

Gerald E Loeb

List of Publications by Year in descending order

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155
papers

6,906
citations

76326

40
h-index

79698

73
g-index

161
all docs

161
docs citations

161
times ranked

4878
citing authors

#	ARTICLE	IF	CITATIONS
1	A model for self-organization of sensorimotor function: the spinal monosynaptic loop. Journal of Neurophysiology, 2022, 127, 1460-1477.	1.8	8
2	A Model for Self-Organization of Sensorimotor Function: Spinal Interneuronal Integration. Journal of Neurophysiology, 2022, , .	1.8	4
3	Spinal Cord, Integrated (Non CPG) Models of. , 2022, , 3270-3281.		0
4	Physiology and Computational Principles of Muscle Force Generation. , 2022, , 2779-2795.		1
5	Learning to Use Muscles. Journal of Human Kinetics, 2021, 76, 9-33.	1.5	12
6	Shoulder kinematics plus contextual target information enable control of multiple distal joints of a simulated prosthetic arm and hand. Journal of NeuroEngineering and Rehabilitation, 2021, 18, 3.	4.6	13
7	Force variability is mostly not motor noise: Theoretical implications for motor control. PLoS Computational Biology, 2021, 17, e1008707.	3.2	17
8	The influence of temporal predictability on express visuomotor responses. Journal of Neurophysiology, 2021, 125, 731-747.	1.8	20
9	A new approach to medical diagnostic decision support. Journal of Biomedical Informatics, 2021, 116, 103723.	4.3	8
10	A Non-spiking Neuron Model With Dynamic Leak to Avoid Instability in Recurrent Networks. Frontiers in Computational Neuroscience, 2021, 15, 656401.	2.1	5
11	Trial-by-trial modulation of express visuomotor responses induced by symbolic or barely detectable cues. Journal of Neurophysiology, 2021, 126, 1507-1523.	1.8	14
12	Turning Neural Prosthetics Into Viable Products. Frontiers in Robotics and AI, 2021, 8, 754114.	3.2	3
13	insideOut: A Bio-Inspired Machine Learning Approach to Estimating Posture in Robots Driven by Compliant Tendons. Frontiers in Neurorobotics, 2021, 15, 679122.	2.8	3
14	Evaluating the use of a tactile sensor for measuring carton compliance. Nordic Pulp and Paper Research Journal, 2020, 35, 362-369.	0.7	1
15	Prenatal diagnosis and management of congenital complete heart block. Birth Defects Research, 2019, 111, 380-388.	1.5	38
16	Neural Prosthetics: A Review of Empirical vs. Systems Engineering Strategies. Applied Bionics and Biomechanics, 2018, 2018, 1-17.	1.1	30
17	Learning Manipulation Graphs from Demonstrations Using Multimodal Sensory Signals. , 2018, , .		14
18	Minimally Invasive Implantation of a Micropacemaker Into the Pericardial Space. Circulation: Arrhythmia and Electrophysiology, 2018, 11, e006307.	4.8	13

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19	Relationships between full-day arm movement characteristics and developmental status in infants with typical development as they learn to reach: An observational study. <i>Gates Open Research</i> , 2018, 2, 17.	1.1	9
20	Neuromorphic meets neuromechanics, part II: the role of fusimotor drive. <i>Journal of Neural Engineering</i> , 2017, 14, 025002.	3.5	22
21	Analytical Modeling for Computing Lead Stress in a Novel Epicardial Micropacemaker. <i>Cardiovascular Engineering and Technology</i> , 2017, 8, 96-105.	1.6	3
22	Muscle and Limb Mechanics. , 2017, 7, 429-462.		14
23	Accelerated life-test methods and results for implantable electronic devices with adhesive encapsulation. <i>Biomedical Microdevices</i> , 2017, 19, 46.	2.8	16
24	Minimally invasive implantable fetal micropacemaker: mechanical testing and technical refinements. <i>Medical and Biological Engineering and Computing</i> , 2016, 54, 1819-1830.	2.8	8
25	Learning to Switch Between Sensorimotor Primitives Using Multimodal Haptic Signals. <i>Lecture Notes in Computer Science</i> , 2016, , 170-182.	1.3	11
26	Force estimation and slip detection/classification for grip control using a biomimetic tactile sensor. , 2015, , .		136
27	Major remaining gaps in models of sensorimotor systems. <i>Frontiers in Computational Neuroscience</i> , 2015, 9, 70.	2.1	19
28	Preclinical testing and optimization of a novel fetal micropacemaker. <i>Heart Rhythm</i> , 2015, 12, 1683-1690.	0.7	22
29	Bayesian Action&Perception: Representing the World in the Brain. <i>Frontiers in Neuroscience</i> , 2014, 8, 341.	2.8	22
30	A percutaneously implantable fetal pacemaker. , 2014, 2014, 4459-63.		7
31	Spinal Cord, Integrated (Non CPG) Models of. , 2014, , 1-13.		4
32	Using the BioTac as a tumor localization tool. , 2014, , .		17
33	Useful properties of spinal circuits for learning and performing planar reaches. <i>Journal of Neural Engineering</i> , 2014, 11, 056006.	3.5	40
34	Physiology and Computational Principles of Muscle Force Generation. , 2014, , 1-18.		3
35	Multimodal Tactile Sensor. <i>Springer Tracts in Advanced Robotics</i> , 2014, , 405-429.	0.4	37
36	Elastomeric skin selection for a fluid-filled artificial fingertip. <i>Journal of Applied Polymer Science</i> , 2013, 127, 4624-4633.	2.6	14

