

Nitin Sharma

List of Publications by Year in descending order

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85
papers

1,637
citations

331259

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329751

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86
all docs

86
docs citations

86
times ranked

797
citing authors

#	ARTICLE	IF	CITATIONS
1	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
2	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
3	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
4	Ultrasound Echogenicity as an Indicator of Muscle Fatigue during Functional Electrical Stimulation. Sensors, 2022, 22, 335.	2.1	10
5	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
6	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
7	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
8	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
9	Switched control of an N-degree-of-freedom input delayed wearable robotic system. Automatica, 2021, 125, 109455.	3.0	16
10	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
11	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
12	Hybrid Wearable Robotic Exoskeletons for Human Walking. , 2020, , 347-364.		3
13	Analysis of Tremor During Grasp Using Ultrasound Imaging: Preliminary Study. , 2020, , .		2
14	Volitional Contractility Assessment of Plantar Flexors by Using Non-invasive Neuromuscular Measurements. , 2020, , .		3
15	Using Person-Specific Muscle Fatigue Characteristics to Optimally Allocate Control in a Hybrid Exoskeletonâ€”Preliminary Results. IEEE Transactions on Medical Robotics and Bionics, 2020, 2, 226-235.	2.1	13
16	Sampled-Data Observer Based Dynamic Surface Control of Delayed Neuromuscular Functional Electrical Stimulation. , 2020, , .		2
17	An Ultrasound Imaging Based Observer for Estimating NMES-Induced Muscle Fatigue: Theory and Simulation. , 2020, , .		0
18	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

#	ARTICLE	IF	CITATIONS
19	Ankle Dorsiflexion Strength Monitoring by Combining Sonomyography and Electromyography. , 2019, 2019, 240-245.		5
20	A Robust Iterative Learning Switching Controller for following Virtual Constraints: Application to a Hybrid Neuroprosthesis. IFAC-PapersOnLine, 2019, 51, 28-33.	0.5	12
21	Lyapunov-based Model Predictive Control of an Input Delayed Functional Electrical Stimulation. IFAC-PapersOnLine, 2019, 51, 290-295.	0.5	5
22	Ultrasound Tracking of the Acoustically Actuated Microswimmer. IEEE Transactions on Biomedical Engineering, 2019, 66, 3231-3237.	2.5	26
23	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
24	Tube-based Model Predictive Control of An Input Delayed Functional Electrical Stimulation. , 2019, , .		2
25	Observer Design for a Nonlinear Neuromuscular System with Multi-rate Sampled and Delayed Output Measurements. , 2019, , .		1
26	Model-Based Dynamic Control Allocation in a Hybrid Neuroprosthesis. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2018, 26, 224-232.	2.7	66
27	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
28	An Active-Subspace-Based Algorithm for Reducing Redundancy in a Hybrid Neuroprosthesis. , 2018, , .		2
29	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
30	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
31	Hybrid Dynamical System Model and Robust Control of a Hybrid Neuroprosthesis Under Fatigue Based Switching. , 2018, , .		3
32	A Within-Stride Switching Controller for Walking with Virtual Constraints: Application to a Hybrid Neuroprosthesis. , 2018, , .		4
33	Nonlinear model predictive control of functional electrical stimulation. Control Engineering Practice, 2017, 58, 319-331.	3.2	73
34	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
35	A Modified Dynamic Surface Controller for Delayed Neuromuscular Electrical Stimulation. IEEE/ASME Transactions on Mechatronics, 2017, 22, 1755-1764.	3.7	18
36	Bilateral control of functional electrical stimulation and robotics-based telerehabilitation. International Journal of Intelligent Robotics and Applications, 2017, 1, 6-18.	1.6	7

