Haruhiko Asada

List of Publications by Citations

122 papers	2,473 citations	27 h-index	46 g-index
146 ext. papers	3,102 ext. citations	3.6 avg, IF	5.48 L-index

#	Paper	IF	Citations
122	Mobile monitoring with wearable photoplethysmographic biosensors. *IEEE Engineering in Medicine and Biology Magazine*, **2003**, 22, 28-40		287
121	Three-dimensionally printed biological machines powered by skeletal muscle. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 10125-30	11.5	262
120	A Geometrical Representation of Manipulator Dynamics and Its Application to Arm Design. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **1983**, 105, 131-142	1.6	194
119	Analysis and Design of a Direct-Drive Arm With a Five-Bar-Link Parallel Drive Mechanism. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **1984**, 106, 225-230	1.6	117
118	A New Method for Identifying Orders of Input-Output Models for Nonlinear Dynamic Systems **1993** ,		103
117	Large Effective-Strain Piezoelectric Actuators Using Nested Cellular Architecture With Exponential Strain Amplification Mechanisms. *IEEE/ASME Transactions on Mechatronics*, **2010**, 15, 770-782	5.5	82
116	Dll4-containing exosomes induce capillary sprout retraction in a 3D microenvironment. *Scientific Reports*, **2014**, 4, 4031	4.9	75
115	Computational modeling of three-dimensional ECM-rigidity sensing to guide directed cell migration. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, E390-E399	11.5	59
114	Active noise cancellation using MEMS accelerometers for motion-tolerant wearable bio-sensors. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, **2004**, 2004, 2157-60		51
113	Cell Invasion Dynamics into a Three Dimensional Extracellular Matrix Fibre Network. *PLoS Computational Biology*, **2015**, 11, e1004535	5	48
112	Demonstration-based control of supernumerary robotic limbs **2012**,		46
111	A process engineering approach to increase organoid yield. *Development (Cambridge)*, **2017**, 144, 1128-1136	6.36	37
110	. *IEEE Transactions on Robotics*, **2016**, 32, 301-311	6.5	36
109	Design and control of Supernumerary Robotic Limbs for balance augmentation **2015**,		35
108	. *IEEE Transactions on Robotics*, **2016**, 32, 176-186	6.5	35
107	Mathematical analysis of oxygen transfer through polydimethylsiloxane membrane between double layers of cell culture channel and gas chamber in microfluidic oxygenator. *Microfluidics and Nanofluidics*, **2013**, 15, 285-296	2.8	35
106	Supernumerary Robotic Limbs for aircraft fuselage assembly: Body stabilization and guidance by bracing **2014**,		35

105	Bracing the human body with supernumerary Robotic Limbs for physical assistance and load reduction **2014**,		34
104	Co-Simulation of Algebraically Coupled Dynamic Subsystems Without Disclosure of Proprietary Subsystem Models. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME* , **2004**, 126, 1-13	1.6	33
103	Concurrent Design Optimization of Mechanical Structure and Control for High Speed Robots. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **1994**, 116, 344-356	1.6	33
102	Bio-Artificial Synergies for Grasp Posture Control of Supernumerary Robotic Fingers		33
101	A dual-use visible light approach to integrated communication and localization of underwater robots with application to non-destructive nuclear reactor inspection **2012**,		31
100	A Variable Stiffness PZT Actuator Having Tunable Resonant Frequencies. *IEEE Transactions on Robotics*, **2010**, 26, 993-1005	6.5	31
99	The Winch-Bot: A cable-suspended, under-actuated robot utilizing parametric self-excitation **2009**,		31
98	A robot on the shoulder: Coordinated human-wearable robot control using Coloured Petri Nets and Partial Least Squares predictions **2014**,		30
97	Mag-Foot: A steel bridge inspection robot **2009**,		29
96	A compact, maneuverable, underwater robot for direct inspection of nuclear power piping systems **2012**,		27
95	Dynamic Analysis of Noncollocated Flexible Arms and Design of Torque Transmission Mechanisms. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **1994**, 116, 201-207	1.6	26
94	A Linkage Design for Direct-Drive Robot Arms. *Journal of Mechanisms, Transmissions, and Automation in Design*, **1985**, 107, 536-540		25
93	Low variance adaptive filter for cancelling motion artifact in wearable photoplethysmogram sensor signals. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, **2007**, 2007, 652-5		22
92	Nonlinear Feedback Control of a Gravity-Assisted Underactuated Manipulator With Application to Aircraft Assembly. *IEEE Transactions on Robotics*, **2009**, 25, 1125-1133	6.5	21
91	Adaptive hydrostatic blood pressure calibration: development of a wearable, autonomous pulse wave velocity blood pressure monitor. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, **2007**, 2007, 370-3		21
90	Blind System Identification of Noncoprime Multichannel Systems and Its Application to Noninvasive Cardiovascular Monitoring. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2004**, 126, 834-847	1.6	18
89	The MantisBot: Design and impedance control of supernumerary robotic limbs for near-ground work **2017**,		17
88	Hybrid Open-Loop Closed-Loop Control of Coupled HumanRobot Balance During Assisted Stance Transition With Extra Robotic Legs. *IEEE Robotics and Automation Letters*, **2019**, 4, 1676-1683	4.2	15

