Karl E Zelik

List of Publications by Year
in descending order

49 papers	2,291 citations	201385 27 h-index	223531 46 g-index
53 all docs	53 docs citations	53 times ranked	2012 citing authors

#	Article	IF	Citations
1	Effect of a Back-Assist Exosuit on Logistics Worker Perceptions, Acceptance, and Muscle Activity. Biosystems and Biorobotics, 2022, , 7-11.	0.2	4
2	An ergonomic assessment tool for evaluating the effect of back exoskeletons on injury risk. Applied Ergonomics, 2022, 99, 103619.	1.7	35
3	Unilateral below-knee prosthesis users walking on uneven terrain: The effect of adding a toe joint to a passive prosthesis. Journal of Biomechanics, 2022, 138, 111115.	0.9	4
4	Engineering for Inclusion: Empowering Individuals with Physical and Neurological Differences through Engineering Invention, Research, and Development. Engineering, 2021, 7, 141-143.	3.2	0
5	Design, modeling, and demonstration of a new dual-mode back-assist exosuit with extension mechanism. Wearable Technologies, 2021, 2, .	1.6	22
6	Adding a toe joint to a prosthesis: walking biomechanics, energetics, and preference of individuals with unilateral below-knee limb loss. Scientific Reports, 2021, 11, 1924.	1.6	12
7	On the Basis for Stumble Recovery Strategy Selection in Healthy Adults. Journal of Biomechanical Engineering, 2021, 143, .	0.6	11
8	Development and Evaluation of a Prosthetic Ankle Emulator With an Artificial Soleus and Gastrocnemius. Journal of Medical Devices, Transactions of the ASME, 2021, 15, .	0.4	3
9	A Promising Wearable Solution for the Practical and Accurate Monitoring of Low Back Loading in Manual Material Handling. Sensors, 2021, 21, 340.	2.1	25
10	Design and implementation of a stumble recovery controller for a knee exoskeleton. , 2021, , .		2
11	Exoskeletons and Exosuits Could Benefit from Mode-Switching Body Interfaces That Loosen/Tighten to Improve Thermal Comfort. International Journal of Environmental Research and Public Health, 2021, 18, 13115.	1.2	3
12	Low-profile elastic exosuit reduces back muscle fatigue. Scientific Reports, 2020, 10, 15958.	1.6	36
13	Combining wearable sensor signals, machine learning and biomechanics to estimate tibial bone force and damage during running. Human Movement Science, 2020, 74, 102690.	0.6	40
14	Effects of toe length, foot arch length and toe joint axis on walking biomechanics. Human Movement Science, 2020, 70, 102594.	0.6	10
15	Characterizing the comfort limits of forces applied to the shoulders, thigh and shank to inform exosuit design. PLoS ONE, 2020, 15, e0228536.	1.1	27
16	Subject-specific responses to an adaptive ankle prosthesis during incline walking. Journal of Biomechanics, 2019, 95, 109273.	0.9	23
17	Differential activation of lumbar and sacral motor pools during walking at different speeds and slopes. Journal of Neurophysiology, 2019, 122, 872-887.	0.9	18
18	Mechanical misconceptions: Have we lost the â€œmechanicsâ€•in â€œsports biomechanicsâ€?. Journal of Biomechanics, 2019, 93, 1-5.	0.9	37

