Nitin Sharma

List of Publications by Year
in descending order

85	1,637	331259	329751
papers	citations	21	37
		h-index	g-index

86	86	86	797
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Nonlinear Neuromuscular Electrical Stimulation Tracking Control of a Human Limb. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2009, 17, 576-584.	2.7	127
2	Predictor-based control for an uncertain Euler–Lagrange system with input delay. Automatica, 2011, 47, 2332-2342.	3.0	116
3	Predictor-Based Compensation for Electromechanical Delay During Neuromuscular Electrical Stimulation. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2011, 19, 601-611.	2.7	85
4	Saturated control of an uncertain nonlinear system with input delay. Automatica, 2013, 49, 1741-1747.	3.0	85
5	Closed-Loop Neural Network-Based NMES Control for Human Limb Tracking. IEEE Transactions on Control Systems Technology, 2012, 20, 712-725.	3.2	82
6	Nonlinear model predictive control of functional electrical stimulation. Control Engineering Practice, 2017, 58, 319-331.	3.2	73
7	Model-Based Dynamic Control Allocation in a Hybrid Neuroprosthesis. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2018, 26, 224-232.	2.7	66
8	RISE-Based Adaptive Control of a Control Affine Uncertain Nonlinear System With Unknown State Delays. IEEE Transactions on Automatic Control, 2012, 57, 255-259.	3.6	59
9	An adaptive low-dimensional control to compensate for actuator redundancy and FES-induced muscle fatigue in a hybrid neuroprosthesis. Control Engineering Practice, 2017, 59, 204-219.	3.2	47
10	Dynamic Optimization of FES and Orthosis-Based Walking Using Simple Models. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2014, 22, 114-126.	2.7	45
11	A Muscle Synergy-Inspired Adaptive Control Scheme for a Hybrid Walking Neuroprosthesis. Frontiers in Bioengineering and Biotechnology, 2015, 3, 203.	2.0	45
12	Prediction of Ankle Dorsiflexion Moment by Combined Ultrasound Sonography and Electromyography. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2020, 28, 318-327.	2.7	45
13	Further Results on Predictor-Based Control of Neuromuscular Electrical Stimulation. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2015, 23, 1095-1105.	2.7	44
14	Asymptotic tracking by a reinforcement learning-based adaptive critic controller. Journal of Control Theory and Applications, 2011, 9, 400-409.	0.8	37
15	A Muscle Synergy-Inspired Control Design to Coordinate Functional Electrical Stimulation and a Powered Exoskeleton: Artificial Generation of Synergies to Reduce Input Dimensionality. IEEE Control Systems, 2018, 38, 35-60.	1.0	35
16	A Control Scheme That Uses Dynamic Postural Synergies to Coordinate a Hybrid Walking Neuroprosthesis: Theory and Experiments. Frontiers in Neuroscience, 2018, 12, 159.	1.4	30
17	Ultrasound Tracking of the Acoustically Actuated Microswimmer. IEEE Transactions on Biomedical Engineering, 2019, 66, 3231-3237.	2.5	26
18	A novel modulation strategy to increase stimulation duration in neuromuscular electrical stimulation. Muscle and Nerve, 2011, 44, 382-387.	1.0	25

