

# Michael Goldfarb

## List of Publications by Year in descending order

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116  
papers

5,197  
citations

109264

35  
h-index

98753

67  
g-index

116  
all docs

116  
docs citations

116  
times ranked

3175  
citing authors

#	ARTICLE	IF	CITATIONS
1	Multiclass Real-Time Intent Recognition of a Powered Lower Limb Prosthesis. IEEE Transactions on Biomedical Engineering, 2010, 57, 542-551.	2.5	354
2	Corner-Filletted Flexure Hinges. Journal of Mechanical Design, Transactions of the ASME, 2001, 123, 346-352.	1.7	287
3	Preliminary Evaluations of a Self-Contained Anthropomorphic Transfemoral Prosthesis. IEEE/ASME Transactions on Mechatronics, 2009, 14, 667-676.	3.7	255
4	Upslope Walking With a Powered Knee and Ankle Prosthesis: Initial Results With an Amputee Subject. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2011, 19, 71-78.	2.7	232
5	A Robotic Leg Prosthesis: Design, Control, and Implementation. IEEE Robotics and Automation Magazine, 2014, 21, 70-81.	2.2	202
6	A Lumped Parameter Electromechanical Model for Describing the Nonlinear Behavior of Piezoelectric Actuators. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 1997, 119, 478-485.	0.9	198
7	Design of a Multifunctional Anthropomorphic Prosthetic Hand With Extrinsic Actuation. IEEE/ASME Transactions on Mechatronics, 2009, 14, 699-706.	3.7	188
8	A Preliminary Assessment of Legged Mobility Provided by a Lower Limb Exoskeleton for Persons With Paraplegia. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2014, 22, 482-490.	2.7	168
9	Control of Stair Ascent and Descent With a Powered Transfemoral Prosthesis. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2013, 21, 466-473.	2.7	163
10	A decade retrospective of medical robotics research from 2010 to 2020. Science Robotics, 2021, 6, eabi8017.	9.9	158
11	On the Efficiency of Electric Power Generation With Piezoelectric Ceramic. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 1999, 121, 566-571.	0.9	133
12	An Assistive Control Approach for a Lower-Limb Exoskeleton to Facilitate Recovery of Walking Following Stroke. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2015, 23, 441-449.	2.7	128
13	A Method for the Control of Multigrasp Myoelectric Prosthetic Hands. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2012, 20, 58-67.	2.7	115
14	A Control Approach for Actuated Dynamic Walking in Biped Robots. IEEE Transactions on Robotics, 2009, 25, 1292-1303.	7.3	108
15	A flexure-based gripper for small-scale manipulation. Robotica, 1999, 17, 181-187.	1.3	107
16	Design and energetic characterization of a liquid-propellant-powered actuator for self-powered robots. IEEE/ASME Transactions on Mechatronics, 2003, 8, 254-262.	3.7	103
17	Realizing the Promise of Robotic Leg Prostheses. Science Translational Medicine, 2013, 5, 210ps15.	5.8	94
18	Preliminary evaluation of a controlled-brake orthosis for FES-aided gait. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2003, 11, 241-248.	2.7	84