87	Blind Identification of Two-Channel IIR Systems With Application to Central Cardiovascular Monitoring. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2009**, 131,	1.6	15
86	Extracellular matrix remodelling induced by alternating electrical and mechanical stimulations increases the contraction of engineered skeletal muscle tissues. *Scientific Reports*, **2019**, 9, 2732	4.9	14
85	A Data-Driven Approach to Prediction and Optimal Bucket-Filling Control for Autonomous Excavators. *IEEE Robotics and Automation Letters*, **2020**, 5, 2682-2689	4.2	14
84	Empirical characterization of modular variable stiffness inflatable structures for supernumerary grasp-assist devices. *International Journal of Robotics Research*, **2017**, 36, 1391-1413	5.7	14
83	The eyeball ROV: Design and control of a spherical underwater vehicle steered by an internal eccentric mass **2011**,		14
82	Dynamic Analysis and Design of Spheroidal Underwater Robots for Precision Multidirectional Maneuvering. *IEEE/ASME Transactions on Mechatronics*, **2015**, 20, 2890-2902	5.5	13
81	Design and Analysis of 6-DOF Triple Scissor Extender Robots With Applications in Aircraft Assembly. *IEEE Robotics and Automation Letters*, **2017**, 2, 1420-1427	4.2	12
80	Supernumerary Robotic Fingers: An Alternative Upper-Limb Prosthesis **2014**,		12
79	Supernumerary Robotic Limbs for Human Augmentation in Overhead Assembly Tasks		12
78	A Model-Free Extremum-Seeking Approach to Autonomous Excavator Control Based on Output Power Maximization. *IEEE Robotics and Automation Letters*, **2019**, 4, 1005-1012	4.2	11
77	A ball-shaped underwater robot for direct inspection of nuclear reactors and other water-filled infrastructure **2013**,		11
76	Modeling, Realization, and Simulation of Thermo-Fluid Systems Using Singularly Perturbed Sliding Manifolds. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2000**, 122, 699-707	1.6	11
75	Design of Extra Robotic Legs for Augmenting Human Payload Capabilities by Exploiting Singularity and Torque Redistribution **2018**,		11
74	Triple Scissor Extender Robot Arm: A Solution to the Last One Foot Problem of Manipulation. *IEEE Robotics and Automation Letters*, **2018**, 3, 3975-3982	4.2	10
73	A compact underwater vehicle using high-bandwidth coanda-effect valves for low speed precision maneuvering in cluttered environments **2011**,		10
72	An Underactuated, Magnetic-Foot Robot for Steel Bridge Inspection. *Journal of Mechanisms and Robotics*, **2010**, 2,	2.2	10
71	Otariidae-inspired Soft-robotic Supernumerary Flippers by Fabric Kirigami and Origami. *IEEE/ASME Transactions on Mechatronics*, **2020**, 1-1	5.5	10
70	Design of a Novel Mutliple-DOF Extendable Arm With Rigid Components Inspired by a Deployable Origami Structure. *IEEE Robotics and Automation Letters*, **2020**, 5, 2730-2737	4.2	9

