Amir Shapiro

List of Publications by Year
in descending order

91 papers	1,267 citations	516710 16 h-index	434195 31 g-index
94 all docs	94 docs citations	94 times ranked	1332 citing authors

#	Article	IF	Citations
1	Biomechanical energy harvesting from human motion: theory, state of the art, design guidelines, and future directions. Journal of NeuroEngineering and Rehabilitation, 2011, 8, 22.	4.6	258
2	Grape clusters and foliage detection algorithms for autonomous selective vineyard sprayer. Intelligent Service Robotics, 2010, 3, 233-243.	2.6	116
3	Design and motion planning of an autonomous climbing robot with claws. Robotics and Autonomous Systems, 2011, 59, 1008-1019.	5.1	99
4	Unexpected perturbations training improves balance control and voluntary stepping times in older adults - a double blind randomized control trial. BMC Geriatrics, 2016, 16, 58.	2.7	54
5	Balance perturbation system to improve balance compensatory responses during walking in old persons. Journal of NeuroEngineering and Rehabilitation, 2010, 7, 32.	4.6	47
6	A novel data fusion algorithm for low-cost localisation and navigation of autonomous vineyard sprayer robots. Biosystems Engineering, 2016, 146, 133-148.	4.3	40
7	Age-related differences in pelvic and trunk motion and gait adaptability at different walking speeds. Journal of Electromyography and Kinesiology, 2015, 25, 791-799.	1.7	27
8	Wheel Loader Scooping Controller Using Deep Reinforcement Learning. IEEE Access, 2021, 9, 24145-24154.	4.2	25
9	Quadrotor with a Dihedral Angle: on the Effects of Tilting the Rotors Inwards. Journal of Intelligent and Robotic Systems: Theory and Applications, 2015, 80, 313-324.	3.4	24
10	The kinematics and strategies of recovery steps during lateral losses of balance in standing at different perturbation magnitudes in older adults with varying history of falls. BMC Geriatrics, 2020, 20, 249.	2.7	19
11	Toward elevated agrobotics: Development of a scaled–down prototype for visually guided date palm tree sprayer. Journal of Field Robotics, 2009, 26, 572-590.	6.0	18
12	Robotic Swing-Up Regrasping Manipulation Based on the Impulse–Momentum Approach and cLQR Control. IEEE Transactions on Robotics, 2016, 32, 1079-1090.	10.3	18
13	Gait Coordination Deteriorates in Independent Old-Old Adults. Journal of Aging and Physical Activity, 2018, 26, 382-389.	1.0	18
14	A dynamic single actuator vertical climbing robot. , 2007, , .		16
15	Frictional Compliance Model Development and Experiments for Snake Robot Climbing. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	16
16	The inter-observer reliability and agreement of lateral balance recovery responses in older and younger adults. Journal of Electromyography and Kinesiology, 2018, 40, 39-47.	1.7	16
17	Time-based RRT algorithm for rendezvous planning of two dynamic systems. , 2014, , .		15
18	Online Robot Navigation Using Continuously Updated Artificial Temperature Gradients. IEEE Robotics and Automation Letters, 2017, 2, 1280-1287.	5.1	14

