Approach for Closed-Chain Soft Robots: Application to the Fin-Ray Finger. IEEE Transactions on Robotics, 2021, 37, 2083-2098.	10.3	24
28	Compliant gripper design, prototyping, and modeling using screw theory formulation. International Journal of Robotics Research, 2021, 40, 55-71.	8.5	23
29	Structural Dynamics of a Pulsed-Jet Propulsion System for Underwater Soft Robots. International Journal of Advanced Robotic Systems, 2015, 12, 68.	2.1	20
30	Design and Prototype of Supernumerary Robotic Finger (SRF) Inspired by Fin RayÂ® Effect for Patients Suffering from Sensorimotor Hand Impairment. , 2019, , .		18
31	Flagellate Underwater Robotics at Macroscale: Design, Modeling, and Characterization. IEEE Transactions on Robotics, 2022, 38, 731-747.	10.3	18
32	A Sliding-Rod Variable-Strain Model for Concentric Tube Robots. IEEE Robotics and Automation Letters, 2021, 6, 3451-3458.	5.1	16
33	Modeling and prototyping of a soft closed-chain modular gripper. Industrial Robot, 2019, 46, 135-145.	2.1	15
34	Coupling Numerical Deformable Models in Global and Reduced Coordinates for the Simulation of the Direct and the Inverse Kinematics of Soft Robots. IEEE Robotics and Automation Letters, 2021, 6, 3910-3917.	5.1	14
35	Locomotion and elastodynamics model of an underwater shell-like soft robot. , 2015, , .		13
36	Thrust depletion at high pulsation frequencies in underactuated, soft-bodied, pulsed-jet vehicles. , 2015, , .		12

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37	Extended Hamiltonâ€™s principle applied to geometrically exact Kirchhoff sliding rods. Journal of Sound and Vibration, 2021, 516, 116511.	3.9	11
38	Emergence of behavior through morphology: a case study on an octopus inspired manipulator. Bioinspiration and Biomimetics, 2019, 14, 034001.	2.9	8
39	ReSoft Gripper: A reconfigurable soft gripper with monolithic fingers and differential mechanism for versatile and delicate grasping. , 2021, , .		8
40	Geometrically-Exact Inverse Kinematic Control of Soft Manipulators With General Threadlike Actuatorsâ€™ Routing. IEEE Robotics and Automation Letters, 2022, 7, 7311-7318.	5.1	8
41	A Feed Forward Neural Network for Solving the Inverse Kinetics of Non-Constant Curvature Soft Manipulators Driven by Cables. , 2013, , .		6
42	Discrete Cosserat Method for Soft Manipulators Workspace Estimation: An Optimization-Based Approach. Journal of Mechanisms and Robotics, 2022, 14, .	2.2	5
43	Underwater Robotic Welding of Lap Joints with Sandwiched Reactive Multilayers: Thermal, Mechanical and Material Analysis. MRS Advances, 2018, 3, 911-920.	0.9	3
44	Exploiting the instability of eccentric tube robots for distal force control in minimally invasive cardiac ablation. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2021, 235, 7212-7232.	2.1	3
45	Dynamic Model of a Jet-Propelled Soft Robot Inspired by the Octopus Mantle. Lecture Notes in Computer Science, 2014, , 261-272.	1.3	3
46	Design, Modeling and Testing of a Flagellum-inspired Soft Underwater Propeller Exploiting Passive Elasticity. , 2019, , .		2
47	Inverse and Direct Model of a Continuum Manipulator Inspired by the Octopus Arm. Lecture Notes in Computer Science, 2012, , 347-348.	1.3	1
48	Dynamic modeling and numerical simulations of a passive robotic walker using Euler-Lagrange method. , 2018, , .		1
49	PoincarÃ© Equations for Cosserat Shells: Application to Cephalopod Locomotion. Lecture Notes in Computer Science, 2015, , 511-518.	1.3	0
50	CTR DaPP: A Python Application for Design and Path Planning of Variable-strain Concentric Tube Robots. , 2022, , .		0