Max Ortiz-Catalan

List of Publications by Year
in descending order

73	2,465	331538 21	223716 46
papers	citations	h-index	g-index

82	82	82	1952
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	An osseointegrated human-machine gateway for long-term sensory feedback and motor control of artificial limbs. Science Translational Medicine, 2014, 6, 257re6.	5.8	378
2	Phantom motor execution facilitated by machine learning and augmented reality as treatment for phantom limb pain: a single group, clinical trial in patients with chronic intractable phantom limb pain. Lancet, The, 2016, 388, 2885-2894.	6.3	178
3	Self-Contained Neuromusculoskeletal Arm Prostheses. New England Journal of Medicine, 2020, 382, 1732-1738.	13.9	151
4	BioPatRec: A modular research platform for the control of artificial limbs based on pattern recognition algorithms. Source Code for Biology and Medicine, 2013, 8, 11.	1.7	150
5	Treatment of phantom limb pain (PLP) based on augmented reality and gaming controlled by myoelectric pattern recognition: a case study of a chronic PLP patient. Frontiers in Neuroscience, 2014, 8, 24.	1.4	127
6	Safety of long-term electricalÂperipheral nerve stimulation: review of the state of the art. Journal of NeuroEngineering and Rehabilitation, 2019, 16, 13.	2.4	127
7	Real-Time and Simultaneous Control of Artificial Limbs Based on Pattern Recognition Algorithms. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2014, 22, 756-764.	2.7	123
8	On the viability of implantable electrodes for the natural control of artificial limbs: Review and discussion. BioMedical Engineering OnLine, 2012, 11, 33.	1.3	120
9	Biomechanical Characterisation of Bone-anchored Implant Systems for Amputation Limb Prostheses: A Systematic Review. Annals of Biomedical Engineering, 2018, 46, 377-391.	1.3	84
10	Embedded System for Prosthetic Control Using Implanted Neuromuscular Interfaces Accessed Via an Osseointegrated Implant. IEEE Transactions on Biomedical Circuits and Systems, 2017, 11, 867-877.	2.7	73
11	Offline accuracy: A potentially misleading metric in myoelectric pattern recognition for prosthetic control. , 2015, 2015, 1140-3.		71
12	Evaluation of surface EMG-based recognition algorithms for decoding hand movements. Medical and Biological Engineering and Computing, 2020, 58, 83-100.	1.6	54
13	Neural feedback strategies to improve grasping coordination in neuromusculoskeletal prostheses. Scientific Reports, 2020, 10, 11793.	1.6	49
14	Systematic review of textile-based electrodes for long-term and continuous surface electromyography recording. Textile Reseach Journal, 2020, 90, 227-244.	1.1	47
15	Grip control and motor coordination with implanted and surface electrodes while grasping with an osseointegrated prosthetic hand. Journal of NeuroEngineering and Rehabilitation, 2019, 16, 49.	2.4	44
16	The Stochastic Entanglement and Phantom Motor Execution Hypotheses: A Theoretical Framework for the Origin and Treatment of Phantom Limb Pain. Frontiers in Neurology, 2018, 9, 748.	1.1	39
17	An Alternative Myoelectric Pattern Recognition Approach for the Control of Hand Prostheses: A Case Study of Use in Daily Life by a Dysmelia Subject. IEEE Journal of Translational Engineering in Health and Medicine, 2018, 6, 1-12.	2.2	36
18	Improved Prosthetic Control Based on Myoelectric Pattern Recognition via Wavelet-Based De-Noising. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2018, 26, 506-514.	2.7	33

