Conor J Walsh

List of Publications by Year
in descending order

133 papers	12,244 citations	50276 46 h-index	43889 91 g-index
135 all docs	135 docs citations	135 times ranked	8552 citing authors

#	Article	IF	Citations
1	Opposite Treatment on Null Space: A Unified Control Framework for a Class of Underactuated Robotic Systems With Null Space Avoidance. IEEE Transactions on Control Systems Technology, 2023, 31, 193-207.	5.2	2
2	Unfolding Textile-Based Pneumatic Actuators for Wearable Applications. Soft Robotics, 2022, 9, 163-172.	8.0	38
3	Mobile Unilateral Hip Flexion Exosuit Assistance for Overground Walking in Individuals Post-Stroke: A Case Series. Biosystems and Biorobotics, 2022, , 357-361.	0.3	0
4	Soft robotic exosuit augmented high intensity gait training on stroke survivors: a pilot study. Journal of NeuroEngineering and Rehabilitation, 2022, 19, .	4.6	12
5	A Soft Exosuit Assisting Hip Abduction for Knee Adduction Moment Reduction During Walking. IEEE Robotics and Automation Letters, 2022, 7, 7439-7446.	5.1	13
6	Reducing the energy cost of walking with low assistance levels through optimized hip flexion assistance from a soft exosuit. Scientific Reports, 2022, 12, .	3.3	21
7	Textile Technology for Soft Robotic and Autonomous Garments. Advanced Functional Materials, 2021, 31, 2008278.	14.9	127
8	Real-time gait metric estimation for everyday gait training with wearable devices in people poststroke. Wearable Technologies, 2021, 2, .	3.1	16
9	Soft Robotics: Textile Technology for Soft Robotic and Autonomous Garments (Adv. Funct. Mater.) Tj ETQq1 1 0.784314 rgBT /Overlo	14.9	5
10	Biologically inspired electrostatic artificial muscles for insect-sized robots. International Journal of Robotics Research, 2021, 40, 895-922.	8.5	30
11	Kinematics-Based Control of an Inflatable Soft Wearable Robot for Assisting the Shoulder of Industrial Workers. IEEE Robotics and Automation Letters, 2021, 6, 2155-2162.	5.1	20
12	Sensing and Control of a Multi-Joint Soft Wearable Robot for Upper-Limb Assistance and Rehabilitation. IEEE Robotics and Automation Letters, 2021, 6, 2381-2388.	5.1	31
13	Targeting post-stroke walking automaticity with a propulsion-augmenting soft robotic exosuit: toward a biomechanical and neurophysiological approach to assistance prescription. , 2021, , .		1
14	Targeting Paretic Propulsion and Walking Speed With a Soft Robotic Exosuit: A Consideration-of-Concept Trial. Frontiers in Neurorobotics, 2021, 15, 689577.	2.8	13
15	Importance of Preserved Tricuspid Valve Function for Effective Soft Robotic Augmentation of the Right Ventricle in Cases of Elevated Pulmonary Artery Pressure. Cardiovascular Engineering and Technology, 2021, , 1.	1.6	1
16	Skeletal muscle regeneration with robotic actuationâ€“mediated clearance of neutrophils. Science Translational Medicine, 2021, 13, eabe8868.	12.4	42
17	Estimation of Walking Speed and Its Spatiotemporal Determinants Using a Single Inertial Sensor Worn on the Thigh: From Healthy to Hemiparetic Walking. Sensors, 2021, 21, 6976.	3.8	8
18	Individualization of exosuit assistance based on measured muscle dynamics during versatile walking. Science Robotics, 2021, 6, eabj1362.	17.6	59

