Kaspar Althoefer

List of Publications by Year
in descending order

149 papers	5,241 citations	117625 34 h-index	106344 65 g-index
150 all docs	150 docs citations	150 times ranked	4362 citing authors

#	Article	IF	Citations
1	Attribution of autonomy and its role in robotic language acquisition. AI and Society, 2022, 37, 605-617.	4.6	3
2	Dynamic characterization of a masterâ€“slave robotic manipulator using a hybrid grey wolfâ€“whale optimization algorithm. JVC/Journal of Vibration and Control, 2022, 28, 1992-2003.	2.6	6
3	Variable weight algorithm for convolutional neural networks and its applications to classification of seizure phases and types. Pattern Recognition, 2022, 121, 108226.	8.1	16
4	Magnetic-Field-Inspired Navigation for Robots in Complex and Unknown Environments. Frontiers in Robotics and AI, 2022, 9, 834177.	3.2	4
5	Soft Robot-Assisted Minimally Invasive Surgery and Interventions: Advances and Outlook. Proceedings of the IEEE, 2022, 110, 871-892.	21.3	15
6	Real-Time Pressure Estimation and Localisation with Optical Tomography-inspired Soft Skin Sensors. , 2022, , .		1
7	Grasping State and Object Estimation of a Flat Shell Gripper by Strain and Proximity Measurement using a Single Capacitance-Based Sensor. , 2022, , .		0
8	The Validation of Viscosity Induced Chord-wise Undulation on Soft Fin Ray Array Towards a Novel Robotic Manta Ray. , 2022, , .		2
9	A Comparison of Silicone and Fabric Inflatable Actuators for Soft Hand Exoskeletons. , 2022, , .		2
10	Curvature and Contact Sensing with Optical Waveguides for Soft Silicone Pneumatic Actuator. , 2022, , .		3
11	An Electro-pneumatic Shape Morphing Rolling Robot with Variable Locomotion Modes. , 2022, , .		1
12	Performance Evaluation and Optimisation of Multi-point Waveguide based optical Sensor for Soft Robots. , 2022, , .		0
13	Tactile Classification of Object Materials for Virtual Reality based Robot Teleoperation. , 2022, , .		3
14	F-TOUCH Sensor: Concurrent Geometry Perception and Multi-Axis Force Measurement. IEEE Sensors Journal, 2021, 21, 4300-4309.	4.7	15
15	TMTDyn: A Matlab package for modeling and control of hybrid rigidâ€“continuum robots based on discretized lumped systems and reduced-order models. International Journal of Robotics Research, 2021, 40, 296-347.	8.5	52
16	Stiffness Control of Variable Stiffness Link Using a Conductive Fabric Based Proximity Sensor. , 2021, , .		1
17	Soft Robotics Solutions for Minimally Invasive Surgery: The Need for Stiffness Controllability. RSC Soft Matter, 2021, , 684-719.	0.4	1
18	Robotics Responds to the COVID-19 Outbreak [From the Guest Editors]. IEEE Robotics and Automation Magazine, 2021, 28, 16-17.	2.0	2