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19	Resistor-Based Shape Sensor for a Spatial Flexible Manifold. IEEE Sensors Journal, 2017, 17, 46-50.	4.7	14
20	On the Passive Force Closure Set of Planar Grasps and Fixtures. International Journal of Robotics Research, 2010, 29, 1435-1454.	8.5	13
21	SpiderBot: a cable-suspended walking robot. Mechanism and Machine Theory, 2014, 82, 56-70.	4.5	13
22	Old adult fallers display reduced flexibility of arm and trunk movements when challenged with different walking speeds. Gait and Posture, 2017, 52, 280-286.	1.4	13
23	Passive force closure and its computation in compliant-rigid grasps. , 0, , .		12
24	A Novel Design of a Quadruped Robot for Research Purposes. International Journal of Advanced Robotic Systems, 2014, 11, 95.	2.1	12
25	Swing-up regrasping algorithm using energy control. , 2016, , .		12
26	Dynamic regrasping by in-hand orienting of grasped objects using non-dexterous robotic grippers. Robotics and Computer-Integrated Manufacturing, 2018, 50, 114-131.	9.9	12
27	Characteristics of First Recovery Step Response following Unexpected Loss of Balance during Walking: A Dynamic Approach. Gerontology, 2020, 66, 362-370.	2.8	12
28	A stochastic dynamic motion planning algorithm for object-throwing. , 2015, , .		11
29	Kinematics for an Actuated Flexible n-Manifold. Journal of Mechanisms and Robotics, 2016, 8, .	2.2	11
30	Design of a Quadruped Robot for Motion with Quasistatic Force Constraints. Autonomous Robots, 2001, 10, 279-296.	4.8	10
31	A gripper design algorithm for grasping a set of parts in manufacturing lines. Mechanism and Machine Theory, 2016, 105, 1-30.	4.5	10
32	Jamming-Free Immobilizing Grasps Using Dual-Friction Robotic Fingertips. IEEE Robotics and Automation Letters, 2020, 5, 2889-2896.	5.1	10
33	Minimal Actuation for a Flat Actuated Flexible Manifold. IEEE Transactions on Robotics, 2016, 32, 698-706.	10.3	9
34	Validity of the microsoft kinect system in assessment of compensatory stepping behavior during standing and treadmill walking. European Review of Aging and Physical Activity, 2017, 14, 4.	2.9	9
35	Characteristics of step responses following varying magnitudes of unexpected lateral perturbations during standing among older people â€" a cross-sectional laboratory-based study. BMC Geriatrics, 2022, 22, 400.	2.7	9
36	A combined potential function and graph search approach for free gait generation of quadruped robots. , 2012, , .		8

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37	Vision Based Output Feedback Control of Micro Aerial Vehicles in Indoor Environments. Journal of Intelligent and Robotic Systems: Theory and Applications, 2017, 87, 169-186.	3.4	8
38	Caging Polygonal Objects Using Formationally Similar Three-Finger Hands. IEEE Robotics and Automation Letters, 2018, 3, 3271-3278.	5.1	8
39	On the mechanics of natural compliance in frictional contacts and its effect on grasp stiffness and stability. , 2004, , .		7
40	MRBUG: A Competitive Multi-Robot Path Finding Algorithm. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	7
41	Dual-tracked mobile robot for motion in challenging terrains. Journal of Field Robotics, 2011, 28, 769-791.	6.0	7
42	Caging Polygonal Objects Using Equilateral Three-Finger Hands. IEEE Robotics and Automation Letters, 2017, 2, 1672-1679.	5.1	7
43	Perturbation exercises during treadmill walking improve pelvic and trunk motion in older adults—A randomized control trial. Archives of Gerontology and Geriatrics, 2018, 75, 132-138.	3.0	7
44	CROPS: Clever Robots for Crops. Engineering & Technology Reference, 2015, , .	0.1	7
45	Stability of Second-Order Asymmetric Linear Mechanical Systems With Application to Robot Grasping. Journal of Applied Mechanics, Transactions ASME, 2005, 72, 966-968.	2.2	6
46	Motion planning algorithm for a mobile robot suspended by seven cables. , 2010, , .		6
47	A common 3-finger grasp search algorithm for a set of planar objects. , 2012, , .		6
48	On the mechanics of natural compliance in frictional contacts and its effect on grasp stiffness and stability. International Journal of Robotics Research, 2013, 32, 425-445.	8.5	6
49	OCOG: A common grasp computation algorithm for a set of planar objects. Robotics and Computer-Integrated Manufacturing, 2014, 30, 124-141.	9.9	6
50	Form-shaping function theory expansion: stiffness model of multi-axis machines. International Journal of Advanced Manufacturing Technology, 2015, 76, 1063-1078.	3.0	6
51	Motion planning for an actuated flexible polyhedron manifold. Advanced Robotics, 2015, 29, 1195-1203.	1.8	6
52	A Variable-Structure Robot Hand That Uses the Environment to Achieve General Purpose Grasps. IEEE Robotics and Automation Letters, 2020, 5, 4804-4811.	5.1	6
53	Motion analysis of an underconstrained cable suspended mobile robot. , 2009, , .		5
54	SpiderBot: A cable suspended mobile robot. , 2011, , .		5