#	ARTICLE	IF	CITATIONS
19	Design of a controlled-brake orthosis for FES-aided gait. IEEE Transactions on Rehabilitation Engineering: A Publication of the IEEE Engineering in Medicine and Biology Society, 1996, 4, 13-24.	1.4	80
20	A Well-Behaved Revolute Flexure Joint for Compliant Mechanism Design. Journal of Mechanical Design, Transactions of the ASME, 1999, 121, 424-429.	1.7	72
21	Nonlinear Model-Based Control of Pulse Width Modulated Pneumatic Servo Systems. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2006, 128, 663-669.	0.9	71
22	Transparency and Stability Robustness in Two-Channel Bilateral Telemanipulation. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2001, 123, 400-407.	0.9	68
23	A Multigrasp Hand Prosthesis for Providing Precision and Conformal Grasps. IEEE/ASME Transactions on Mechatronics, 2015, 20, 1697-1704.	3.7	67
24	A Gas-Actuated Anthropomorphic Prosthesis for Transhumeral Amputees. , 2008, 24, 159-169.		61
25	Simultaneous Force and Stiffness Control of a Pneumatic Actuator. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2007, 129, 425-434.	0.9	60
26	A Phase Variable Approach for IMU-Based Locomotion Activity Recognition. IEEE Transactions on Biomedical Engineering, 2018, 65, 1330-1338.	2.5	59
27	Design and Control of a Powered Knee and Ankle Prosthesis. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	51
28	A Stair Ascent and Descent Controller for a Powered Ankle Prosthesis. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2018, 26, 993-1002.	2.7	49
29	Control and Evaluation of a Powered Transfemoral Prosthesis for Stair Ascent. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2017, 25, 917-924.	2.7	48
30	Loop Shaping for Transparency and Stability Robustness in Bilateral Telemanipulation. IEEE Transactions on Automation Science and Engineering, 2004, 20, 620-624.	2.4	45
31	A Controller for Guiding Leg Movement During Overground Walking With a Lower Limb Exoskeleton. IEEE Transactions on Robotics, 2018, 34, 183-193.	7.3	45
32	A Velocity-Field-Based Controller for Assisting Leg Movement During Walking With a Bilateral Hip and Knee Lower Limb Exoskeleton. IEEE Transactions on Robotics, 2019, 35, 307-316.	7.3	44
33	The effect of force saturation on the haptic perception of detail. IEEE/ASME Transactions on Mechatronics, 2002, 7, 280-288.	3.7	42
34	Design of a Semipowered Stance-Control Swing-Assist Transfemoral Prosthesis. IEEE/ASME Transactions on Mechatronics, 2020, 25, 175-184.	3.7	41
35	Design and energetic characterization of a proportional-injector monopropellant-powered actuator. IEEE/ASME Transactions on Mechatronics, 2006, 11, 196-204.	3.7	40
36	IMU-Based Wrist Rotation Control of a Radial Myoelectric Prosthesis. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2018, 26, 419-427.	2.7	40

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37	A compliant-mechanism-based three degree-of-freedom manipulator for small-scale manipulation. <i>Robotica</i> , 2000, 18, 95-104.	1.3	37
38	A Unified Controller for Walking on Even and Uneven Terrain With a Powered Ankle Prosthesis. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2018, 26, 788-797.	2.7	37
39	Sliding mode approach to PWM-controlled pneumatic systems. , 2002, , .		35
40	Dynamic Constraint-Based Energy-Saving Control of Pneumatic Servo Systems. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , 2006, 128, 655-662.	0.9	34
41	Design of a Myoelectric Transhumeral Prosthesis. <i>IEEE/ASME Transactions on Mechatronics</i> , 2016, 21, 1868-1879.	3.7	34
42	A novel system for introducing precisely-controlled, unanticipated gait perturbations for the study of stumble recovery. <i>Journal of NeuroEngineering and Rehabilitation</i> , 2019, 16, 69.	2.4	34
43	Dimensional analysis and selective distortion in scaled bilateral telemanipulation. , 0, , .		33
44	Energy Saving in Pneumatic Servo Control Utilizing Interchamber Cross-Flow. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , 2007, 129, 303-310.	0.9	32
45	Preliminary evaluation of a walking controller for a powered ankle prosthesis. , 2013, , .		32
46	Control Design for Relative Stability in a PWM-Controlled Pneumatic System. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , 2003, 125, 504-508.	0.9	31
47	Design of a Multigrasp Transradial Prosthesis. <i>Journal of Medical Devices, Transactions of the ASME</i> , 2011, 5, .	0.4	30
48	Impact of Powered Knee-Ankle Prosthesis on Low Back Muscle Mechanics in Transfemoral Amputees: A Case Series. <i>Frontiers in Neuroscience</i> , 2018, 12, 134.	1.4	30
49	The Effect of Virtual Surface Stiffness on the Haptic Perception of Detail. <i>IEEE/ASME Transactions on Mechatronics</i> , 2004, 9, 448-454.	3.7	29
50	Design and preliminary assessment of Vanderbilt hand exoskeleton. , 2017, 2017, 1537-1542.		26
51	Supplemental Stimulation Improves Swing Phase Kinematics During Exoskeleton Assisted Gait of SCI Subjects With Severe Muscle Spasticity. <i>Frontiers in Neuroscience</i> , 2018, 12, 374.	1.4	26
52	Behavioral implications of piezoelectric stack actuators for control of micromanipulation. , 0, , .		25
53	Design, control, and energetic characterization of a solenoid-injected monopropellant-powered actuator. <i>IEEE/ASME Transactions on Mechatronics</i> , 2006, 11, 477-487.	3.7	25
54	Design of a multifunctional anthropomorphic prosthetic hand with extrinsic actuation. , 2009, , .		23