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19	Fusing Dexterity and Perception for Soft Robot-Assisted Minimally Invasive Surgery: What We Learnt from STIFF-FLOP. Applied Sciences (Switzerland), 2021, 11, 6586.	2.5	13
20	Largeâ€Scale Surface Shape Sensing with Learningâ€Based Computational Mechanics. Advanced Intelligent Systems, 2021, 3, 2100089.	6.1	6
21	Innovation in the time of SARS-CoV-2: A collaborative journey between NHS clinicians, engineers, academics and industry. Journal of the Royal College of Surgeons of Edinburgh, 2021, 19, e281-e288.	1.8	1
22	Multi-modal robotic visual-tactile localisation and detection of surface cracks. , 2021, , .		3
23	A Suite of Robotic Solutions for Nuclear Waste Decommissioning. Robotics, 2021, 10, 112.	3.5	21
24	Workspace Scaling and Rate Mode Control for Virtual Reality based Robot Teleoperation. , 2021, , .		3
25	Virtual Reality based Telerobotics Framework with Depth Cameras. , 2020, , .		15
26	Attention Enhancement and Motion Assistance for Virtual Reality-Mediated Upper-Limb Rehabilitation. IEEE Transactions on Medical Robotics and Bionics, 2020, 2, 565-568.	3.2	0
27	Plant Bioinspired Ecological Robotics. Frontiers in Robotics and AI, 2020, 7, 79.	3.2	3
28	A bending sensor insensitive to pressure: soft proprioception based on abraded optical fibres. , 2020, , .		7
29	Model-Based Pose Control of Inflatable Eversion Robot With Variable Stiffness. IEEE Robotics and Automation Letters, 2020, 5, 3398-3405.	5.1	25
30	Stiffness Imaging With a Continuum Appendage: Real-Time Shape and Tip Force Estimation From Base Load Readings. IEEE Robotics and Automation Letters, 2020, 5, 2824-2831.	5.1	19
31	Automatic Fracture Characterization Using Tactile and Proximity Optical Sensing. Frontiers in Robotics and AI, 2020, 7, 513004.	3.2	5
32	Silicone Based Capacitive E-Skin Sensor for Soft Surgical Robots. Lecture Notes in Computer Science, 2020, , 62-65.	1.3	1
33	An Inhomogeneous Structured Eversion Actuator. Lecture Notes in Computer Science, 2020, , 37-48.	1.3	1
34	A Two-Fingered Robot Gripper with Variable Stiffness Flexure Hinges Based on Shape Morphing. , 2020, , .		2
35	Observer-based Control of Inflatable Robot with Variable Stiffness. , 2020, , .		2
36	F-TOUCH Sensor for Three-Axis Forces Measurement and Geometry Observation. , 2020, , .		3

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37	Silicone-based Capacitive E-skin for Exteroception and Proprioception. , 2020, , .		9
38	iCLAP: shape recognition by combining proprioception and touch sensing. Autonomous Robots, 2019, 43, 993-1004.	4.8	28
39	Payload Capabilities and Operational Limits of Eversion Robots. Lecture Notes in Computer Science, 2019, , 383-394.	1.3	13
40	Elastomer-Based Touch Sensor: Visualization of Tactile Pressure Distribution. Lecture Notes in Computer Science, 2019, , 87-98.	1.3	2
41	Modelling of a Soft Sensor for Exteroception and Proprioception in a Pneumatically Actuated Soft Robot. Lecture Notes in Computer Science, 2019, , 99-110.	1.3	5
42	Light Intensity-Modulated Bending Sensor Fabrication and Performance Test for Shape Sensing. Lecture Notes in Computer Science, 2019, , 126-137.	1.3	1
43	Design Analysis of a Fabric Based Lightweight Robotic Gripper. Lecture Notes in Computer Science, 2019, , 16-27.	1.3	10
44	Kinematic Control and Obstacle Avoidance for Soft Inflatable Manipulator. Lecture Notes in Computer Science, 2019, , 52-64.	1.3	5
45	An Elastomer-based Flexible Optical Force and Tactile Sensor. , 2019, , .		14
46	Design and Implementation of a Bespoke Robotic Manipulator for Extra-corporeal Ultrasound. Journal of Visualized Experiments, 2019, , .	0.3	7
47	Elasticity Versus Hyperelasticity Considerations in Quasistatic Modeling of a Soft Finger-Like Robotic Appendage for Real-Time Position and Force Estimation. Soft Robotics, 2019, 6, 228-249.	8.0	35
48	Analysis of a Customized Clutch Joint Designed for the Safety Management of an Ultrasound Robot. Applied Sciences (Switzerland), 2019, 9, 1900.	2.5	21
49	An Attention-Controlled Hand Exoskeleton for the Rehabilitation of Finger Extension and Flexion Using a Rigid-Soft Combined Mechanism. Frontiers in Neurorobotics, 2019, 13, 34.	2.8	51
50	Adaptive Update of Reference Capacitances in Conductive Fabric Based Robotic Skin. IEEE Robotics and Automation Letters, 2019, 4, 2212-2219.	5.1	14
51	Antagonistic actuation and stiffness control in soft inflatable robots. Nature Reviews Materials, 2018, 3, 76-77.	48.7	43
52	Three-Dimensional-Printable Thermoactive Helical Interface With Decentralized Morphological Stiffness Control for Continuum Manipulators. IEEE Robotics and Automation Letters, 2018, 3, 2283-2290.	5.1	11
53	Control Space Reduction and Real-Time Accurate Modeling of Continuum Manipulators Using Ritz and Ritzâ€“Galerkin Methods. IEEE Robotics and Automation Letters, 2018, 3, 328-335.	5.1	80
54	Modelling the structure of object-independent human affordances of approaching to grasp for robotic hands. PLoS ONE, 2018, 13, e0208228.	2.5	2