69	Leveraging the Human Operator in the Design and Control of Supernumerary Robotic Limbs. *IEEE Robotics and Automation Letters*, **2020**, 5, 2177-2184	4.2	8
68	Broadcast feedback control of cell populations using stochastic Lyapunov functions with application to angiogenesis regulation **2008**,		8
67	MPC Performances for Nonlinear Systems Using Several Linearization Models **2020**,		8
66	Long-chain glucosylceramides crosstalk with LYN mediates endometrial cell migration. *Biochimica Et Biophysica Acta - Molecular and Cell Biology of Lipids*, **2018**, 1863, 71-80	5	7
65	Supernumerary Robotic Fingers as a Therapeutic Device for Hemiparetic Patients **2015**,		7
64	Quantification of magnetically induced changes in ECM local apparent stiffness. *Biophysical Journal*, **2014**, 106, 332-41	2.9	7
63	Identification of Multichannel Cardiovascular Dynamics Using Dual Laguerre Basis Functions for Noninvasive Cardiovascular Monitoring. *IEEE Transactions on Control Systems Technology*, **2010**, 18, 170-176	4.8	7
62	Scaling up shape memory alloy actuators using a recruitment control architecture **2010**,		6
61	Co-fabrication of live skeletal muscles as actuators in A millimeter scale mechanical system **2011**,		6
60	Determining Cell Fate Transition Probabilities to VEGF/Ang 1 Levels: Relating Computational Modeling to Microfluidic Angiogenesis Studies. *Cellular and Molecular Bioengineering*, **2010**, 3, 345-360	3.9	6
59	Broadcast Feedback for Stochastic Cellular Actuator Systems Consisting of Nonuniform Actuator Units. *Proceedings - IEEE International Conference on Robotics and Automation*, **2007**,		6
58	Design of PZT cellular actuators with power-law strain amplification **2007**,		6
57	Supernumerary Robotic Limbs to Assist Human Walking With Load Carriage. *Journal of Mechanisms and Robotics*, **2020**, 12,	2.2	6
56	Multicell migration tracking within angiogenic networks by deep learning-based segmentation and augmented Bayesian filtering. *Journal of Medical Imaging*, **2018**, 5, 024005	2.6	6
55	Modeling and Balance Control of Supernumerary Robotic Limb for Overhead Tasks. *IEEE Robotics and Automation Letters*, **2021**, 6, 4125-4132	4.2	6
54	Inherent Haptic Feedback From Supernumerary Robotic Limbs. *IEEE Transactions on Haptics*, **2021**, 14, 123-131	2.7	6
53	Variable Stiffness Pneumatic Structures for Wearable Supernumerary Robotic Devices. *Springer Proceedings in Advanced Robotics*, **2018**, 201-217	0.6	5
52	Design for precision multi-directional maneuverability: Egg-shaped underwater robots for infrastructure inspection **2014**,		5

51	Characterization of uniaxial stiffness of extracellular matrix embedded with magnetic beads via bio-conjugation and under the influence of an external magnetic field. *Journal of the Mechanical Behavior of Biomedical Materials*, **2014**, 30, 253-65	4.1	5
50	Localized Manipulation of Magnetic Particles in an Ensemble. *IEEE Access*, **2018**, 6, 24075-24088	3.5	5
49	Multi-cell ECM compaction is predictable via superposition of nonlinear cell dynamics linearized in augmented state space. *PLoS Computational Biology*, **2019**, 15, e1006798	5	4
48	Autonomous Excavation of Rocks Using a Gaussian Process Model and Unscented Kalman Filter. *IEEE Robotics and Automation Letters*, **2020**, 5, 2491-2497	4.2	4
47	Automated tracking of cells from phase contrast images by multiple hypothesis Kalman filters **2015** ,		4
46	In vivo label-free quantification of liver microcirculation using dual-modality microscopy. *Journal of Biomedical Optics*, **2014**, 19, 116006	3.5	4
45	Omni-Egg: A smooth, spheroidal, appendage free underwater robot capable of 5 DOF motions **2012**,		4
44	A multi-cell piezoelectric device for tunable resonance actuation and energy harvesting **2010**,		4
43	Tracking of cell population from time lapse and end point confocal microscopy images with multiple hypothesis Kalman smoothing filters **2010**,		4
42	Static lumped parameter model for nested PZT cellular actuators with exponential strain amplification mechanisms **2008**,		4
41	Dynamic analysis of a high-bandwidth, large-strain, PZT cellular muscle actuator with layered strain amplification **2008**,		4
40	Broadcast Feedback of Large-Scale, Distributed Stochastic Control Systems Inspired by Biological Muscle Control. *Proceedings of the American Control Conference*, **2007**,	1.2	4
39	Stochastic Optimal Control Laws for Cellular Artificial Muscles. *Proceedings - IEEE International Conference on Robotics and Automation*, **2007**,		4
38	Concurrent Design Optimization of Mechanical Structure and Control for High Speed Robots **1993**,		4
37	Approximated stochastic model predictive control using statistical linearization of nonlinear dynamical system in latent space **2016**,		4
36	Dual Faceted Linearization of Nonlinear Dynamical Systems Based on Physical Modeling Theory. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2019**, 141,	1.6	4
35	Decoupled Motion Control of Wearable Robot for Rejecting Human Induced Disturbances **2018**,		4
34	Triple Scissor Extender: A 6-DOF lifting and positioning robot **2016**,		3