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37	Evaluation of a Noninvasive Command Scheme for Upper-Limb Prostheses in a Virtual Reality Reach and Grasp Task. IEEE Transactions on Biomedical Engineering, 2013, 60, 792-802.	4.2	35
38	Sparse Optimal Motor Estimation (SOME) for Extracting Commands for Prosthetic Limbs. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2013, 21, 104-111.	4.9	5
39	Design and Testing of a Percutaneously Implantable Fetal Pacemaker. Annals of Biomedical Engineering, 2013, 41, 17-27.	2.5	18
40	Utility of contact detection reflexes in prosthetic hand control. , 2013, , .		16
41	Tactile identification of objects using Bayesian exploration. , 2013, , .		117
42	Are muscle synergies useful for neural control?. Frontiers in Computational Neuroscience, 2013, 7, 19.	2.1	86
43	Development of a Physics-Based Target Shooting Game to Train Amputee Users of Multijoint Upper Limb Prostheses. Presence: Teleoperators and Virtual Environments, 2012, 21, 85-95.	0.6	17
44	Percutaneously injectable fetal pacemaker: Electrodes, mechanical design and implantation. , 2012, 2012, 6600-3.		2
45	Sensing tactile microvibrations with the BioTac — Comparison with human sensitivity. , 2012, , .		94
46	Estimation of excitatory drive from sparse motoneuron sampling. , 2012, 2012, 3628-31.		1
47	Cognitive signals for brain-machine interfaces in posterior parietal cortex include continuous 3D trajectory commands. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 17075-17080.	7.1	87
48	Percutaneously injectable fetal pacemaker: Electronics, pacing thresholds, and power budget. , 2012, 2012, 5730-3.		1
49	Dissemination: Getting BCIs to the People Who Need Them. , 2012, , 338-349.		1
50	Virtual biomechanics: a new method for online reconstruction of force from EMG recordings. Journal of Neurophysiology, 2012, 108, 3333-3341.	1.8	14
51	Natural and Accelerated Recovery from Brain Damage: Experimental and Theoretical Approaches. IEEE Pulse, 2012, 3, 61-65.	0.3	1
52	Toward Perceiving Robots as Humans: Three Handshake Models Face the Turing-Like Handshake Test. IEEE Transactions on Haptics, 2012, 5, 196-207.	2.7	52
53	Haptic Human-Robot Interaction. IEEE Transactions on Haptics, 2012, 5, 193-195.	2.7	3
54	Optimal isn't good enough. Biological Cybernetics, 2012, 106, 757-765.	1.3	165