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55	Soft Biomimetic Prosthetic Hand: Design, Manufacturing and Preliminary Examination. , 2018, , .		36
56	Static Kinematics for an Antagonistically Actuated Robot Based on a Beam-Mechanics-Based Model. , 2018, , .		13
57	Localized online learning-based control of a soft redundant manipulator under variable loading. Advanced Robotics, 2018, 32, 1168-1183.	1.8	20
58	Bio-Inspired Octopus Robot Based on Novel Soft Fluidic Actuator. , 2018, , .		27
59	Reactive Magnetic-Field-Inspired Navigation for Non-Holonomic Mobile Robots in Unknown Environments. , 2018, , .		8
60	Plant-Inspired Soft Pneumatic Eversion Robot. , 2018, , .		23
61	Reactive Magnetic-Field-Inspired Navigation Method for Robots in Unknown Convex 3-D Environments. IEEE Robotics and Automation Letters, 2018, 3, 3583-3590.	5.1	15
62	AirExGlove â€" A novel pneumatic exoskeleton glove for adaptive hand rehabilitation in post-stroke patients. , 2018, , .		41
63	Real-Time Vision-Based Stiffness Mapping â€. Sensors, 2018, 18, 1347.	3.8	7
64	Development of an adaptable, soft robot with an aortic diameter sensor to modulate blood flow in an extreme biological environment. , 2018, , .		0
65	Highly dexterous 2â€module soft robot for intraâ€organ navigation in minimally invasive surgery. International Journal of Medical Robotics and Computer Assisted Surgery, 2018, 14, e1875.	2.3	79
66	The Role of the Thumb: Study of Finger Motion in Grasping and Reachability Space in Human and Robotic Hands. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2017, 47, 1061-1070.	9.3	31
67	Knock-Knock: Acoustic object recognition by using stacked denoising autoencoders. Neurocomputing, 2017, 267, 18-24.	5.9	39
68	A Novel Concept for Safe, Stiffness-Controllable Robot Links. Soft Robotics, 2017, 4, 16-22.	8.0	62
69	Detecting NQR signals severely polluted by interference. Signal Processing, 2017, 138, 256-264.	3.7	18
70	Ex vivo study of prostate cancer localization using rolling mechanical imaging towards minimally invasive surgery. Medical Engineering and Physics, 2017, 43, 112-117.	1.7	4
71	Nonparametric Online Learning Control for Soft Continuum Robot: An Enabling Technique for Effective Endoscopic Navigation. Soft Robotics, 2017, 4, 324-337.	8.0	89
72	Variable Stiffness Link (VSL): Toward inherently safe robotic manipulators. , 2017, , .		35