#	ARTICLE	IF	CITATIONS
55	Immobilization based control of spider robots in tunnels environment. , 0, , .		4
56	MRSAM: a quadratically competitive multi-robot online navigation algorithm. , 0, , .		4
57	Physical Modeling of a Bag Knot in a Robot Learning System. IEEE Transactions on Automation Science and Engineering, 2010, 7, 172-177.	5.2	4
58	A Vibrotactile Vest for Remote Human-Dog Communication. , 2019, , .		4
59	Model and Analysis of Piezoelectric Actuator in Practical Three-Stage Mechanism. International Journal of Precision Engineering and Manufacturing, 2020, 21, 1717-1728.	2.2	4
60	The effects of an object's height and weight on force calibration and kinematics when post-stroke and healthy individuals reach and grasp. Scientific Reports, 2021, 11, 20559.	3.3	4
61	Design of a Spider Robot Based on Second-Order Immobilization Theory. , 2000, , 17-25.		4
62	On-Board Physical Battery Replacement System and Procedure for Drones During Flight. IEEE Robotics and Automation Letters, 2022, 7, 9755-9762.	5.1	4
63	Robust position control of a pneumatic actuator. , 2013, , .		3
64	An analysis of grasp quality measures for the application of sheet metal parts grasping. Autonomous Robots, 2017, 41, 145-161.	4.8	3
65	Virtual verification of 5-axis machine tools based on workpiece accuracy analysis: Software tool instead of expensive machining tests. Procedia Manufacturing, 2018, 21, 228-235.	1.9	3
66	Investigation of the Coin Snapping Phenomenon in Linearly Compliant Robot Grasps. IEEE Transactions on Robotics, 2018, 34, 794-804.	10.3	3
67	An Intelligent Algorithm for Decision Making System and Control of the GEMMA Guide Paradigm Using the Fuzzy Petri Nets Approach. Electronics (Switzerland), 2021, 10, 489.	3.1	3
68	A Robotic Prototype for Spraying and Pollinating Date Palm Trees. , 2008, , .		2
69	The DARPA virtual robotics challenge experience. , 2013, , .		2
70	Spacecraft Attitude Control using Nonlinear H-infinity Output-Feedback. , 2013, , .		2
71	Robust Nonlinear Hâˆž Output-Feedback for Spacecraft Attitude Control. , 2014, , .		2
72	On Laterally Perturbed Human Stance: Experiment, Model, and Control. Applied Bionics and Biomechanics, 2018, 2018, 1-20.	1.1	2

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73	Object surface exploration using low-cost rolling robotic fingertips. , 2018, , .		2
74	Position-Based Visual Servoing of a Micro-Aerial Vehicle Operating Indoor. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2019, 141, .	1.6	2
75	Development and piloting of a perturbation stationary bicycle robotic system that provides unexpected lateral perturbations during bicycling (the PerStBiRo system). BMC Geriatrics, 2021, 21, 71.	2.7	2
76	Grasping Assisting Algorithm in Tele-Operated Robotic Gripper. Applied Sciences (Switzerland), 2021, 11, 2640.	2.5	2
77	Dogs Can Understand Haptic Communication. , 2019, , .		2
78	Tight coupling of human walking and a four-legged walking-device inspired by insect six-legged locomotion. Engineering Research Express, 2020, 2, 036001.	1.6	2
79	Classifying the multi robot path finding problem into a quadratic competitive complexity class. Annals of Mathematics and Artificial Intelligence, 2008, 52, 169-203.	1.3	1
80	A time competitive heterogeneous multi robot path finding algorithm. , 2010, , .		1
81	Output feedback control of Micro Aerial Vehicle in indoor environment. , 2015, , .		1
82	Automatic design algorithm of a robotic end-effector for a set of sheet-metal parts. , 2015, , .		1
83	Grasping of Deformable Objects Applied to Organic Produce. Lecture Notes in Computer Science, 2011, , 396-397.	1.3	1
84	Position Control of a Pneumatic Actuator Under Varying External Force. Mechanics and Mechanical Engineering, 2018, 22, 1157-1174.	0.2	1
85	Design and Locomotion of a Semi-passive Mobile Platform. , 2006, , 319-330.		1
86	SIMJig - Smart Independent Minimalist Jig. IEEE Robotics and Automation Letters, 2022, 7, 3396-3403.	5.1	1
87	Editorial: Annals of Mathematics and Artificial Intelligence special issue on multi-robot coverage, search, and exploration. Annals of Mathematics and Artificial Intelligence, 2008, 52, 107-108.	1.3	0
88	Slippery Model for a Semi-Passive Mobile Platform Subject to External Wrenches. , 2008, , .		0
89	Classifying the Heterogeneous Multi-Robot online search problem into quadratic time competitive complexity class. , 2011, , .		0
90	A library for dynamic regrasping methods. , 2016, , .		0

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91	Design and Locomotion of a Semi-passive Mobile Platform. , 2006, , 319-330.		0