33	Valve-PWM control of integrated pump-valve propulsion systems for highly maneuverable underwater vehicles **2012**,		3
32	Stochastic recruitment: Controlling state distribution among swarms of hybrid agents **2008**,		3
31	Precision Assembly of Heavy Objects Suspended With Multiple Cables From a Crane. *IEEE Robotics and Automation Letters*, **2020**, 5, 6876-6883	4.2	3
30	Design of a Growing Robot Inspired by Plant Growth **2019**,		3
29	**2019**,		3
28	Robotic Cane as a Soft SuperLimb for Elderly Sit-to-Stand Assistance **2020**,		2
27	A data-driven approach to precise linearization of nonlinear dynamical systems in augmented latent space **2016**,		2
26	Causality in dual faceted linearization of nonlinear dynamical systems **2018**,		2
25	Continuous path tracing by a cable-suspended, under-actuated robot: The Winch-Bot **2010**,		2
24	Stable control of distributed hysteretic systems using cellular broadcast stochastic feedback **2009**,		2
23	Cellular Stochastic Control of the Collective Output of a Class of Distributed Hysteretic Systems. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2011**, 133,	1.6	2
22	An Optical External Localization System and Applications to Indoor Tracking **2008**,		2
21	Dynamic Modeling of Bucket-Soil Interactions Using Koopman-DFL Lifting Linearization for Model Predictive Contouring Control of Autonomous Excavators. *IEEE Robotics and Automation Letters*, **2022**, 7, 151-158	4.2	2
20	Integrated Voluntary-Reactive Control of a Human-SuperLimb Hybrid System for Hemiplegic Patient Support. *IEEE Robotics and Automation Letters*, **2021**, 6, 1646-1653	4.2	2
19	Learning of Causal Observable Functions for Koopman-DFL Lifting Linearization of Nonlinear Controlled Systems and Its Application to Excavation Automation. *IEEE Robotics and Automation Letters*, **2021**, 6, 6297-6304	4.2	2
18	A Robotic Microscope System to Examine T Cell Receptor Acuity Against Tumor Neoantigens: A New Tool for Cancer Immunotherapy Research. *IEEE Robotics and Automation Letters*, **2019**, 4, 1760-1767	4.2	1
17	Stochastic tracking of migrating live cells interacting with 3D gel environment using augmented-space particle filters **2011**,		1
16	Simultaneous tracking of cell nuclei and conduit parameters from time-lapse confocal microscopy images **2011**,		1

15	Molecular signaling observer and predictor: A framework for closed-loop control of cell behaviors having long time delay **2011**,		1
14	A stochastic control framework for regulating collective behaviors of an angiogenesis cell population **2008**,		1
13	Equilibrium point control of artificial muscles using recruitment of many motor units **2008**,		1
12	Model Predictive Control and Transfer Learning of Hybrid Systems Using Lifting Linearization Applied to Cable Suspension Systems. *IEEE Robotics and Automation Letters*, **2021**, 1-1	4.2	1
11	Crawling Support Using Wearable SuperLimbs: Human-Robot Synchronization and Metabolic Cost Assessment **2021**,		1
10	Design and Time-Optimal Control of a High-Speed High-Torque Dual-Motor Actuator **2020**,		1
9	Design of a Fail-Safe Wearable Robot with Novel Extendable Arms for Ergonomic Accommodation during Floor Work **2019**,		1
8	TeachBot: Towards teaching robotics fundamentals for human-robot collaboration at work. *Heliyon* , **2021**, 7, e07583	3.6	1
7	An Extendable Continuum Robot Arm to Deal with a Confined Space Having Discontinuous Contact Area. *Mechanisms and Machine Science*, **2021**, 265-273	0.3	1
6	A computational modeling of invadopodia protrusion into an extracellular matrix fiber network.. *Scientific Reports*, **2022**, 12, 1231	4.9	0
5	Musculoskeletal Load Analysis for the Design and Control of a Wearable Robot Bracing the Human Body While Crawling on a Floor. *IEEE Access*, **2022**, 10, 6814-6829	3.5	0
4	Safe Tumbling of Heavy Objects Using a Two-Cable Crane. *IEEE Robotics and Automation Letters*, **2021**, 6, 1082-1089	4.2	0
3	An extendable continuum robot arm using a flexible screw as a backbone to propel inside a confined space with discontinuous contact area. *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*,095440622210800	1.3	0
2	Design of surface wave active beds based on human tissue physiology. *Advanced Robotics*, **2001**, 14, 717-742	1.7	
1	Control Strategy for Jam and Wedge-Free 3D Precision Insertion of Heavy Objects Suspended With a Multi-Cable Crane. *IEEE Robotics and Automation Letters*, **2021**, 6, 7453-7460	4.2	