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73	Anchoring like octopus: biologically inspired soft artificial sucker. Journal of the Royal Society Interface, 2017, 14, 20170395.	3.4	52
74	Total mesorectal excision using a soft and flexible robotic arm: a feasibility study in cadaver models. Surgical Endoscopy and Other Interventional Techniques, 2017, 31, 264-273.	2.4	61
75	Low cost soft endoscope robotic probe. , 2017, , .		2
76	A Geometry Deformation Model for Braided Continuum Manipulators. Frontiers in Robotics and AI, 2017, 4, .	3.2	43
77	Fingertip Fiber Optical Tactile Array with Two-Level Spring Structure. Sensors, 2017, 17, 2337.	3.8	23
78	Palpation force modulation strategies to identify hard regions in soft tissue organs. PLoS ONE, 2017, 12, e0171706.	2.5	45
79	Evaluation of stiffness feedback for hard nodule identification on a phantom silicone model. PLoS ONE, 2017, 12, e0172703.	2.5	12
80	A geometry deformation model for compound continuum manipulators with external loading. , 2016, , .		13
81	Low cost robotic endoscope design considerations. , 2016, , .		4
82	Towards safer obstacle avoidance for continuum-style manipulator in dynamic environments. , 2016, , .		7
83	Real-time pose estimation and obstacle avoidance for multi-segment continuum manipulator in dynamic environments. , 2016, , .		15
84	Kinematic Control of Continuum Manipulators Using a Fuzzy-Model-Based Approach. IEEE Transactions on Industrial Electronics, 2016, 63, 5022-5035.	7.9	59
85	Robotic Ultrasound: View Planning, Tracking, and Automatic Acquisition of Transesophageal Echocardiography. IEEE Robotics and Automation Magazine, 2016, 23, 118-127.	2.0	20
86	Image-Based Optical Miniaturized Three-Axis Force Sensor for Cardiac Catheterization. IEEE Sensors Journal, 2016, 16, 7924-7932.	4.7	47
87	A compact continuum manipulator system with enhanced steering abilities for robot-assisted surgery. , 2016, , .		2
88	Canceling strong and complex interference in NQR-based landmine detection. , 2016, , .		1
89	Stable Grip Control on Soft Objects With Time-Varying Stiffness. IEEE Transactions on Robotics, 2016, 32, 626-637.	10.3	8
90	In-Hand Object Pose Estimation Using Covariance-Based Tactile To Geometry Matching. IEEE Robotics and Automation Letters, 2016, 1, 570-577.	5.1	51

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91	A Novel Continuum Manipulator Design Using Serially Connected Double-Layer Planar Springs. IEEE/ASME Transactions on Mechatronics, 2016, 21, 1281-1292.	5.8	75
92	Robot Competitions: What Did We Learn? [Competitions]. IEEE Robotics and Automation Magazine, 2016, 23, 16-18.	2.0	14
93	Tendon-Based Stiffening for a Pneumatically Actuated Soft Manipulator. IEEE Robotics and Automation Letters, 2016, 1, 632-637.	5.1	148
94	Six-Dimensional Compliance Analysis and Validation of Orthoplanar Springs. Journal of Mechanical Design, Transactions of the ASME, 2016, 138, .	2.9	16
95	Evaluation of Pseudo-Haptic Interactions with Soft Objects in Virtual Environments. PLoS ONE, 2016, 11, e0157681.	2.5	13
96	14N NQR, relaxation and molecular dynamics of the explosive TNT. Solid State Nuclear Magnetic Resonance, 2015, 71, 61-66.	2.3	2
97	Identification of Haptic Based Guiding Using Hard Reins. PLoS ONE, 2015, 10, e0132020.	2.5	5
98	Using visual cues to enhance haptic feedback for palpation on virtual model of soft tissue. Medical and Biological Engineering and Computing, 2015, 53, 1177-1186.	2.8	33
99	Soft and Stretchable Sensor Using Biocompatible Electrodes and Liquid for Medical Applications. Soft Robotics, 2015, 2, 146-154.	8.0	92
100	Macrobend optical sensing for pose measurement in soft robot arms. Smart Materials and Structures, 2015, 24, 125024.	3.5	108
101	Modeling and Optimizing Output Characteristics of Intensity Modulated Optical Fiber-Based Displacement Sensors. IEEE Transactions on Instrumentation and Measurement, 2015, 64, 758-767.	4.7	11
102	Finger contact sensing and the application in dexterous hand manipulation. Autonomous Robots, 2015, 39, 25-41.	4.8	48
103	A Fiber-Optics-Based Body Contact Sensor for a Flexible Manipulator. IEEE Sensors Journal, 2015, 15, 3543-3550.	4.7	26
104	Global estimation of an objectâ€™s pose using tactile sensing. Advanced Robotics, 2015, 29, 363-374.	1.8	34
105	Batch-Specific Discrimination Using Nuclear Quadrupole Resonance Spectroscopy. Analytical Chemistry, 2015, 87, 3806-3811.	6.5	11
106	Off-resonance effects in 14N NQR signals from the pulsed spin-locking (PSL) and three-pulse echo sequence; a study for monoclinic TNT. Solid State Nuclear Magnetic Resonance, 2015, 71, 41-54.	2.3	1
107	Tendon and pressure actuation for a bio-inspired manipulator based on an antagonistic principle. , 2015, , .		73
108	Novel Tactile-SIFT Descriptor for Object Shape Recognition. IEEE Sensors Journal, 2015, 15, 5001-5009.	4.7	86