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55	Real-time Intent Recognition for a Powered Knee and Ankle Transfemoral Prosthesis. , 2007, , .		22
56	Design, Control, and Preliminary Assessment of a Multifunctional Semipowered Ankle Prosthesis. IEEE/ASME Transactions on Mechatronics, 2019, 24, 1532-1540.	3.7	22
57	A Semi-Powered Ankle Prosthesis and Unified Controller for Level and Sloped Walking. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2021, 29, 320-329.	2.7	22
58	On the enhanced passivity of pneumatically actuated impedance-type haptic interfaces. , 2006, 22, 470-480.		21
59	Design and performance characterization of a hand orthosis prototype to aid activities of daily living in a post-stroke population. , 2015, 2015, 3877-80.		19
60	A Pneumatically Actuated Quadrupedal Walking Robot. IEEE/ASME Transactions on Mechatronics, 2014, 19, 339-347.	3.7	18
61	An implementation of loop-shaping compensation for multidegree-of-freedom macro-microscaled telemanipulation. IEEE Transactions on Control Systems Technology, 2005, 13, 459-464.	3.2	17
62	A Unified Force Controller for a Proportional-Injector Direct-Injection Monopropellant-Powered Actuator. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2006, 128, 159-164.	0.9	17
63	Design of a Multidisc Electromechanical Brake. IEEE/ASME Transactions on Mechatronics, 2011, 16, 985-993.	3.7	17
64	Impedance & Admittance-Based Coordination Control Strategies for Robotic Lower Limb Prostheses. Mechanical Engineering, 2014, 136, S12-S17.	0.0	17
65	Synergistic Elbow Control for a Myoelectric Transhumeral Prosthesis. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2018, 26, 468-476.	2.7	17
66	Design of a PZT-actuated proportional drum brake. IEEE/ASME Transactions on Mechatronics, 1999, 4, 409-416.	3.7	16
67	Position control of a compliant mechanism based micromanipulator. , 0, , .		15
68	Decomposition-Based Control for a Powered Knee and Ankle Transfemoral Prosthesis. , 2007, , .		15
69	A Single-Joint Implementation of Flow Control: Knee Joint Walking Assistance for Individuals With Mobility Impairment. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2020, 28, 934-942.	2.7	15
70	A method for simultaneously increasing transparency and stability robustness in bilateral telemanipulation. , 0, , .		14
71	Optimal Transmission Ratio Selection for Electric Motor Driven Actuators With Known Output Torque and Motion Trajectories. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2017, 139, .	0.9	14
72	Preliminary Assessment of a Hand and Arm Exoskeleton for Enabling Bimanual Tasks for Individuals With Hemiparesis. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2020, 28, 2214-2223.	2.7	14