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19	Ankle resistance with a unilateral soft exosuit increases plantarflexor effort during pushoff in unimpaired individuals. Journal of NeuroEngineering and Rehabilitation, 2021, 18, 182.	4.6	6
20	Social Technology: An Interdisciplinary Approach to Improving Care for Older Adults. Frontiers in Public Health, 2021, 9, 729149.	2.7	7
21	Soft Sensing Shirt for Shoulder Kinematics Estimation. , 2020, , .		24
22	Automated detection of soleus concentric contraction in variable gait conditions for improved exosuit control. , 2020, , .		7
23	A Soft Inflatable Wearable Robot for Hip Abductor Assistance: Design and Preliminary Assessment. , 2020, , .		8
24	Ultra-sensitive and resilient compliant strain gauges for soft machines. Nature, 2020, 587, 219-224.	27.8	279
25	Robotic Textiles: Smart Thermally Actuating Textiles (Adv. Mater. Technol. 8/2020). Advanced Materials Technologies, 2020, 5, 2070050.	5.8	0
26	Effects of a Soft Robotic Glove using a High Repetition Protocol in Chronic Stroke: A Pilot Study. , 2020, , .		6
27	Inflatable Soft Wearable Robot for Reducing Therapist Fatigue During Upper Extremity Rehabilitation in Severe Stroke. IEEE Robotics and Automation Letters, 2020, 5, 3899-3906.	5.1	53
28	Indirect measurement of anterior-posterior ground reaction forces using a minimal set of wearable inertial sensors: from healthy to hemiparetic walking. Journal of NeuroEngineering and Rehabilitation, 2020, 17, 82.	4.6	10
29	Smart Thermally Actuating Textiles. Advanced Materials Technologies, 2020, 5, 2000383.	5.8	35
30	Dynamic Augmentation of Left Ventricle and Mitral Valve Function With an Implantable Soft Robotic Device. JACC Basic To Translational Science, 2020, 5, 229-242.	4.1	14
31	Offline Assistance Optimization of a Soft Exosuit for Augmenting Ankle Power of Stroke Survivors During Walking. IEEE Robotics and Automation Letters, 2020, 5, 828-835.	5.1	49
32	A Hinge-Free, Non-Restrictive, Lightweight Tethered Exosuit for Knee Extension Assistance During Walking. IEEE Transactions on Medical Robotics and Bionics, 2020, 2, 165-175.	3.2	56
33	Improving Grasp Function After Spinal Cord Injury With a Soft Robotic Glove. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2020, 28, 1407-1415.	4.9	40
34	Walking Faster and Farther With a Soft Robotic Exosuit: Implications for Post-Stroke Gait Assistance and Rehabilitation. IEEE Open Journal of Engineering in Medicine and Biology, 2020, 1, 108-115.	2.3	64
35	Synchronization of a Soft Robotic Ventricular Assist Device to the Native Cardiac Rhythm Using an Epicardial Electrogram. Journal of Medical Devices, Transactions of the ASME, 2020, 14, .	0.7	6
36	Reducing the metabolic rate of walking and running with a versatile, portable exosuit. Science, 2019, 365, 668-672.	12.6	287

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37	Soft Robotic Glove with Integrated Sensing for Intuitive Grasping Assistance Post Spinal Cord Injury. , 2019, , .		34
38	Metabolic cost adaptations during training with a soft exosuit assisting the hip joint. Scientific Reports, 2019, 9, 9779.	3.3	50
39	Bayesian Optimization of Soft Exosuits Using a Metabolic Estimator Stopping Process. , 2019, , .		21
40	A soft ring oscillator. Science Robotics, 2019, 4, .	17.6	128
41	Robotic Artificial Muscles: Current Progress and Future Perspectives. IEEE Transactions on Robotics, 2019, 35, 761-781.	10.3	225
42	Comparison of the human-exosuit interaction using ankle moment and ankle positive power inspired walking assistance. Journal of Biomechanics, 2019, 83, 76-84.	2.1	40
43	Biomechanics Underlying Subject-Dependent Variability in Motor Adaptation to Soft Exosuit Assistance. Biosystems and Biorobotics, 2019, , 175-179.	0.3	0
44	Assisting Limb Advancement During Walking After Stroke Using a Wearable Soft Hip Exosuit: A Proof-of-Concept. Biosystems and Biorobotics, 2019, , 312-316.	0.3	1
45	A qualitative investigation of design knowledge reuse in project-based mechanical design courses. European Journal of Engineering Education, 2019, 44, 137-152.	2.3	0
46	Human-in-the-Loop Bayesian Optimization of a Tethered Soft Exosuit for Assisting Hip Extension. Biosystems and Biorobotics, 2019, , 142-146.	0.3	1
47	Recent Results from Evaluation of Soft Wearable Robots in Clinical Populations. Biosystems and Biorobotics, 2019, , 58-62.	0.3	3
48	Human-in-the-loop optimization of hip assistance with a soft exosuit during walking. Science Robotics, 2018, 3, .	17.6	387
49	Growing the Soft Robotics Community Through Knowledge-Sharing Initiatives. Soft Robotics, 2018, 5, 119-121.	8.0	13
50	Biomechanical mechanisms underlying exosuit-induced improvements in walking economy after stroke. Journal of Experimental Biology, 2018, 221, .	1.7	33
51	Human-in-the-loop development of soft wearable robots. Nature Reviews Materials, 2018, 3, 78-80.	48.7	125
52	Isometric Quadriceps Strength Test Device to Improve the Reliability of Handheld Dynamometry in Patient With Anterior Cruciate Ligament Injury. , 2018, , .		0
53	Wearable Movement Sensors for Rehabilitation: A Focused Review of Technological and Clinical Advances. PM and R, 2018, 10, S220-S232.	1.6	129
54	Compliant Low Profile Multi-Axis Force Sensors. , 2018, , .		2

