Andy L Ruina

List of Publications by Year in Descending Order

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	Construction and Excavation by Collaborative Double-Tailed SAW Robots. *IEEE Robotics and Automation Letters*, **2022**, 1-1	4.2	1
48	A pressure field model for fast, robust approximation of net contact force and moment between nominally rigid objects **2019**,		4
47	The Boundaries of Walking Stability: Viability and Controllability of Simple Models. *IEEE Transactions on Robotics*, **2018**, 34, 336-352	6.5	18
46	Steinkamp's Toy Can Hop 100 Times But Can't Stand Up. *Journal of Mechanisms and Robotics*, **2017**, 9,	2.2	5
45	. *IEEE Robotics and Automation Magazine*, **2016**, 23, 55-64	3.4	93
44	Off-line controller design for reliable walking of ranger **2016**,		2
43	Non-linear robust control for inverted-pendulum 2D walking **2015**,		9
42	Two steps is enough: No need to plan far ahead for walking balance **2015**,		28
41	Discrete-Decision Continuous-Actuation Control: Balance of an Inverted Pendulum and Pumping a Pendulum Swing. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2015**, 137,	1.6	9
40	Low-bandwidth reflex-based control for lower power walking: 65 km on a single battery charge. *International Journal of Robotics Research*, **2014**, 33, 1305-1321	5.7	122
39	The bricycle: a bicycle in zero gravity can be balanced or steered but not both. *Vehicle System Dynamics*, **2014**, 52, 1681-1694	2.8	2
38	DESIGN AND CONTROL OF RANGER: AN ENERGY-EFFICIENT, DYNAMIC WALKING ROBOT **2012**, 441-448		38
37	A bicycle can be self-stable without gyroscopic or caster effects. *Science*, **2011**, 332, 339-42	33.3	98
36	Cohesive Zone Models and Fracture **2011**, 87, 1-52		43
35	A chain that speeds up, rather than slows, due to collisions: How compression can cause tension. *American Journal of Physics*, **2011**, 79, 723-729	0.7	32
34	Elastic instability model of rapid beak closure in hummingbirds. *Journal of Theoretical Biology*, **2011**, 282, 41-51	2.3	30
33	Walking model with no energy cost. *Physical Review E*, **2011**, 83, 032901	2.4	46

32	Rocking and rolling: a can that appears to rock might actually roll. *Physical Review E*, **2008**, 78, 066609	2.4	14
31	Linearized dynamics equations for the balance and steer of a bicycle: a benchmark and review. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2007**, 463, 1955-1982	2.4	195
30	Idealized walking and running gaits minimize work. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2007**, 463, 2429-2446	2.4	23
29	A simple 1+ dimensional model of rowing mimics observed forces and motions. *Human Movement Science*, **2006**, 25, 192-220	2.4	35
28	Computer optimization of a minimal biped model discovers walking and running. *Nature*, **2006**, 439, 72-5	50.4	397
27	Energetic consequences of walking like an inverted pendulum: step-to-step transitions. *Exercise and Sport Sciences Reviews*, **2005**, 33, 88-97	6.7	445
26	Efficient bipedal robots based on passive-dynamic walkers. *Science*, **2005**, 307, 1082-5	33.3	1243
25	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. *Journal of Theoretical Biology*, **2005**, 237, 170-92	2.3	313
24	A five-link 2D brachiating ape model with life-like zero-energy-cost motions. *Journal of Theoretical Biology*, **2005**, 237, 265-78	2.3	34
23	Persistent Passive Hopping and Juggling is Possible Even With Plastic Collisions. *International Journal of Robotics Research*, **2002**, 21, 621-634	5.7	16
22	Multiple walking speed-frequency relations are predicted by constrained optimization. *Journal of Theoretical Biology*, **2001**, 209, 445-53	2.3	242
21	Prediction of stable walking for a toy that cannot stand. *Physical Review E*, **2001**, 64, 022901	2.4	28
20	Efficiency, speed, and scaling of two-dimensional passive-dynamic walking. *Dynamical Systems*, **2000**, 15, 75-99		102
19	Nonholonomic stability aspects of piecewise holonomic systems. *Reports on Mathematical Physics*, **1998**, 42, 91-100	0.8	44
18	The simplest walking model: stability, complexity, and scaling. *Journal of Biomechanical Engineering*, **1998**, 120, 281-8	2.1	678
17	An Uncontrolled Walking Toy That Cannot Stand Still. *Physical Review Letters*, **1998**, 80, 3658-3661	7.4	159
16	Motions of a rimless spoked wheel: a simple three-dimensional system with impacts. *Dynamical Systems*, **1997**, 12, 139-159		102
15	Why K? High order singularities and small scale yielding. *International Journal of Fracture*, **1995**, 72, 97-120	2.3	51

14	Static equilibria of planar, rigid bodies: is there anything new?. *Journal of Elasticity*, **1994**, 36, 59-66	1.5	13
13	A circle construction based on elastostatics and hydrodynamics. *Mechanics Research Communications*, **1993**, 20, 181-185	2.2	2
12	Microbuckling instability in elastomeric cellular solids. *Journal of Materials Science*, **1993**, 28, 4667-4672	4.3	81
11	Planar sliding with dry friction Part 2. Dynamics of motion. *Wear*, **1991**, 143, 331-352	3.5	47
10	Planar sliding with dry friction Part 1. Limit surface and moment function. *Wear*, **1991**, 143, 307-330	3.5	156
9	Slip patterns in a spatially homogeneous fault model. *Journal of Geophysical Research*, **1989**, 94, 10279-10298		73
8	A two degree-of-freedom earthquake model with static/dynamic friction. *Pure and Applied Geophysics*, **1987**, 125, 629-656	2.2	85
7	The “disco-plastic” approximation to Hart’s constitutive law for inelastic deformation. *International Journal of Solids and Structures*, **1987**, 23, 693-709	3.1	
6	Unsteady motions between sliding surfaces. *Wear*, **1986**, 113, 83-86	3.5	5
5	Slip motion and stability of a single degree of freedom elastic system with rate and state dependent friction. *Journal of the Mechanics and Physics of Solids*, **1984**, 32, 167-196	5	398
4	A quantitative model of technology transfer and technological “catch-up” *Technological Forecasting and Social Change*, **1983**, 24, 31-44	9.5	15
3	Slip instability and state variable friction laws. *Journal of Geophysical Research*, **1983**, 88, 10359-10370		1967
2			150
1	A longer stance is more stable for a standing horse		1