#	Article	IF	Citations
19	Adaptive Inverse Optimal Neuromuscular Electrical Stimulation. IEEE Transactions on Cybernetics, 2013, 43, 1710-1718.	6.2	25
20	Evaluation of Non-Invasive Ankle Joint Effort Prediction Methods for Use in Neurorehabilitation Using Electromyography and Ultrasound Imaging. IEEE Transactions on Biomedical Engineering, 2021, 68, 1044-1055.	2.5	25
21	A Non-Linear Control Method to Compensate for Muscle Fatigue during Neuromuscular Electrical Stimulation. Frontiers in Robotics and AI, 2017, 4, .	2.0	24
22	Quantitative Assessment of Changes in Muscle Contractility Due to Fatigue During NMES: An Ultrasound Imaging Approach. IEEE Transactions on Biomedical Engineering, 2020, 67, 832-841.	2.5	23
23	Nonlinear Control of NMES: Incorporating Fatigue and Calcium Dynamics. , 2009, , .		22
24	A semi-active hybrid neuroprosthesis for restoring lower limb function in paraplegics. , 2014, 2014, 2557-60.		21
25	A PID-Type Robust Input Delay Compensation Method for Uncertain Euler–Lagrange Systems. IEEE Transactions on Control Systems Technology, 2017, 25, 2235-2242.	3.2	20
26	An extremum seeking method for non-isometric neuromuscular electrical stimulation. , 2007, , .		19
27	A Dual-Modal Approach Using Electromyography and Sonomyography Improves Prediction of Dynamic Ankle Movement: A Case Study. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2021, 29, 1944-1954.	2.7	19
28	An Iterative Learning Controller for a Switched Cooperative Allocation Strategy During Sit-to-Stand Tasks with a Hybrid Exoskeleton. IEEE Transactions on Control Systems Technology, 2022, 30, 1021-1036.	3.2	19
29	A Modified Dynamic Surface Controller for Delayed Neuromuscular Electrical Stimulation. IEEE/ASME Transactions on Mechatronics, 2017, 22, 1755-1764.	3.7	18
30	Dynamic optimization of stimulation frequency to reduce isometric muscle fatigue using a modified Hill–Huxley model. Muscle and Nerve, 2018, 57, 634-641.	1.0	18
31	Switching control of functional electrical stimulation and motor assist for muscle fatigue compensation. , 2016, , .		16
32	Switched control of an N-degree-of-freedom input delayed wearable robotic system. Automatica, 2021, 125, 109455.	3.0	16
33	A Tube-Based Model Predictive Control Method to Regulate a Knee Joint With Functional Electrical Stimulation and Electric Motor Assist. IEEE Transactions on Control Systems Technology, 2021, 29, 2180-2191.	3.2	14
34	Using Person-Specific Muscle Fatigue Characteristics to Optimally Allocate Control in a Hybrid Exoskeleton—Preliminary Results. IEEE Transactions on Medical Robotics and Bionics, 2020, 2, 226-235.	2.1	13
35	Personalized fusion of ultrasound and electromyography-derived neuromuscular features increases prediction accuracy of ankle moment during plantarflexion. Biomedical Signal Processing and Control, 2022, 71, 103100.	3.5	13
36	A recurrent neural network based MPC for a hybrid neuroprosthesis system. , 2017, , .		12

#	Article	IF	Citations
37	A Robust Iterative Learning Switching Controller for following Virtual Constraints: Application to a Hybrid Neuroprosthesis. IFAC-PapersOnLine, 2019, 51, 28-33.	0.5	12
38	Saturated control of an uncertain Euler-Lagrange system with input delay. , 2011, , .		11
39	Model Predictive Control-Based Dynamic Control Allocation in a Hybrid Neuroprosthesis. , 2014, , .		11
40	Dynamic surface control of neuromuscular electrical stimulation of a musculoskeletal system with activation dynamics and an input delay. , 2015, , .		10
41	Ultrasound Echogenicity as an Indicator of Muscle Fatigue during Functional Electrical Stimulation. Sensors, 2022, 22, 335.	2.1	10
42	Modified Neural Network-based Electrical Stimulation for Human Limb Tracking. , 2008, , .		9
43	Optimized Control of Different Actuation Strategies for FES and Orthosis Aided Gait. , 2013, , .		9
44	A predictor-based compensation for electromechanical delay during neuromuscular electrical stimulation-II. , 2012, , .		8
45	Optimization of a Stimulation Train based on a Predictive Model of Muscle Force and Fatigue. IFAC-PapersOnLine, 2015, 48, 338-342.	0.5	8
46	Robust compensation of electromechanical delay during neuromuscular electrical stimulation of antagonistic muscles. , 2016, , .		8
47	Model Predictive Control of a Feedback-Linearized Hybrid Neuroprosthetic System With a Barrier Penalty. Journal of Computational and Nonlinear Dynamics, 2019, 14, 101009-1010097.	0.7	8
48	Ultra-High-Frame-Rate Ultrasound Monitoring of Muscle Contractility Changes Due to Neuromuscular Electrical Stimulation. Annals of Biomedical Engineering, 2021, 49, 262-275.	1.3	8
49	Nonlinear estimation of gait kinematics during functional electrical stimulation and orthosis-based walking. , 2014, , .		7
50	Bilateral control of functional electrical stimulation and robotics-based telerehabilitation. International Journal of Intelligent Robotics and Applications, 2017, 1, 6-18.	1.6	7
51	Comparing the force– and excursion– frequency relationships in human skeletal muscle. Muscle and Nerve, 2008, 38, 1627-1629.	1.0	6
52	RISE-based control of an uncertain nonlinear system with time-varying state delays. , 2012, , .		6
53	A Nonlinear Dynamics-Based Estimator for Functional Electrical Stimulation: Preliminary Results From Lower-Leg Extension Experiments. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2017, 25, 2365-2374.	2.7	6
54	Optimal trajectory planning for a constrained functional electrical stimulation-based human walking. , 2011, 2011, 603-7.		5