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55	A Lightweight and Efficient Portable Soft Exosuit for Paretic Ankle Assistance in Walking After Stroke. , 2018, , .		87
56	Autonomous and Portable Soft Exosuit for Hip Extension Assistance with Online Walking and Running Detection Algorithm. , 2018, , .		39
57	Force Control of Textile-Based Soft Wearable Robots for Mechanotherapy. , 2018, , .		21
58	ExoBoot, a Soft Inflatable Robotic Boot to Assist Ankle During Walking: Design, Characterization and Preliminary Tests. , 2018, , .		30
59	Autonomous Multi-Joint Soft Exosuit for Assistance with Walking Overground. , 2018, , .		35
60	A Soft Pneumatic Fabric-Polymer Actuator for Wearable Biomedical Devices: Proof of Concept for Lymphedema Treatment. , 2018, , .		6
61	Towards Alternative Approaches for Coupling of a Soft Robotic Sleeve to the Heart. Annals of Biomedical Engineering, 2018, 46, 1534-1547.	2.5	31
62	Autonomous multi-joint soft exosuit with augmentation-power-based control parameter tuning reduces energy cost of loaded walking. Journal of NeuroEngineering and Rehabilitation, 2018, 15, 66.	4.6	110
63	Assisting hand function after spinal cord injury with a fabric-based soft robotic glove. Journal of NeuroEngineering and Rehabilitation, 2018, 15, 59.	4.6	155
64	Exploiting Textile Mechanical Anisotropy for Fabric-Based Pneumatic Actuators. Soft Robotics, 2018, 5, 662-674.	8.0	139
65	Sustained release of targeted cardiac therapy with a replenishable implanted epicardial reservoir. Nature Biomedical Engineering, 2018, 2, 416-428.	22.5	70
66	A Highly Sensitive Capacitiveâ€Based Soft Pressure Sensor Based on a Conductive Fabric and a Microporous Dielectric Layer. Advanced Materials Technologies, 2018, 3, 1700237.	5.8	233
67	SOFT ROBOTIC GLOVE FOR COMBINED ASSISTANCE AND REHABILITATION DURING ACTIVITIES OF DAILY LIVING. , 2018, , 135-157.		1
68	Biomechanical and Physiological Evaluation of Multi-Joint Assistance With Soft Exosuits. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2017, 25, 119-130.	4.9	164
69	Soft robotic sleeve supports heart function. Science Translational Medicine, 2017, 9, .	12.4	280
70	Assistance magnitude versus metabolic cost reductions for a tethered multiarticular soft exosuit. Science Robotics, 2017, 2, .	17.6	285
71	Toward Medical Devices With Integrated Mechanisms, Sensors, and Actuators Via Printed-Circuit MEMS. Journal of Medical Devices, Transactions of the ASME, 2017, 11, .	0.7	13
72	An Intracardiac Soft Robotic Device for Augmentation of Blood Ejection from the Failing Right Ventricle. Annals of Biomedical Engineering, 2017, 45, 2222-2233.	2.5	28