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37	An adaptive low-dimensional control to compensate for actuator redundancy and FES-induced muscle fatigue in a hybrid neuroprosthesis. <i>Control Engineering Practice</i> , 2017, 59, 204-219.	3.2	47
38	A Nonlinear Dynamics-Based Estimator for Functional Electrical Stimulation: Preliminary Results From Lower-Leg Extension Experiments. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2017, 25, 2365-2374.	2.7	6
39	Experimental demonstration of a delay compensating controller in a hybrid walking neuroprosthesis. , 2017, , .		3
40	A recurrent neural network based MPC for a hybrid neuroprosthesis system. , 2017, , .		12
41	A Non-Linear Control Method to Compensate for Muscle Fatigue during Neuromuscular Electrical Stimulation. <i>Frontiers in Robotics and AI</i> , 2017, 4, .	2.0	24
42	Preliminary Experiments of an Adaptive Low-Dimensional Control for a Hybrid Neuroprosthesis. <i>Biosystems and Biorobotics</i> , 2017, , 693-697.	0.2	0
43	Dynamic Optimization of a Hybrid Gait Neuroprosthesis to Improve Efficiency and Walking Duration: A Simulation Study. <i>Biosystems and Biorobotics</i> , 2017, , 687-691.	0.2	1
44	Switching control of functional electrical stimulation and motor assist for muscle fatigue compensation. , 2016, , .		16
45	Dynamic control allocation of a feedback linearized hybrid neuroprosthetic system. , 2016, , .		5
46	Robust compensation of electromechanical delay during neuromuscular electrical stimulation of antagonistic muscles. , 2016, , .		8
47	Optimization of a Stimulation Train based on a Predictive Model of Muscle Force and Fatigue. <i>IFAC-PapersOnLine</i> , 2015, 48, 338-342.	0.5	8
48	Nonlinear Model Predictive Control of Functional Electrical Stimulation. , 2015, , .		4
49	Expectation Maximization Method to Identify an Electrically Stimulated Musculoskeletal Model. , 2015, , .		0
50	An Adaptive Low-Dimensional Control for a Hybrid Neuroprosthesis. <i>IFAC-PapersOnLine</i> , 2015, 48, 303-308.	0.5	3
51	A Muscle Synergy-Inspired Adaptive Control Scheme for a Hybrid Walking Neuroprosthesis. <i>Frontiers in Bioengineering and Biotechnology</i> , 2015, 3, 203.	2.0	45
52	Further Results on Predictor-Based Control of Neuromuscular Electrical Stimulation. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2015, 23, 1095-1105.	2.7	44
53	Dynamic surface control of neuromuscular electrical stimulation of a musculoskeletal system with activation dynamics and an input delay. , 2015, , .		10
54	A semi-active hybrid neuroprosthesis for restoring lower limb function in paraplegics. , 2014, 2014, 2557-60.		21

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55	Model Predictive Control-Based Dynamic Control Allocation in a Hybrid Neuroprosthesis. , 2014, , .		11
56	Nonlinear estimation of gait kinematics during functional electrical stimulation and orthosis-based walking. , 2014, , .		7
57	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
58	A State Synchronization Controller for Functional Electrical Stimulation-Based Telerehabilitation. , 2014, , .		0
59	A Discrete-Time Nonlinear Estimator for an Orthosis-Aided Gait. , 2014, , .		1
60	Saturated control of an uncertain nonlinear system with input delay. Automatica, 2013, 49, 1741-1747.	3.0	85
61	Control of functional electrical stimulation in the presence of electromechanical and communication delays. , 2013, , .		3
62	Optimized Control of Different Actuation Strategies for FES and Orthosis Aided Gait. , 2013, , .		9
63	Adaptive Inverse Optimal Neuromuscular Electrical Stimulation. IEEE Transactions on Cybernetics, 2013, 43, 1710-1718.	6.2	25
64	Gait planning and double support phase model for functional electrical stimulation-based walking. , 2012, 2012, 1904-7.		3
65	A predictor-based compensation for electromechanical delay during neuromuscular electrical stimulation-II. , 2012, , .		8
66	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
67	Closed-Loop Neural Network-Based NMES Control for Human Limb Tracking. IEEE Transactions on Control Systems Technology, 2012, 20, 712-725.	3.2	82
68	RISE-based control of an uncertain nonlinear system with time-varying state delays. , 2012, , .		6
69	Saturated control of an uncertain Euler-Lagrange system with input delay. , 2011, , .		11
70	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
71	Predictor-based control for an uncertain Euler-Lagrange system with input delay. Automatica, 2011, 47, 2332-2342.	3.0	116
72	Asymptotic tracking by a reinforcement learning-based adaptive critic controller. Journal of Control Theory and Applications, 2011, 9, 400-409.	0.8	37

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73	A novel modulation strategy to increase stimulation duration in neuromuscular electrical stimulation. Muscle and Nerve, 2011, 44, 382-387.	1.0	25
74	Optimal trajectory planning for a constrained functional electrical stimulation-based human walking. , 2011, 2011, 603-7.		5
75	Asymptotic optimal control of neuromuscular electrical stimulation. , 2010, , .		3
76	Robust asymptotic tracking of a class of nonlinear systems using an adaptive critic based controller. , 2010, , .		3
77	Adaptive inverse optimal Neuromuscular Electrical Stimulation. , 2010, , .		3
78	RISE-based adaptive control of an uncertain nonlinear system with unknown state delays. , 2010, , .		4
79	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
80	Nonlinear Control of NMES: Incorporating Fatigue and Calcium Dynamics. , 2009, , .		22
81	Comparing the forceâ€œ and excursionâ€œ frequency relationships in human skeletal muscle. Muscle and Nerve, 2008, 38, 1627-1629.	1.0	6
82	Modified Neural Network-based Electrical Stimulation for Human Limb Tracking. , 2008, , .		9
83	Nonlinear tracking control of a human limb via neuromuscular electrical stimulation. , 2008, , .		3
84	An extremum seeking method for non-isometric neuromuscular electrical stimulation. , 2007, , .		19
85	Experimental demonstration of RISE-based NMES of human quadriceps muscle. , 2007, , .		2