#	Article	IF	Citations
19	Quit being so rigid: how traditional gait analysis assumptions confound our understanding of ankles, feet, footwear and biomechanics. Footwear Science, 2019, 11, S137-S139.	0.8	0
20	Ground reaction force metrics are not strongly correlated with tibial bone load when running across speeds and slopes: Implications for science, sport and wearable tech. PLoS ONE, 2019, 14, e0210000.	1.1	118
21	Unholey shoes: Experimental considerations when estimating ankle joint complex power during walking and running. Journal of Biomechanics, 2019, 92, 61-66.	0.9	7
22	A novel system for introducing precisely-controlled, unanticipated gait perturbations for the study of stumble recovery. Journal of NeuroEngineering and Rehabilitation, 2019, 16, 69.	2.4	34
23	Design of a Low Profile, Unpowered Ankle Exoskeleton That Fits Under Clothes: Overcoming Practical Barriers to Widespread Societal Adoption. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2019, 27, 712-723.	2.7	68
24	Foot and shoe responsible for majority of soft tissue work in early stance of walking. Human Movement Science, 2019, 64, 191-202.	0.6	24
25	Feasibility of a Biomechanically-Assistive Garment to Reduce Low Back Loading During Leaning and Lifting. IEEE Transactions on Biomedical Engineering, 2018, 65, 1674-1680.	2.5	76
26	Ankle and foot power in gait analysis: Implications for science, technology and clinical assessment. Journal of Biomechanics, 2018, 75, 1-12.	0.9	118
27	Ultrasound estimates of Achilles tendon exhibit unexpected shortening during ankle plantarflexion. Journal of Biomechanics, 2018, 72, 200-206.	0.9	16
28	Effect of toe joint stiffness and toe shape on walking biomechanics. Bioinspiration and Biomimetics, 2018, 13, 066007.	1.5	38
29	IMU-based gait analysis in lower limb prosthesis users: Comparison of step demarcation algorithms. Gait and Posture, 2018, 64, 30-37.	0.6	37
30	Kinematic patterns while walking on a slope at different speeds. Journal of Applied Physiology, 2018, 125, 642-653.	1.2	41
31	Physical interface dynamics alter how robotic exosuits augment human movement: implications for optimizing wearable assistive devices. Journal of NeuroEngineering and Rehabilitation, 2017, 14, 40.	2.4	102
32	Itâ€™s positive to be negative: Achilles tendon work loops during human locomotion. PLoS ONE, 2017, 12, e0179976.	1.1	40
33	Inferring Muscle-Tendon Unit Power from Ankle Joint Power during the Push-Off Phase of Human Walking: Insights from a Multiarticular EMG-Driven Model. PLoS ONE, 2016, 11, e0163169.	1.1	19
34	A unified perspective on ankle push-off in human walking. Journal of Experimental Biology, 2016, 219, 3676-3683.	0.8	120
35	Preferred Barefoot Step Frequency is Influenced by Factors Beyond Minimizing Metabolic Rate. Scientific Reports, 2016, 6, 23243.	1.6	16
36	Soft Tissue Deformations Contribute to the Mechanics of Walking in Obese Adults. Medicine and Science in Sports and Exercise, 2015, 47, 1435-1443.	0.2	21

#	ARTICLE	IF	CITATIONS
37	Six degree-of-freedom analysis of hip, knee, ankle and foot provides updated understanding of biomechanical work during human walking. Journal of Experimental Biology, 2015, 218, 876-886.	0.8	114
38	Subjective valuation of cushioning in a human drop landing task as quantified by trade-offs in mechanical work. Journal of Biomechanics, 2015, 48, 1887-1892.	0.9	10
39	Coordination of intrinsic and extrinsic foot muscles during walking. European Journal of Applied Physiology, 2015, 115, 691-701.	1.2	54
40	Spinal motor outputs during step-to-step transitions of diverse human gaits. Frontiers in Human Neuroscience, 2014, 8, 305.	1.0	37
41	Can modular strategies simplify neural control of multidirectional human locomotion?. Journal of Neurophysiology, 2014, 111, 1686-1702.	0.9	97
42	The role of series ankle elasticity in bipedal walking. Journal of Theoretical Biology, 2014, 346, 75-85.	0.8	107
43	Evolutionary and Developmental Modules. Frontiers in Computational Neuroscience, 2013, 7, 61.	1.2	50
44	The effects of a controlled energy storage and return prototype prosthetic foot on transtibial amputee ambulation. Human Movement Science, 2012, 31, 918-931.	0.6	80
45	Mechanical Work as an Indirect Measure of Subjective Costs Influencing Human Movement. PLoS ONE, 2012, 7, e31143.	1.1	56
46	The effect of prosthetic foot push-off on mechanical loading associated with knee osteoarthritis in lower extremity amputees. Gait and Posture, 2011, 34, 502-507.	0.6	137
47	Systematic Variation of Prosthetic Foot Spring Affects Center-of-Mass Mechanics and Metabolic Cost During Walking. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2011, 19, 411-419.	2.7	115
48	Human walking isn't all hard work: evidence of soft tissue contributions to energy dissipation and return. Journal of Experimental Biology, 2010, 213, 4257-4264.	0.8	166
49	Transient Local Injury Current in Right Ventricular Electrogram After Implantable Cardioverter-Defibrillator Shock Predicts Heart Failure Progression. Journal of the American College of Cardiology, 2009, 54, 822-828.	1.2	58