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73	Reducing the metabolic cost of running with a tethered soft exosuit. Science Robotics, 2017, 2, .	17.6	94
74	An Implantable Extracardiac Soft Robotic Device for the Failing Heart: Mechanical Coupling and Synchronization. Soft Robotics, 2017, 4, 241-250.	8.0	57
75	Automatic design of fiber-reinforced soft actuators for trajectory matching. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 51-56.	7.1	367
76	A soft robotic exosuit improves walking in patients after stroke. Science Translational Medicine, 2017, 9, .	12.4	439
77	A soft wearable robot for the shoulder: Design, characterization, and preliminary testing. , 2017, 2017, 1672-1678.		117
78	A Highly Stretchable Capacitiveâ€Based Strain Sensor Based on Metal Deposition and Laser Rastering. Advanced Materials Technologies, 2017, 2, 1700081.	5.8	90
79	Batch Fabrication of Customizable Siliconeâ€Textile Composite Capacitive Strain Sensors for Human Motion Tracking. Advanced Materials Technologies, 2017, 2, 1700136.	5.8	301
80	A high-force, high-stroke distal robotic add-on for endoscopy. , 2017, , .		5
81	An Additive Millimeterâ€Scale Fabrication Method for Soft Biocompatible Actuators and Sensors. Advanced Materials Technologies, 2017, 2, 1700135.	5.8	54
82	Reducing Circumduction and Hip Hiking During Hemiparetic Walking Through Targeted Assistance of the Paretic Limb Using a Soft Robotic Exosuit. American Journal of Physical Medicine and Rehabilitation, 2017, 96, S157-S164.	1.4	51
83	Lower limb biomechanical analysis during an unanticipated step on a bump reveals specific adaptations of walking on uneven terrains. Journal of Experimental Biology, 2017, 220, 4169-4176.	1.7	18
84	Varying negative work assistance at the ankle with a soft exosuit during loaded walking. Journal of NeuroEngineering and Rehabilitation, 2017, 14, 62.	4.6	46
85	Physical interface dynamics alter how robotic exosuits augment human movement: implications for optimizing wearable assistive devices. Journal of NeuroEngineering and Rehabilitation, 2017, 14, 40.	4.6	102
86	Improved assistive profile tracking of soft exosuits for walking and jogging with off-board actuation. , 2017, , .		58
87	Hybrid carbon fiber-textile compliant force sensors for high-load sensing in soft exosuits. , 2017, , .		14
88	Human-in-the-loop Bayesian optimization of wearable device parameters. PLoS ONE, 2017, 12, e0184054.	2.5	88
89	Continuous sweep versus discrete step protocols for studying effects of wearable robot assistance magnitude. Journal of NeuroEngineering and Rehabilitation, 2017, 14, 72.	4.6	11
90	Soft robotic ventricular assist device with septal bracing for therapy of heart failure. Science Robotics, 2017, 2, .	17.6	46

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91	Controlling negative and positive power at the ankle with a soft exosuit. , 2016, , .		70
92	Effect of timing of hip extension assistance during loaded walking with a soft exosuit. Journal of NeuroEngineering and Rehabilitation, 2016, 13, 87.	4.6	134
93	Fabrication of stretchable composites with anisotropic electrical conductivity for compliant pressure transducers. , 2016, , .		3
94	A biologically-inspired multi-joint soft exosuit that can reduce the energy cost of loaded walking. Journal of NeuroEngineering and Rehabilitation, 2016, 13, 43.	4.6	239
95	IMU-based iterative control for hip extension assistance with a soft exosuit. , 2016, , .		69
96	Biologic-free mechanically induced muscle regeneration. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 1534-1539.	7.1	142
97	Self-Assembling, Low-Cost, and Modular mm-Scale Force Sensor. IEEE Sensors Journal, 2016, 16, 69-76.	4.7	22
98	A Soft Robotic Orthosis for Wrist Rehabilitation1. Journal of Medical Devices, Transactions of the ASME, 2015, 9, .	0.7	51
99	Smart and Connected Actuated Mobile and Sensing Suit to Encourage Motion in Developmentally Delayed Infants1. Journal of Medical Devices, Transactions of the ASME, 2015, 9, .	0.7	16
100	A biologically inspired soft exosuit for walking assistance. International Journal of Robotics Research, 2015, 34, 744-762.	8.5	318
101	Design and control of a parallel linkage wrist for robotic microsurgery. , 2015, , .		15
102	Soft Wearable Orthotic Device for Assisting Kicking Motion in Developmentally Delayed Infants1. Journal of Medical Devices, Transactions of the ASME, 2015, 9, .	0.7	11
103	Mechanical Programming of Soft Actuators by Varying Fiber Angle. Soft Robotics, 2015, 2, 26-32.	8.0	382
104	A light-reflecting balloon catheter for atraumatic tissue defect repair. Science Translational Medicine, 2015, 7, 306ra149.	12.4	34
105	Soft robotic glove for hand rehabilitation and task specific training. , 2015, , .		161
106	Multi-joint soft exosuit for gait assistance. , 2015, , .		70
107	EMG controlled soft robotic glove for assistance during activities of daily living. , 2015, , .		111
108	A soft exosuit for patients with stroke: Feasibility study with a mobile off-board actuation unit. , 2015, , .		55