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109	Embedded electro-conductive yarn for shape sensing of soft robotic manipulators. , 2015, 2015, 8026-9.		37
110	Lecture Notes in Computer Science: An Antagonistic Actuation Technique for Simultaneous Stiffness and Position Control. Lecture Notes in Computer Science, 2015, , 164-174.	1.3	15
111	Robotic Granular Jamming: Does the Membrane Matter?. Soft Robotics, 2014, 1, 192-201.	8.0	93
112	Soft Robotics Technologies to Address Shortcomings in Today's Minimally Invasive Surgery: The STIFF-FLOP Approach. Soft Robotics, 2014, 1, 122-131.	8.0	411
113	Pseudo-haptics for rigid tool/soft surface interaction feedback in virtual environments. Mechatronics, 2014, 24, 1092-1100.	3.3	12
114	Simplifying grasping complexity through generalization of kinaesthetically learned synergies. , 2014, , .		6
115	<scp>MRI</scp>â€safe robots. Why are they not yet routinely used?. BJU International, 2014, 113, 975-976.	2.5	1
116	Inverse finite-element modeling for tissue parameter identification using a rolling indentation probe. Medical and Biological Engineering and Computing, 2014, 52, 17-28.	2.8	19
117	Implementation of Tactile Sensing for Palpation in Robot-Assisted Minimally Invasive Surgery: A Review. IEEE Sensors Journal, 2014, 14, 2490-2501.	4.7	121
118	Behavioral Characteristics of Manual Palpation to Localize Hard Nodules in Soft Tissues. IEEE Transactions on Biomedical Engineering, 2014, 61, 1651-1659.	4.2	32
119	Multi-fingered haptic palpation using pneumatic feedback actuators. Sensors and Actuators A: Physical, 2014, 218, 132-141.	4.1	42
120	An Optical Tactile Array Probe Head for Tissue Palpation During Minimally Invasive Surgery. IEEE Sensors Journal, 2014, 14, 3283-3291.	4.7	44
121	Robot guided bolt tensioning tool with adaptive process control for the automated assembly of wind turbine rotor blade bearings. Production Engineering, 2014, 8, 755-764.	2.3	6
122	Surface flattening of the human left atrium and proof-of-concept clinical applications. Computerized Medical Imaging and Graphics, 2014, 38, 251-266.	5.8	26
123	Shrinkable, stiffness-controllable soft manipulator based on a bio-inspired antagonistic actuation principle. , 2014, , .		93
124	Observational Learning: Basis, Experimental Results and Models, and Implications for Robotics. Cognitive Computation, 2013, 5, 340-354.	5.2	5
125	Nitrogen-14 Nuclear Quadrupole Resonance Spectroscopy: A Promising Analytical Methodology for Medicines Authentication and Counterfeit Antimalarial Analysis. Analytical Chemistry, 2013, 85, 2746-2753.	6.5	34
126	Air-float Palpation Probe for Tissue Abnormality Identification During Minimally Invasive Surgery. IEEE Transactions on Biomedical Engineering, 2013, 60, 2735-2744.	4.2	17