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19	Neuromusculoskeletal Arm Prostheses: Personal and Social Implications of Living With an Intimately Integrated Bionic Arm. Frontiers in Neurorobotics, 2020, 14, 39.	1.6	31
20	Patterned Stimulation of Peripheral Nerves Produces Natural Sensations With Regards to Location but Not Quality. IEEE Transactions on Medical Robotics and Bionics, 2019, 1, 199-203.	2.1	30
21	Prosthetic embodiment: systematic review on definitions, measures, and experimental paradigms. Journal of NeuroEngineering and Rehabilitation, 2022, 19, 37.	2.4	30
22	Cardinality as a highly descriptive feature in myoelectric pattern recognition for decoding motor volition. Frontiers in Neuroscience, 2015, 9, 416.	1.4	27
23	Real-time Classification of Non-Weight Bearing Lower-Limb Movements Using EMG to Facilitate Phantom Motor Execution: Engineering and Case Study Application on Phantom Limb Pain. Frontiers in Neurology, 2017, 8, 470.	1.1	25
24	Chronic Use of a Sensitized Bionic Hand Does Not Remap the Sense of Touch. Cell Reports, 2020, 33, 108539.	2.9	25
25	Touch and Hearing Mediate Osseoperception. Scientific Reports, 2017, 7, 45363.	1.6	22
26	Assessment of an Automatic Prosthetic Elbow Control Strategy Using Residual Limb Motion for Transhumeral Amputated Individuals With Socket or Osseointegrated Prostheses. IEEE Transactions on Medical Robotics and Bionics, 2020, 2, 38-49.	2.1	22
27	Evaluation of Computer-Based Target Achievement Tests for Myoelectric Control. IEEE Journal of Translational Engineering in Health and Medicine, 2017, 5, 1-10.	2.2	20
28	Classification complexity in myoelectric pattern recognition. Journal of NeuroEngineering and Rehabilitation, 2017, 14, 68.	2.4	20
29	Case Studies in Neuroscience: Sensations elicited and discrimination ability from nerve cuff stimulation in an amputee over time. Journal of Neurophysiology, 2018, 120, 291-295.	0.9	20
30	Effect on signal-to-noise ratio of splitting the continuous contacts of cuff electrodes into smaller recording areas. Journal of NeuroEngineering and Rehabilitation, 2013, 10, 22.	2.4	19
31	Analog front-ends comparison in the way of a portable, low-power and low-cost EMG controller based on pattern recognition. , 2015, 2015, 2111-4.		18
32	Electrical stimulation to promote osseointegration of bone anchoring implants: a topical review. Journal of NeuroEngineering and Rehabilitation, 2022, 19, 31.	2.4	18
33	Phantom motor execution as a treatment for phantom limb pain: protocol of an international, double-blind, randomised controlled clinical trial. BMJ Open, 2018, 8, e021039.	0.8	17
34	Myoelectric signals and pattern recognition from implanted electrodes in two TMR subjects with an osseointegrated communication interface. , 2018, 2018, 5174-5177.		14
35	Neurophysiological models of phantom limb pain: what can be learnt. Minerva Anestesiologica, 2021, 87, 481-487.	0.6	14
36	Enhancing osteoblast survival through pulsed electrical stimulation and implications for osseointegration. Scientific Reports, 2021, 11, 22416.	1.6	13

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37	Restoring Natural Forearm Rotation in Transradial Osseointegrated Amputees. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2018, 26, 2333-2341.	2.7	12
38	Neuroengineering: Deciphering neural drive. Nature Biomedical Engineering, 2017, 1, .	11.6	11
39	Combining two open source tools for neural computation (BioPatRec and Netlab) improves movement classification for prosthetic control. BMC Research Notes, 2016, 9, 429.	0.6	10
40	The rubber hand illusion is a fallible method to study ownership of prosthetic limbs. Scientific Reports, 2021, 11, 4423.	1.6	10
41	Evaluation of classifier topologies for the real-time classification of simultaneous limb motions. , 2013, 2013, 6651-4.		9
42	Intarsia-sensorized band and textrodes for real-time myoelectric pattern recognition. , 2016, 2016, 6074-6077.		9
43	Out of the Clinic, into the Home: The in-Home Use of Phantom Motor Execution Aided by Machine Learning and Augmented Reality for the Treatment of Phantom Limb Pain . Journal of Pain Research, 2020, Volume 13, 195-209.	0.8	9
44	Mathematical and Computational Models for Pain: A Systematic Review. Pain Medicine, 2021, 22, 2806-2817.	0.9	9
45	Loads at the Implant-Prosthesis Interface During Free and Aided Ambulation in Osseointegrated Transfemoral Prostheses. IEEE Transactions on Medical Robotics and Bionics, 2020, 2, 497-505.	2.1	8
46	Engineering and surgical advancements enable more cognitively integrated bionic arms. Science Robotics, 2021, 6, eabk3123.	9.9	7
47	Skin stimulation and recording: Moving towards metal-free electrodes. Biosensors and Bioelectronics: X, 2022, , 100143.	0.9	7
48	Estimates of Classification Complexity for Myoelectric Pattern Recognition. , 2016, , .		6
49	Ultrasound-powered tiny neural stimulators. Nature Biomedical Engineering, 2020, 4, 144-145.	11.6	6
50	Low plasticity burnishing improves fretting fatigue resistance in bone-anchored implants for amputation prostheses. Medical Engineering and Physics, 2022, 100, 103755.	0.8	6
51	Multi-layer perceptron training algorithms for pattern recognition of myoelectric signals. , 2013, , .		5
52	Classification of non-weight bearing lower limb movements: Towards a potential treatment for phantom limb pain based on myoelectric pattern recognition. , 2016, 2016, 5457-5460.		5
53	Stationary Wavelet Processing and Data Imputing in Myoelectric Pattern Recognition on a Low-Cost Embedded System. IEEE Transactions on Medical Robotics and Bionics, 2019, 1, 256-266.	2.1	5
54	Real-Time and Offline Evaluation of Myoelectric Pattern Recognition for the Decoding of Hand Movements. Sensors, 2021, 21, 5677.	2.1	5

