

Andy L Ruina

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

49
papers

8,217
citations

30
h-index

54
g-index

54
ext. papers

9,480
ext. citations

5.8
avg. IF

6.05
L-index

#	Paper	IF	Citations
49	Slip instability and state variable friction laws. <i>Journal of Geophysical Research</i> , 1983 , 88, 10359-10370		1967
48	Efficient bipedal robots based on passive-dynamic walkers. <i>Science</i> , 2005 , 307, 1082-5	33.3	1243
47	The simplest walking model: stability, complexity, and scaling. <i>Journal of Biomechanical Engineering</i> , 1998 , 120, 281-8	2.1	678
46	Energetic consequences of walking like an inverted pendulum: step-to-step transitions. <i>Exercise and Sport Sciences Reviews</i> , 2005 , 33, 88-97	6.7	445
45	Slip motion and stability of a single degree of freedom elastic system with rate and state dependent friction. <i>Journal of the Mechanics and Physics of Solids</i> , 1984 , 32, 167-196	5	398
44	Computer optimization of a minimal biped model discovers walking and running. <i>Nature</i> , 2006 , 439, 72-550.4	50.4	397
43	A collisional model of the energetic cost of support work qualitatively explains leg sequencing in walking and galloping, pseudo-elastic leg behavior in running and the walk-to-run transition. <i>Journal of Theoretical Biology</i> , 2005 , 237, 170-92	2.3	313
42	Multiple walking speed-frequency relations are predicted by constrained optimization. <i>Journal of Theoretical Biology</i> , 2001 , 209, 445-53	2.3	242
41	Linearized dynamics equations for the balance and steer of a bicycle: a benchmark and review. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2007 , 463, 1955-1982	2.4	195
40	An Uncontrolled Walking Toy That Cannot Stand Still. <i>Physical Review Letters</i> , 1998 , 80, 3658-3661	7.4	159
39	Planar sliding with dry friction Part 1. Limit surface and moment function. <i>Wear</i> , 1991 , 143, 307-330	3.5	156
38			150
37	Low-bandwidth reflex-based control for lower power walking: 65 km on a single battery charge. <i>International Journal of Robotics Research</i> , 2014 , 33, 1305-1321	5.7	122
36	Motions of a rimless spoked wheel: a simple three-dimensional system with impacts. <i>Dynamical Systems</i> , 1997 , 12, 139-159		102
35	Efficiency, speed, and scaling of two-dimensional passive-dynamic walking. <i>Dynamical Systems</i> , 2000 , 15, 75-99		102
34	A bicycle can be self-stable without gyroscopic or caster effects. <i>Science</i> , 2011 , 332, 339-42	33.3	98
33	. <i>IEEE Robotics and Automation Magazine</i> , 2016 , 23, 55-64	3.4	93

32	A two degree-of-freedom earthquake model with static/dynamic friction. <i>Pure and Applied Geophysics</i> , 1987 , 125, 629-656	2.2	85
31	Microbuckling instability in elastomeric cellular solids. <i>Journal of Materials Science</i> , 1993 , 28, 4667-4672	4.3	81
30	Slip patterns in a spatially homogeneous fault model. <i>Journal of Geophysical Research</i> , 1989 , 94, 10279-10298		73
29	Why K? High order singularities and small scale yielding. <i>International Journal of Fracture</i> , 1995 , 72, 97-120	3	51
28	Planar sliding with dry friction Part 2. Dynamics of motion. <i>Wear</i> , 1991 , 143, 331-352	3.5	47
27	Walking model with no energy cost. <i>Physical Review E</i> , 2011 , 83, 032901	2.4	46
26	Nonholonomic stability aspects of piecewise holonomic systems. <i>Reports on Mathematical Physics</i> , 1998 , 42, 91-100	0.8	44
25	Cohesive Zone Models and Fracture 2011 , 87, 1-52		43
24	DESIGN AND CONTROL OF RANGER: AN ENERGY-EFFICIENT, DYNAMIC WALKING ROBOT 2012 , 441-448		38
23	A simple 1+ dimensional model of rowing mimics observed forces and motions. <i>Human Movement Science</i> , 2006 , 25, 192-220	2.4	35
22	A five-link 2D brachiating ape model with life-like zero-energy-cost motions. <i>Journal of Theoretical Biology</i> , 2005 , 237, 265-78	2.3	34
21	A chain that speeds up, rather than slows, due to collisions: How compression can cause tension. <i>American Journal of Physics</i> , 2011 , 79, 723-729	0.7	32
20	Elastic instability model of rapid beak closure in hummingbirds. <i>Journal of Theoretical Biology</i> , 2011 , 282, 41-51	2.3	30
19	Two steps is enough: No need to plan far ahead for walking balance 2015 ,		28
18	Prediction of stable walking for a toy that cannot stand. <i>Physical Review E</i> , 2001 , 64, 022901	2.4	28
17	Idealized walking and running gaits minimize work. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2007 , 463, 2429-2446	2.4	23
16	The Boundaries of Walking Stability: Viability and Controllability of Simple Models. <i>IEEE Transactions on Robotics</i> , 2018 , 34, 336-352	6.5	18
15	Persistent Passive Hopping and Juggling is Possible Even With Plastic Collisions. <i>International Journal of Robotics Research</i> , 2002 , 21, 621-634	5.7	16

14	A quantitative model of technology transfer and technological "batch-up" <i>Technological Forecasting and Social Change</i> , 1983 , 24, 31-44	9.5	15
13	Rocking and rolling: a can that appears to rock might actually roll. <i>Physical Review E</i> , 2008 , 78, 066609	2.4	14
12	Static equilibria of planar, rigid bodies: is there anything new?. <i>Journal of Elasticity</i> , 1994 , 36, 59-66	1.5	13
11	Non-linear robust control for inverted-pendulum 2D walking 2015 ,		9
10	Discrete-Decision Continuous-Actuation Control: Balance of an Inverted Pendulum and Pumping a Pendulum Swing. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , 2015 , 137,	1.6	9
9	Steinkamp's Toy Can Hop 100 Times But Can't Stand Up. <i>Journal of Mechanisms and Robotics</i> , 2017 , 9,	2.2	5
8	Unsteady motions between sliding surfaces. <i>Wear</i> , 1986 , 113, 83-86	3.5	5
7	A pressure field model for fast, robust approximation of net contact force and moment between nominally rigid objects 2019 ,		4
6	The bricycle: a bicycle in zero gravity can be balanced or steered but not both. <i>Vehicle System Dynamics</i> , 2014 , 52, 1681-1694	2.8	2
5	A circle construction based on elastostatics and hydrodynamics. <i>Mechanics Research Communications</i> , 1993 , 20, 181-185	2.2	2
4	Off-line controller design for reliable walking of ranger 2016 ,		2
3	Construction and Excavation by Collaborative Double-Tailed SAW Robots. <i>IEEE Robotics and Automation Letters</i> , 2022 , 1-1	4.2	1
2	A longer stance is more stable for a standing horse		1
1	The visco-plastic approximation to Hart's constitutive law for inelastic deformation. <i>International Journal of Solids and Structures</i> , 1987 , 23, 693-709	3.1	