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73	Evaluation of a coordinated control system for a pair of powered transfemoral prostheses. , 2013, , .		13
74	Implementation of loop-shaping compensators to increase the transparency bandwidth of a scaled telemanipulation system. , 0, , .		12
75	Metabolics of stair ascent with a powered transfemoral prosthesis. , 2015, 2015, 5307-10.		12
76	Force saturation, system bandwidth, information transfer, and surface quality in haptic interfaces. , 0, , .		11
77	Design of a simplified compliant anthropomorphic robot hand. , 2017, , .		11
78	Effect of a Swing-Assist Knee Prosthesis on Stair Ambulation. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2021, 29, 2046-2054.	2.7	11
79	On the Basis for Stumble Recovery Strategy Selection in Healthy Adults. Journal of Biomechanical Engineering, 2021, 143, .	0.6	11
80	Nonlinear averaging applied to the control of pulse width modulated (PWM) pneumatic systems. , 2004, , .		11
81	Similarity and Invariance in Scaled Bilateral Telemanipulation. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 1999, 121, 79-87.	0.9	10
82	Monopropellant powered actuators for use in autonomous human-scaled robotics. , 0, , .		10
83	Energy saving control for pneumatic servo systems. , 0, , .		10
84	Loop Shaping for Transparency and Stability Robustness in Time-Delayed Bilateral Telemanipulation. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2004, 126, 650-656.	0.9	10
85	Design and Preliminary Assessment of Lightweight Swing-Assist Knee Prosthesis. , 2018, 2018, 3198-3201.		10
86	Enhanced Performance and Stability in Pneumatic Servosystems With Supplemental Mechanical Damping. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2010, 132, .	0.9	9
87	Design and Assist-As-Needed Control of a Lightly Powered Prosthetic Knee. IEEE Transactions on Medical Robotics and Bionics, 2022, 4, 490-501.	2.1	9
88	Independent Stiffness and Force Control of Pneumatic Actuators for Contact Stability during Robot Manipulation. , 0, , .		8
89	On the design of power gear trains: Insight regarding number of stages and their respective ratios. PLoS ONE, 2018, 13, e0198048.	1.1	8
90	Variable Geometry Stair Ascent and Descent Controller for a Powered Lower Limb Exoskeleton. Journal of Medical Devices, Transactions of the ASME, 2018, 12, .	0.4	8

#	ARTICLE	IF	CITATIONS
91	Design and Energetic Characterization of a Solenoid Injected Liquid Monopropellant Powered Actuator for Self-Powered Robots. , 0, , .		7
92	Design of a minimum surface-effect three degree-of-freedom micromanipulator. , 0, , .		6
93	Multivariable Loop-Shaping in Bilateral Telemanipulation. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2006, 128, 482-488.	0.9	6
94	Swing-Assist for Enhancing Stair Ambulation in a Primarily-Passive Knee Prosthesis. , 2020, , .		6
95	On Using a Brushless Motor as a Passive Torque-Controllable Brake. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2022, 144, .	0.9	6
96	A Biologically Inspired Approach to the Coordination of Hexapedal Gait. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	5
97	Design of a power-asymmetric actuator for a transtibial prosthesis. , 2017, 2017, 1531-1536.		5
98	Feasibility Study of a Fall Prevention Cold Gas Thruster. , 2020, , .		5
99	Eliminating non-smooth nonlinearities with compliant manipulator design. , 1998, , .		4
100	Predictive Control for Time-Delayed Switching Control Systems. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2006, 128, 999-1004.	0.9	4
101	A controller for dynamic walking in bipedal robots. , 2009, , .		4
102	Actuated dynamic walking in biped robots: Control approach, robot design and experimental validation. , 2009, , .		4
103	Functional assessment of a Multigrasp Myoelectric prosthesis: An amputee case study. , 2013, , .		4
104	A Velocity-Based Flow Field Control Approach for Reshaping Movement of Stroke-Impaired Individuals with a Lower-Limb Exoskeleton. , 2018, 2018, 2797-2800.		4
105	The role of pressure sensors in the servo control of pneumatic actuators. , 0, , .		3
106	Development of a hot gas actuator for self-powered robots. , 0, , .		3
107	Design and Characterization of a Five-Chamber Constant-Volume Hydraulic Actuator. International Journal of Fluid Power, 0, , .	0.7	3
108	Analysis and design approach to inchworm robotic insects. , 0, , .		2

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109	Design and control of a biomimetic hexapedal walker. , 2008, , .		2
110	Design of a minimum surface-effect tendon-based microactuator for micromanipulation. , 0, , .		1
111	Progress Towards the Development of a Highly Functional Anthropomorphic Transhumeral Prosthesis. , 2007, , .		1
112	A Preliminary Study on the Feasibility of Using a Knee Exoskeleton to Reduce Crouch Gait in an Adult with Cerebral Palsy. , 2020, , .		1
113	Model Based Design of a Low Cost and Compliant Low Profile Prosthetic Foot. Journal of Biomechanical Engineering, 2021, 144, .	0.6	1
114	Sliding mode control of a direct-injection monopropellant-powered actuator. , 2004, , .		1
115	Guest EditorialIntroduction to the Focused Section on Anthropomorphism in Mechatronic Systems. IEEE/ASME Transactions on Mechatronics, 2009, 14, 641-646.	3.7	0
116	Design and control of a pneumatic quadrupedal walking robot. , 2011, , .		0