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55	Low-cost, open source bioelectric signal acquisition system. , 2017, , .		4
56	Biologically Inspired Algorithms Applied to Prosthetic Control. , 2012, , .		4
57	Restoration of somatosensory perception via electrical stimulation of peripheral nerves. Clinical Neurophysiology, 2018, 129, 845-846.	0.7	3
58	Load exposure of osseointegrated implants for transfemoral limb prosthesis during running. , 2018, 2018, 1743-1746.		3
59	transcranial Direct Current Stimulation (tDCS) for the treatment and investigation of Phantom Limb Pain (PLP). Psychoradiology, 2022, 2, 23-31.	1.0	3
60	Competitive motivation increased home use and improved prosthesis self-perception after Cybathlon 2020 for neuromusculoskeletal prosthesis user. Journal of NeuroEngineering and Rehabilitation, 2022, 19, 47.	2.4	3
61	Extra-neural signals from severed nerves enable intrinsic hand movements in transhumeral amputations. Scientific Reports, 2022, 12, .	1.6	3
62	The effect of cortical thickness and thread profile dimensions on stress and strain in bone-anchored implants for amputation prostheses. Journal of the Mechanical Behavior of Biomedical Materials, 2022, 129, 105148.	1.5	2
63	Common Spatial Pattern EEG decomposition for Phantom Limb Pain detection. , 2021, 2021, 726-729.		2
64	Differential Activation of Biceps Brachii Muscle Compartments for Human-Machine Interfacing. , 2018, 2018, 4705-4709.		1
65	Supervision of M.Sc. theses using the writing of a scientific article as a framework to increase efficiency and quality of research outcomes. , 2019, 2019, 1436-1439.		1
66	Hand Temperature Is Not Consistent With Illusory Strength During the Rubber Hand Illusion. , 2021, 2021, 1416-1418.		1
67	Design of a stepwise safety protocol for lower limb prosthetic risk management in a clinical investigation. , 2021, 2021, 1362-1365.		1
68	Design of an open-source transfemoral, bypass socket. , 2021, 2021, 4578-4582.		1
69	Crosstalk Reduction in Epimysial EMG Recordings from Transhumeral Amputees with Principal Component Analysis. , 2018, 2018, 2124-2127.		0
70	Universal, Open Source, Myoelectric Interface for Assistive Devices. , 2018, , .		0
71	Seamless Integrated Textrode-Band for Real-time Lower Limb Movements Classification to Facilitate Self-Administrated Phantom Limb Pain Treatment. , 2019, 2019, 1753-1756.		0
72	Osseointegrated Amputation Prostheses and Implanted Electrodes. , 2021, , 45-55.		0

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73	Statistical analysis plan for an international, double-blind, randomized controlled clinical trial on the use of phantom motor execution as a treatment for phantom limb pain. Trials, 2022, 23, 138.	0.7	0