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55	A Two-Joint Human Posture Control Model With Realistic Neural Delays. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2012, 20, 738-748.	4.9	34
56	Muscle Coordination Is Habitual Rather than Optimal. Journal of Neuroscience, 2012, 32, 7384-7391.	3.6	197
57	Bayesian Exploration for Intelligent Identification of Textures. Frontiers in Neurobotics, 2012, 6, 4.	2.8	280
58	Use of tactile feedback to control exploratory movements to characterize object compliance. Frontiers in Neurobotics, 2012, 6, 7.	2.8	85
59	BioTac [^] [^] mdash;Biomimetic Multi-modal Tactile Sensor [^] [^] mdash;. Journal of the Robotics Society of Japan, 2012, 30, 496-498.	0.1	8
60	Mammalian Muscle Model for Predicting Force and Energetics During Physiological Behaviors. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2012, 20, 117-133.	4.9	43
61	Real-Time Animation Software for Customized Training to Use Motor Prosthetic Systems. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2012, 20, 134-142.	4.9	25
62	Cortical control of reach and grasp kinematics in a virtual environment using musculoskeletal modeling software. , 2011, , .		10
63	Preventing Ischial Pressure Ulcers: II. Biomechanics. Applied Bionics and Biomechanics, 2011, 8, 333-343.	1.1	1
64	Preventing Ischial Pressure Ulcers: III. Clinical Pilot Study of Chronic Neuromuscular Electrical Stimulation. Applied Bionics and Biomechanics, 2011, 8, 345-359.	1.1	3
65	Modeling the potentiality of spinal-like circuitry for stabilization of a planar arm system. Progress in Brain Research, 2011, 194, 203-213.	1.4	17
66	Understanding haptics by evolving mechatronic systems. Progress in Brain Research, 2011, 192, 129-144.	1.4	14
67	Haptic feature extraction from a biomimetic tactile sensor: Force, contact location and curvature. , 2011, , .		62
68	Is There an Equilibrium Point Hypothesis?. Motor Control, 2010, 14, e19-e22.	0.6	0
69	Spinal-Like Regulator Facilitates Control of a Two-Degree-of-Freedom Wrist. Journal of Neuroscience, 2010, 30, 9431-9444.	3.6	84
70	Percutaneous fiber-optic sensor for the detection of chemotherapy-induced apoptosis in vivo. Proceedings of SPIE, 2010, , .	0.8	2
71	Taking Control of Prosthetic Arms. JAMA - Journal of the American Medical Association, 2009, 301, 670.	7.4	7
72	Design and Fabrication of an Injection Tool for Neuromuscular Microstimulators. Annals of Biomedical Engineering, 2009, 37, 1858-1870.	2.5	7

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73	Signal processing and fabrication of a biomimetic tactile sensor array with thermal, force and microvibration modalities. , 2009, , .		58
74	Grip Control Using Biomimetic Tactile Sensing Systems. IEEE/ASME Transactions on Mechatronics, 2009, 14, 718-723.	5.8	108
75	Percutaneous fiber-optic sensor for chronic glucose monitoring in vivo. Biosensors and Bioelectronics, 2008, 23, 1458-1465.	10.1	73
76	Single- and Triaxis Piezoelectric-Bimorph Accelerometers. Journal of Microelectromechanical Systems, 2008, 17, 45-57.	2.5	76
77	Prediction of Distal Arm Posture in 3-D Space From Shoulder Movements for Control of Upper Limb Prostheses. Proceedings of the IEEE, 2008, 96, 1217-1225.	21.3	19
78	Predicting EMG with generalized Volterra kernel model. , 2008, 2008, 201-4.		10
79	Deformable skin design to enhance response of a biomimetic tactile sensor. , 2008, , .		20
80	A robust micro-vibration sensor for biomimetic fingertips. , 2008, , .		64
81	General-pupose technology for a general-purpose nervous system. , 2008, , .		1
82	A FAILURE ANALYSIS OF INTRAMUSCULAR RIGID IMPLANTS FOR MUSCLE CONTRACTIONS. Modern Physics Letters B, 2008, 22, 791-796.	1.9	1
83	On the use of musculoskeletal models to interpret motor control strategies from performance data. Journal of Neural Engineering, 2008, 5, 232-253.	3.5	19
84	PREDICTION OF ELBOW TRAJECTORY FROM SHOULDER ANGLES USING NEURAL NETWORKS. International Journal of Computational Intelligence and Applications, 2008, 07, 333-349.	0.8	5
85	Biomimetic Tactile Sensor Array. Advanced Robotics, 2008, 22, 829-849.	1.8	305
86	Biomimetic Tactile Sensor for Control of Grip. , 2007, , .		15
87	Flexible Communication and Control Protocol for Injectable Neuromuscular Interfaces. IEEE Transactions on Biomedical Circuits and Systems, 2007, 1, 19-27.	4.0	7
88	Development of a BIONic Muscle Spindle for Prosthetic Proprioception. IEEE Transactions on Biomedical Engineering, 2007, 54, 1031-1041.	4.2	15
89	A Virtual Reality Environment for Designing and Fitting Neural Prosthetic Limbs. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2007, 15, 9-15.	4.9	75
90	Feasibility of Prosthetic Posture Sensing Via Injectable Electronic Modules. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2007, 15, 295-309.	4.9	10