#	Article	IF	Citations
55	Dynamic control allocation of a feedback linearized hybrid neuroprosthetic system. , 2016, , .		5
56	Sub-optimally solving actuator redundancy in a hybrid neuroprosthetic system with a multi-layer neural network structure. International Journal of Intelligent Robotics and Applications, 2019, 3, 298-313.	1.6	5
57	Ankle Dorsiflexion Strength Monitoring by Combining Sonomyography and Electromyography. , 2019, 2019, 240-245.		5
58	Lyapunov-based Model Predictive Control of an Input Delayed Functional Electrical Simulation. IFAC-PapersOnLine, 2019, 51, 290-295.	0.5	5
59	RISE-based adaptive control of an uncertain nonlinear system with unknown state delays. , 2010, , .		4
60	Nonlinear Model Predictive Control of Functional Electrical Stimulation. , 2015, , .		4
61	A Within-Stride Switching Controller for Walking with Virtual Constraints: Application to a Hybrid Neuroprosthesis. , 2018, , .		4
62	Nonlinear tracking control of a human limb via neuromuscular electrical stimulation. , 2008, , .		3
63	Asymptotic optimal control of neuromuscular electrical stimulation. , 2010, , .		3
64	Robust asymptotic tracking of a class of nonlinear systems using an adaptive critic based controller. , 2010, , .		3
65	Adaptive inverse optimal Neuromuscular Electrical Stimulation. , 2010, , .		3
66	Gait planning and double support phase model for functional electrical stimulation-based walking. , 2012, 2012, 1904-7.		3
67	Control of functional electrical stimulation in the presence of electromechanical and communication delays. , 2013, , .		3
68	An Adaptive Low-Dimensional Control for a Hybrid Neuroprosthesis. IFAC-PapersOnLine, 2015, 48, 303-308.	0.5	3
69	Experimental demonstration of a delay compensating controller in a hybrid walking neuroprosthesis. , 2017, , .		3
70	Hybrid Dynamical System Model and Robust Control of a Hybrid Neuroprosthesis Under Fatigue Based Switching. , 2018, , .		3
71	Hybrid Wearable Robotic Exoskeletons for Human Walking. , 2020, , 347-364.		3
72	Volitional Contractility Assessment of Plantar Flexors by Using Non-invasive Neuromuscular Measurements. , 2020, , .		3

#	Article	IF	Citations
73	Experimental demonstration of RISE-based NMES of human quadriceps muscle. , 2007, , .		2
74	An Active-Subspace-Based Algorithm for Reducing Redundancy in a Hybrid Neuroprosthesis. , 2018, , .		2
75	Tube-based Model Predictive Control of An Input Delayed Functional Electrical Stimulation. , 2019, , .		2
76	Analysis of Tremor During Grasp Using Ultrasound Imaging: Preliminary Study. , 2020, , .		2
77	Sampled-Data Observer Based Dynamic Surface Control of Delayed Neuromuscular Functional Electrical Stimulation. , 2020, , .		2
78	Observer Design for a Nonlinear Neuromuscular System with Multi-rate Sampled and Delayed Output Measurements. , 2019, , .		1
79	A Discrete-Time Nonlinear Estimator for an Orthosis-Aided Gait. , 2014, , .		1
80	Dynamic Optimization of a Hybrid Gait Neuroprosthesis to Improve Efficiency andÂWalking Duration: A Simulation Study. Biosystems and Biorobotics, 2017, , 687-691.	0.2	1
81	Expectation Maximization Method to Identify an Electrically Stimulated Musculoskeletal Model. , 2015, , .		0
82	A State Synchronization Controller for Functional Electrical Stimulation-Based Telerehabilitation. , 2014, , .		0
83	Preliminary Experiments of an Adaptive Low-Dimensional Control for a Hybrid Neuroprosthesis. Biosystems and Biorobotics, 2017, , 693-697.	0.2	0
84	An Ultrasound Imaging Based Observer for Estimating NMES-Induced Muscle Fatigue: Theory and Simulation. , 2020, , .		0
85	Continuous Switching Control of an Input-Delayed Antagonistic Muscle Pair During Functional Electrical Stimulation. IEEE Transactions on Control Systems Technology, 2023, 31, 306-316.	3.2	0