Thrishantha Nanayakkara

List of Publications by Year
in descending order

139 papers	2,640 citations	257450 24 h-index	254184 43 g-index
146 all docs	146 docs citations	146 times ranked	2387 citing authors

#	Article	IF	Citations
1	Action Augmentation of Tactile Perception for Soft-Body Palpation. Soft Robotics, 2022, 9, 280-292.	8.0	17
2	A Tapered Whisker-Based Physical Reservoir Computing System for Mobile Robot Terrain Identification in Unstructured Environments. IEEE Robotics and Automation Letters, 2022, 7, 3608-3615.	5.1	8
3	Simulating dynamic facial expressions of pain from visuo-haptic interactions with a robotic patient. Scientific Reports, 2022, 12, 4200.	3.3	2
4	3D-Printed Soft Sensors for Adaptive Sensing with Online and Offline Tunable Stiffness. Soft Robotics, 2022, 9, 1062-1073.	8.0	8
5	A Semi-Supervised Reservoir Computing System Based on Tapered Whisker for Mobile Robot Terrain Identification and Roughness Estimation. IEEE Robotics and Automation Letters, 2022, 7, 5655-5662.	5.1	5
6	Origami Inspired Design for Capsule Endoscope to Retrograde Using Intestinal Peristalsis. IEEE Robotics and Automation Letters, 2022, 7, 5429-5435.	5.1	4
7	Soft Tissue Characterisation Using a Novel Robotic Medical Percussion Device With Acoustic Analysis and Neural Networks. IEEE Robotics and Automation Letters, 2022, 7, 11314-11321.	5.1	0
8	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
9	A Soft Pressure Sensor Skin to Predict Contact Pressure Limit Under Hand Orthosis. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2021, 29, 536-545.	4.9	4
10	MorphFace: A Hybrid Morphable Face for a Robopatient. IEEE Robotics and Automation Letters, 2021, 6, 643-650.	5.1	7
11	A State-Dependent Damping Method to Reduce Collision Force and Its Variability. IEEE Robotics and Automation Letters, 2021, 6, 3025-3032.	5.1	4
12	A method to 3D print a programmable continuum actuator with single material using internal constraint. Sensors and Actuators A: Physical, 2021, 324, 112674.	4.1	6
13	An Abdominal Phantom With Tunable Stiffness Nodules and Force Sensing Capability for Palpation Training. IEEE Transactions on Robotics, 2021, 37, 1051-1064.	10.3	11
14	A Haptic Mouse Design with Stiffening Muscle Layer for Simulating Guarding in Abdominal Palpation Training. , 2021, , .		5
15	Comparative Analysis of Model-Based Predictive Shared Control for Delayed Operation in Object Reaching and Recognition Tasks With Tactile Sensing. Frontiers in Robotics and AI, 2021, 8, 730946.	3.2	8
16	Adapting the visuo-haptic perception through muscle coactivation. Scientific Reports, 2021, 11, 21986.	3.3	5
17	A Method to use Nonlinear Dynamics in a Whisker Sensor for Terrain Identification by Mobile Robots. , 2021, , .		5
18	A Stiffness Controllable Multimodal Whisker Sensor Follicle for Texture Comparison. IEEE Sensors Journal, 2020, 20, 2320-2328.	4.7	11

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19	Conditioned haptic perception for 3D localization of nodules in soft tissue palpation with a variable stiffness probe. PLoS ONE, 2020, 15, e0237379.	2.5	8
20	Facial Expression Rendering in Medical Training Simulators: Current Status and Future Directions. IEEE Access, 2020, 8, 215874-215891.	4.2	15
21	Editorial: Current Advances in Soft Robotics: Best Papers From RoboSoft 2018. Frontiers in Robotics and AI, 2020, 7, 56.	3.2	1
22	Precise In-Hand Manipulation of Soft Objects using Soft Fingertips with Tactile Sensing and Active Deformation. , 2020, , .		7
23	Sensorized Phantom For Characterizing Large Area Deformation of Soft Bodies for Medical Applications. , 2020, , .		3
24	A Soft Pressure Sensor Skin for Hand and Wrist Orthoses. IEEE Robotics and Automation Letters, 2020, 5, 2192-2199.	5.1	17
25	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
26	Soft Fingertips With Tactile Sensing and Active Deformation for Robust Grasping of Delicate Objects. IEEE Robotics and Automation Letters, 2020, 5, 2714-2721.	5.1	32
27	Human-Robot Medical Interaction. , 2020, , .		2
28	Title is missing!. , 2020, 15, e0237379.		0
29	Title is missing!. , 2020, 15, e0237379.		0
30	Title is missing!. , 2020, 15, e0237379.		0
31	Title is missing!. , 2020, 15, e0237379.		0
32	Title is missing!. , 2020, 15, e0237379.		0
33	Title is missing!. , 2020, 15, e0237379.		0
34	Significance of the Compliance of the Joints on the Dynamic Slip Resistance of a Bioinspired Hoof. IEEE Transactions on Robotics, 2019, 35, 1450-1463.	10.3	7
35	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
36	A Method to Guide Local Physical Adaptations in a Robot Based on Phase Portraits. IEEE Access, 2019, 7, 78830-78841.	4.2	1