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91	Recruitment and Comfort of BION Implanted Electrical Stimulation: Implications for FES Applications. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2007, 15, 577-586.	4.9	14
92	Model-Based Development of Neural Prostheses for Movement. IEEE Transactions on Biomedical Engineering, 2007, 54, 1909-1918.	4.2	54
93	Mechanical loading of rigid intramuscular implants. Biomedical Microdevices, 2007, 9, 901-910.	2.8	7
94	Biomimetic Tactile Sensor. , 2007, , .		1
95	Design and fabrication of a disposable, percutaneous glucose sensor. , 2006, , .		1
96	Mathematical Models of Proprioceptors. I. Control and Transduction in the Muscle Spindle. Journal of Neurophysiology, 2006, 96, 1772-1788.	1.8	166
97	The BION devices: injectable interfaces with peripheral nerves and muscles. Neurosurgical Focus, 2006, 20, 1-9.	2.3	74
98	Mathematical Models of Proprioceptors. II. Structure and Function of the Golgi Tendon Organ. Journal of Neurophysiology, 2006, 96, 1789-1802.	1.8	80
99	BCI meeting 2005-workshop on signals and recording methods. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2006, 14, 138-141.	4.9	97
100	The Effects of Training Set on Prediction of Elbow Trajectory from Shoulder Trajectory during Reaching to Targets. , 2006, 2006, 5483-6.		3
101	The Effects of Training Set on Prediction of Elbow Trajectory from Shoulder Trajectory during Reaching to Targets. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0
102	Design and fabrication of disposable percutaneous chemical sensors. , 2005, , .		8
103	Are Cochlear Implant Patients Suffering From Perceptual Dissonance?. Ear and Hearing, 2005, 26, 435-450.	2.1	23
104	The functional reanimation of paralyzed limbs. IEEE Engineering in Medicine and Biology Magazine, 2005, 24, 45-51.	0.8	39
105	BIONic WalkAide for correcting foot drop. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2005, 13, 242-246.	4.9	77
106	Biomimetic Posture Sensing and Feedback for Proprioception. , 2005, 2005, 7389-92.		4
107	Galvani's delayed legacy: neuromuscular electrical stimulation. Expert Review of Medical Devices, 2005, 2, 379-381.	2.8	4
108	First Clinical Experience with BION Implants for Therapeutic Electrical Stimulation. Neuromodulation, 2004, 7, 38-47.	0.8	59

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109	Prevention of muscle disuse atrophy by low-frequency electrical stimulation in rats. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2003, 11, 218-226.	4.9	44
110	Effects of muscle immobilization at different lengths on tetrodotoxin-induced disuse atrophy. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2003, 11, 209-217.	4.9	14
111	A Software Tool for Faster Development of Complex Models of Musculoskeletal Systems and Sensorimotor Controllers in Simulink™. Journal of Applied Biomechanics, 2002, 18, 357-365.	0.8	26
112	The Importance of Biomechanics. Advances in Experimental Medicine and Biology, 2002, 508, 481-487.	1.6	9
113	BIONâ,ç system for distributed neural prosthetic interfaces. Medical Engineering and Physics, 2001, 23, 9-18.	1.7	231
114	Real-time sonography to estimate muscle thickness: Comparison with MRI and CT. Journal of Clinical Ultrasound, 2001, 29, 230-236.	0.8	154
115	Overcomplete Musculature or Underspecified Tasks?. Motor Control, 2000, 4, 81-83.	0.6	29
116	Virtual muscle: a computational approach to understanding the effects of muscle properties on motor control. Journal of Neuroscience Methods, 2000, 101, 117-130.	2.5	169
117	Measured and modeled properties of mammalian skeletal muscle: III. the effects of stimulus frequency on stretch-induced force enhancement and shortening-induced force depression. , 2000, 21, 21-31.		42
118	Measured and modeled properties of mammalian skeletal muscle: IV. dynamics of activation and deactivation. , 2000, 21, 33-47.		85
119	What do reflex and voluntary mean? Modern views on an ancient debate. Experimental Brain Research, 2000, 130, 417-432.	1.5	151
120	A Reductionist Approach to Creating and Using Neuromusculoskeletal Models. , 2000, , 148-163.		121
121	BIONâ,ç Implants for Therapeutic and Functional Electrical Stimulation. Frontiers in Neuroscience, 2000, , .	0.0	15
122	Measured and modeled properties of mammalian skeletal muscle. II. The effects of stimulus frequency on force-length and force-velocity relationships. Journal of Muscle Research and Cell Motility, 1999, 20, 627-643.	2.0	133
123	Measured and modeled properties of mammalian skeletal muscle. I. The effects of post-activation potentiation on the time course and velocity dependencies of force production. , 1999, 20, 443-456.		54
124	Chapter 36 What might the Brain Know about Muscles, Limbs and Spinal Circuits?. Progress in Brain Research, 1999, 123, 405-409.	1.4	14
125	Relating Muscle Activity to Movement in Animals. , 1999, , 777-786.		0
126	The effect of sarcomere length on triad location in intact feline caudofemoralis muscle fibres. Journal of Muscle Research and Cell Motility, 1998, 19, 473-477.	2.0	12

