Robert D Howe

List of Publications by Year
in descending order

70 papers	2,703 citations	331670 21 h-index	243625 44 g-index
70 all docs	70 docs citations	70 times ranked	2455 citing authors

#	Article	IF	Citations
1	A compliant, underactuated hand for robust manipulation. International Journal of Robotics Research, 2014, 33, 736-752.	8.5	471
2	Robotics for Surgery. Annual Review of Biomedical Engineering, 1999, 1, 211-240.	12.3	243
3	Tactile sensing and control of robotic manipulation. Advanced Robotics, 1993, 8, 245-261.	1.8	219
4	Tactile Display of Vibratory Information in Teleoperation and Virtual Environments. Presence: Teleoperators and Virtual Environments, 1995, 4, 387-402.	0.6	206
5	Mechanically Versatile Soft Machines through Laminar Jamming. Advanced Functional Materials, 2018, 28, 1707136.	14.9	159
6	The Benefit of Force Feedback in Surgery: Examination of Blunt Dissection. Presence: Teleoperators and Virtual Environments, 2007, 16, 252-262.	0.6	133
7	Force Feedback Benefit Depends on Experience in Multiple Degree of Freedom Robotic Surgery Task. IEEE Transactions on Robotics, 2007, 23, 1235-1240.	10.3	93
8	The SDM Hand as a Prosthetic Terminal Device: A Feasibility Study. , 2007, , .		80
9	Stickâ€On Largeâ€Strain Sensors for Soft Robots. Advanced Materials Interfaces, 2019, 6, 1900985.	3.7	79
10	Force tracking with feed-forward motion estimation for beating heart surgery. IEEE Transactions on Robotics, 2010, 26, 888-896.	10.3	70
11	Joint coupling design of underactuated hands for unstructured environments. International Journal of Robotics Research, 2011, 30, 1157-1169.	8.5	70
12	Simple, Robust Autonomous Grasping in Unstructured Environments. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	68
13	Contact sensing and grasping performance of compliant hands. Autonomous Robots, 2010, 28, 65-75.	4.8	66
14	Soft Tactile Sensor Arrays for Force Feedback in Micromanipulation. IEEE Sensors Journal, 2014, 14, 1443-1452.	4.7	59
15	Individualization of exosuit assistance based on measured muscle dynamics during versatile walking. Science Robotics, 2021, 6, eabj1362.	17.6	59
16	An Analytical Loading Model for <inline-formula> <tex-math notation="LaTeX">n</tex-math> </inline-formula>-Tendon Continuum Robots. IEEE Transactions on Robotics, 2018, 34, 1215-1225.	10.3	50
17	Transforming the Dynamic Response of Robotic Structures and Systems Through Laminar Jamming. IEEE Robotics and Automation Letters, 2018, 3, 688-695.	5.1	42
18	Design and control of motion compensation cardiac catheters. , 2010, 2010, 1059-1065.		39

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19	Lightweight Highly Tunable Jamming-Based Composites. Soft Robotics, 2020, 7, 724-735.	8.0	32
20	Real-Time Visual Servoing of a Robot Using Three-Dimensional Ultrasound. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	31
21	Soft tactile sensor arrays for micromanipulation. , 2012, , .		31
22	Performance Analysis of a Haptic Telemanipulation Task under Time Delay. Advanced Robotics, 2011, 25, 651-673.	1.8	29
23	An Active Motion Compensation Instrument for Beating Heart Mitral Valve Surgery. , 2007, , .		28
24	A Modeling Framework for Jamming Structures. Advanced Functional Materials, 2021, 31, 2007554.	14.9	27
25	Increasing Accuracy in Image-Guided Robotic Surgery Through Tip Tracking and Model-Based Flexion Correction. IEEE Transactions on Robotics, 2009, 25, 292-302.	10.3	25
26	Automated pointing of cardiac imaging catheters. , 2013, 2013, 5794-5799.		23
27	Algorithms for Automatically Pointing Ultrasound Imaging Catheters. IEEE Transactions on Robotics, 2017, 33, 81-91.	10.3	21
28	Towards a design optimization method for reducing the mechanical complexity of underactuated robotic hands. , 2012, , .		20
29	Fast block flow tracking of atrial septal defects in 4D echocardiography. Medical Image Analysis, 2008, 12, 397-412.	11.6	19
30	Fast vision-based catheter 3D reconstruction. Physics in Medicine and Biology, 2016, 61, 5128-5148.	3.0	18
31	Dexterous high-precision robotic wrist for micromanipulation. , 2013, , .		17
32	Automatically steering cardiac catheters in vivo with respiratory motion compensation. International Journal of Robotics Research, 2020, 39, 586-597.	8.5	17
33	A robotic system for actively stiffening flexible manipulators. , 2015, 2015, 216-221.		12
34	Straightening of curved pattern of collagen fibers under load controls aortic valve shape. Journal of Biomechanics, 2014, 47, 341-346.	2.1	11
35	Haptic Implications of Tool Flexibility in Surgical Teleoperation. , 2008, , .		9
36	On the design of an interactive, patient-specific surgical simulator for mitral valve repair. , 2011, , .		9