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109	Soft robotic glove for combined assistance and at-home rehabilitation. Robotics and Autonomous Systems, 2015, 73, 135-143.	5.1	1,168
110	Drug and cell delivery for cardiac regeneration. Advanced Drug Delivery Reviews, 2015, 84, 85-106.	13.7	170
111	Multi-joint actuation platform for lower extremity soft exosuits. , 2014, , .		77
112	A monolithic approach to fabricating low-cost, millimeter-scale multi-axis force sensors for minimally-invasive surgery. , 2014, , .		19
113	Wearable soft sensing suit for human gait measurement. International Journal of Robotics Research, 2014, 33, 1748-1764.	8.5	325
114	An intraventricular soft robotic pulsatile assist device for right ventricular heart failure. , 2014, , .		1
115	Biologically Inspired Soft Robot for Thumb Rehabilitation1. Journal of Medical Devices, Transactions of the ASME, 2014, 8, .	0.7	75
116	Stronger, Smarter, Softer: Next-Generation Wearable Robots. IEEE Robotics and Automation Magazine, 2014, 21, 22-33.	2.0	286
117	Optimal spatial design of non-invasive magnetic field-based localization systems. , 2014, , .		12
118	A Bioinspired Soft Actuated Material. Advanced Materials, 2014, 26, 1200-1206.	21.0	210
119	Pneumatic Networks for Soft Robotics that Actuate Rapidly. Advanced Functional Materials, 2014, 24, 2163-2170.	14.9	1,125
120	The Soft Robotics Toolkit: Shared Resources for Research and Design. Soft Robotics, 2014, 1, 224-230.	8.0	109
121	Comparison of biomaterial delivery vehicles for improving acute retention of stem cells in the infarcted heart. Biomaterials, 2014, 35, 6850-6858.	11.4	140
122	Monolithic Fabrication of Millimeter-Scale Surgical Devices With Integrated Sensing1. Journal of Medical Devices, Transactions of the ASME, 2014, 8, .	0.7	1
123	An Intraventricular Soft Robotic Pulsatile Assist Device for Right Ventricular Heart Failure1. Journal of Medical Devices, Transactions of the ASME, 2014, 8, .	0.7	8
124	Biologically-inspired soft exosuit. , 2013, 2013, 6650455.		173
125	Soft wearable motion sensing suit for lower limb biomechanics measurements. , 2013, , .		87
126	Force-sensing surgical grasper enabled by pop-up book MEMS. , 2013, , .		20

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127	Minimally Invasive Device for Rapid Urethrovesical Anastomosis. Journal of Medical Devices, Transactions of the ASME, 2013, 7, .	0.7	0
128	Multifunctional Laparoscopic Trocar With Built-in Fascial Closure and Stabilization. Journal of Medical Devices, Transactions of the ASME, 2013, 7, .	0.7	1
129	Laparoscopic Device for Direct and Indirect Suction. Journal of Medical Devices, Transactions of the ASME, 2013, 7, .	0.7	0
130	Hemodialysis Graft Resistance Adjustment Device. Journal of Medical Devices, Transactions of the ASME, 2012, 6, .	0.7	0
131	Towards a compact robotically steerable thermal ablation probe. , 2012, , .		10
132	Differential Spring Stiffness Design for Finger Therapy Exercise Device: Bio-inspired from Stiff Pathological Finger Joints. Journal of Medical Devices, Transactions of the ASME, 2012, 6, .	0.7	1
133	An Expanding Foamâ€Fabric Orthopedic Cast. Advanced Materials Technologies, 0, , 2101563.	5.8	1