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127	Feline caudofemoralis muscle. <i>Experimental Brain Research</i> , 1998, 121, 76-91.	1.5	45
128	Design for an Inexpensive but Effective Cochlear Implant. <i>Otolaryngology - Head and Neck Surgery</i> , 1998, 118, 235-241.	1.9	12
129	Post-Activation Potentiation—A Clue for Simplifying Models of Muscle Dynamics. <i>American Zoologist</i> , 1998, 38, 743-754.	0.7	50
130	Directional motor control. <i>Trends in Neurosciences</i> , 1996, 19, 137-138.	8.6	11
131	Mechanics of feline soleus: I. Effect of fascicle length and velocity on force output. <i>Journal of Muscle Research and Cell Motility</i> , 1996, 17, 207-219.	2.0	104
132	Mechanics of feline soleus: II design and validation of a mathematical model. <i>Journal of Muscle Research and Cell Motility</i> , 1996, 17, 221-233.	2.0	108
133	An Information Highway To the Auditory Nerve. <i>Seminars in Hearing</i> , 1996, 17, 309-316.	1.2	5
134	Relationships between range of motion, Lo, and passive force in five strap-like muscles of the feline hind limb. <i>Journal of Morphology</i> , 1996, 230, 69-77.	1.2	55
135	What can we expect from models of motor control?. <i>Behavioral and Brain Sciences</i> , 1995, 18, 767-768.	0.7	0
136	Mechanical properties of aponeurosis and tendon of the cat soleus muscle during whole-muscle isometric contractions. <i>Journal of Morphology</i> , 1995, 224, 73-86.	1.2	137
137	Architectural features of multiarticular muscles. <i>Human Movement Science</i> , 1994, 13, 545-556.	1.4	6
138	Why cats pace on the treadmill. <i>Physiology and Behavior</i> , 1993, 53, 501-507.	2.1	42
139	Multichannel FES system with distributed microstimulators. , 1992, , .		2
140	Issues in Cochlear Prosthetics From an International Survey of Opinions. <i>International Journal of Technology Assessment in Health Care</i> , 1991, 7, 403-410.	0.5	5
141	Architecture and consequent physiological properties of the semitendinosus muscle in domestic goats. <i>Journal of Morphology</i> , 1989, 199, 287-297.	1.2	144
142	Neural prosthetic interfaces with the nervous system. <i>Trends in Neurosciences</i> , 1989, 12, 195-201.	8.6	49
143	Motor partitioning: Epiphenomena masquerading as control theory. <i>Behavioral and Brain Sciences</i> , 1989, 12, 660-661.	0.7	5
144	Hard lessons in motor control from the mammalian spinal cord. <i>Trends in Neurosciences</i> , 1987, 10, 108-113.	8.6	138

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145	The Functional Replacement of the Ear. Scientific American, 1985, 252, 104-111.	1.0	40
146	Optimal control principles for sensory transducers. , 1985, , 409-415.		17
147	The Control and Responses of Mammalian Muscle Spindles During Normally Executed Motor Tasks. Exercise and Sport Sciences Reviews, 1984, 12, 157-204.	3.0	315
148	Spatial cross-correlation. Biological Cybernetics, 1983, 47, 149-163.	1.3	118
149	BIOPHYSICAL CONSIDERATIONS IN ELECTRICAL STIMULATION OF THE AUDITORY NERVOUS SYSTEM. Annals of the New York Academy of Sciences, 1983, 405, 123-136.	3.8	53
150	Finding common ground between robotics and physiology. Trends in Neurosciences, 1983, 6, 203-204.	8.6	32
151	Parylene as a Chronically Stable, Reproducible Microelectrode Insulator. IEEE Transactions on Biomedical Engineering, 1977, BME-24, 121-128.	4.2	228
152	Ventral root projections of myelinated dorsal root ganglion cells in the cat. Brain Research, 1976, 106, 159-165.	2.2	37
153	Decreased conduction velocity in the proximal projections of myelinated dorsal root ganglion cells in the cat. Brain Research, 1976, 103, 381-385.	2.2	42
154	Biomimetic design of neural prostheses. , 0, , 587-601.		1
155	Developing Intelligent Robots that Grasp Affordance. Frontiers in Robotics and AI, 0, 9, .	3.2	2