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37	Instrument Tracking and Visualization for Ultrasound Catheter Guided Procedures. Lecture Notes in Computer Science, 2014, 8678, 41-50.	1.3	9
38	Hypnosis for rehabilitation after stroke: six case studies. Contemporary Hypnosis, 2006, 23, 173-180.	0.7	8
39	A whole-arm tactile display system. , 2009, , .		7
40	A 4-DOF Robot for Positioning Ultrasound Imaging Catheters. , 2015, 5A, .		7
41	Fast imageâ€based mitral valve simulation from individualized geometry. International Journal of Medical Robotics and Computer Assisted Surgery, 2018, 14, e1880.	2.3	7
42	Automated detection of soleus concentric contraction in variable gait conditions for improved exosuit control. , 2020, , .		7
43	Low-Cost Fiducial-based 6-Axis Force-Torque Sensor. , 2020, , .		7
44	Vibration Enhances Geometry Perception with Tactile Shape Displays. , 2007, , .		6
45	A Four Degree of Freedom Robot for Positioning Ultrasound Imaging Catheters. Journal of Mechanisms and Robotics, 2016, 8, 0510161-510169.	2.2	6
46	High dynamic range ultrasound imaging. International Journal of Computer Assisted Radiology and Surgery, 2018, 13, 721-729.	2.8	6
47	Enabling 3D Ultrasound Procedure Guidance through Enhanced Visualization. Lecture Notes in Computer Science, 2012, 7330, 115-124.	1.3	6
48	Compensation for unconstrained catheter shaft motion in cardiac catheters. , 2016, 2016, 4436-4442.		5
49	Predictive filtering in motion compensation with steerable cardiac catheters. , 2017, 2017, 4830-4836.		5
50	Controlling Palm-Object Interactions Via Friction for Enhanced In-Hand Manipulation. IEEE Robotics and Automation Letters, 2022, 7, 2258-2265.	5.1	5
51	Measurement System for the Characterization of Micro-Manipulation Motion and Force. Journal of Medical Devices, Transactions of the ASME, 2013, 7, .	0.7	4
52	General Forward Kinematics for Tendon-Driven Continuum Robots. IEEE Access, 2022, 10, 60330-60340.	4.2	4
53	Robotic motion compensation for beating intracardiac surgery. , 2008, , .		3
54	Fiber Optic Projection-Imaging System for Shape Measurement in Confined Space. Scientific World Journal, The, 2014, 2014, 1-10.	2.1	3

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55	An Analytical Tension Model for Continuum Robots with n Generally Positioned Tendons. Journal of Medical Robotics Research, 2019, 04, 1942003.	1.2	2
56	Mass-Spring vs. Finite Element Models of Anisotropic Heart Valves: Speed and Accuracy. , 2010, , .		2
57	Fast Simulation of Mitral Annuloplasty for Surgical Planning. Lecture Notes in Computer Science, 2013, 7945, 106-113.	1.3	2
58	Thomas McMahon: A Dedication in Memoriam. Annual Review of Biomedical Engineering, 2001, 3, xv-xxxix.	12.3	1
59	Design of a Motion Compensated Tissue Resection Catheter for Beating Heart Cardiac Surgery. Journal of Medical Devices, Transactions of the ASME, 2011, 5, .	0.7	1
60	Differential Spring Stiffness Design for Finger Therapy Exercise Device: Bio-inspired from Stiff Pathological Finger Joints. Journal of Medical Devices, Transactions of the ASME, 2012, 6, .	0.7	1
61	A Deployable Transseptal Brace for Stabilizing Cardiac Catheters. Journal of Mechanical Design, Transactions of the ASME, 2018, 140, 0750031-7500312.	2.9	1
62	Ultrasound imaging for identifying dynamics of soft tissue. , 2018, , .		1
63	Slack and Excessive Loading Avoidance in n-Tendon Continuum Robots. IEEE Access, 2020, 8, 138730-138742.	4.2	1
64	Ultrasound Imaging Characterization of Soft Tissue Dynamics of the Seated Human Body. Journal of Biomechanical Engineering, 2020, 142, .	1.3	1
65	Bayesian Changepoint Detection Through Switching Regressions: Contact Point Determination in Material Indentation Experiments. , 2007, , .		0
66	Few D.O.F. Walking Robot with Outer-Wheels. , 2007, , .		0
67	Improving teleoperation performance in the presence of non-ideal robot dynamics. , 2008, , .		0
68	On the convergence of Braitenberg vehicle 3a immersed in parabolic stimuli. , 2011, , .		0
69	Stereo Display of 3D Ultrasound Images for Surgical Robot Guidance. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0
70	Gaussian process regression for ultrasound scanline interpolation. Journal of Medical Imaging, 2022, 9, .	1.5	0