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127	An optical curvature sensor for flexible manipulators. , 2013, , .		40
128	A 2-Axis Optical Forceâ€“Torque Fingertip Sensor for Dexterous Grasping Using Linear Polarizers. IEEE Transactions on Instrumentation and Measurement, 2012, 61, 3363-3377.	4.7	7
129	Design of a variable stiffness flexible manipulator with composite granular jamming and membrane coupling. , 2012, , .		115
130	Novel Air-float Tactile Array for Stiffness Characterization in Soft Tissue Palpation. Procedia Engineering, 2012, 41, 281-288.	1.2	5
131	Object pose estimation and tracking by fusing visual and tactile information. , 2012, , .		19
132	Finite-Element Modeling of Soft Tissue Rolling Indentation. IEEE Transactions on Biomedical Engineering, 2011, 58, 3319-3327.	4.2	62
133	Rolling Indentation Probe for Tissue Abnormality Identification During Minimally Invasive Surgery. IEEE Transactions on Robotics, 2011, 27, 450-460.	10.3	75
134	Tactile sensing for dexterous in-hand manipulation in roboticsâ€”A review. Sensors and Actuators A: Physical, 2011, 167, 171-187.	4.1	634
135	Trackâ€“terrain modelling and traversability prediction for tracked vehicles on soft terrain. Journal of Terramechanics, 2010, 47, 151-160.	3.1	62
136	A Comparative Study Between an Improved Novel Air-Cushion Sensor and a Wheeled Probe for Minimally Invasive Surgery. Journal of Endourology, 2010, 24, 1155-1159.	2.1	1
137	MRI-Compatible Fiber-Optic Force Sensors for Catheterization Procedures. IEEE Sensors Journal, 2010, 10, 1598-1608.	4.7	115
138	Hybrid Soil Parameter Measurement and Estimation Scheme for Excavation Automation. IEEE Transactions on Instrumentation and Measurement, 2009, 58, 3633-3641.	4.7	18
139	THE SCIENCE BEHIND HAPTICS IN ROBOTIC UROLOGICAL SURGERY. BJU International, 2009, 104, 433-434.	2.5	2
140	Quantitative ³⁵Cl Nuclear Quadrupole Resonance in Tablets of the Antidiabetic Medicine Diabinese. Analytical Chemistry, 2009, 81, 5574-5576.	6.5	11
141	The modelling and estimation of driving forces for unmanned ground vehicles in outdoor terrain. International Journal of Modelling, Identification and Control, 2009, 6, 40.	0.2	13
142	Robust Detection of Stochastic Nuclear Quadrupole Resonance Signals. IEEE Transactions on Signal Processing, 2008, 56, 4221-4229.	5.3	31
143	State-of-the-Art in Force and Tactile Sensing for Minimally Invasive Surgery. IEEE Sensors Journal, 2008, 8, 371-381.	4.7	456
144	Soil Parameter Identification and Driving Force Prediction for Wheel-Terrain Interaction. International Journal of Advanced Robotic Systems, 2008, 5, 35.	2.1	18

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145	Exploiting Spin Echo Decay in the Detection of Nuclear Quadrupole Resonance Signals. IEEE Transactions on Geoscience and Remote Sensing, 2007, 45, 925-933.	6.3	41
146	Simulation of ultrasound imaging inside fully charged pipes. Automation in Construction, 2006, 15, 355-364.	9.8	3
147	Soil parameter identification for wheel-terrain interaction dynamics and traversability prediction. International Journal of Automation and Computing, 2006, 3, 244-251.	4.5	33
148	Modelling of closed-chain manipulators on an excavator vehicle. Mathematical and Computer Modelling of Dynamical Systems, 2006, 12, 329-345.	2.2	6
149	Reinforcement learning in a rule-based navigator for robotic manipulators. Neurocomputing, 2001, 37, 51-70.	5.9	41