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37	Autonomy of humans and robots. , 2019, , 131-140.		1
38	Human Behavioral Metrics of a Predictive Model Emerging During Robot Assisted Following Without Visual Feedback. IEEE Robotics and Automation Letters, 2018, 3, 2624-2631.	5.1	0
39	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
40	A Variable Stiffness Robotic Probe for Soft Tissue Palpation. IEEE Robotics and Automation Letters, 2018, 3, 1168-1175.	5.1	30
41	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
42	Granular Jamming Based Controllable Organ Design for Abdominal Palpation. , 2018, 2018, 2154-2157.		12
43	Modelling the structure of object-independent human affordances of approaching to grasp for robotic hands. PLoS ONE, 2018, 13, e0208228.	2.5	2
44	Predicting the mean first passage time (MFPT) to reach any state for a passive dynamic walker with steady state variability. PLoS ONE, 2018, 13, e0207665.	2.5	1
45	Haptic Information Gain in Remote Soft Tissue Examination Using a Controllable Stiffness Robotic Probe. , 2018, , .		0
46	Toward a low hysteresis helical scale Jamming interface inspired by teleost fish scale morphology and arrangement. , 2018, , .		4
47	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
48	Can a Soft Robotic Probe Use Stiffness Control Like a Human Finger to Improve Efficacy of Haptic Perception?. IEEE Transactions on Haptics, 2017, 10, 183-195.	2.7	23
49	Trends in robot assisted endovascular catheterization technology: A review. , 2017, , .		2
50	A Geometry Deformation Model for Braided Continuum Manipulators. Frontiers in Robotics and AI, 2017, 4, .	3.2	43
51	The Role of Morphology of the Thumb in Anthropomorphic Grasping: A Review. Frontiers in Mechanical Engineering, 2017, 3, .	1.8	50
52	Palpation force modulation strategies to identify hard regions in soft tissue organs. PLoS ONE, 2017, 12, e0171706.	2.5	45
53	Mechanics of Continuum Manipulators, a Comparative Study of Five Methods with Experiments. Lecture Notes in Computer Science, 2017, , 686-702.	1.3	40
54	Wearable Haptic Based Pattern Feedback Sleeve System. Advances in Intelligent Systems and Computing, 2017, , 302-312.	0.6	1

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55	Morphological Computation of Haptic Perception of a Controllable Stiffness Probe. PLoS ONE, 2016, 11, e0156982.	2.5	22
56	A geometry deformation model for compound continuum manipulators with external loading. , 2016, , .		13
57	A soft three axis force sensor useful for robot grippers. , 2016, , .		12
58	The role of morphological computation of the goat hoof in slip reduction. , 2016, , .		11
59	MFPT calculation for random walks in inhomogeneous networks. Physica A: Statistical Mechanics and Its Applications, 2016, 462, 986-1002.	2.6	4
60	Autonomous robotic palpation of soft tissue using the modulation of applied force. , 2016, , .		6
61	Message from the organizing committee. , 2016, , .		0
62	A bio-inspired electro-active Velcro mechanism using Shape Memory Alloy for wearable and stiffness controllable layers. , 2016, , .		3
63	A biologically inspired multimodal whisker follicle. , 2016, , .		3
64	Stable Grip Control on Soft Objects With Time-Varying Stiffness. IEEE Transactions on Robotics, 2016, 32, 626-637.	10.3	8
65	Magnetic and Mechanical Modeling of a Soft Three-Axis Force Sensor. IEEE Sensors Journal, 2016, 16, 5298-5307.	4.7	31
66	The efficacy of interaction behavior and internal stiffness control for embodied information gain in haptic perception. , 2016, , .		7
67	Salient Feature of Haptic-Based Guidance of People in Low Visibility Environments Using Hard Reins. IEEE Transactions on Cybernetics, 2016, 46, 568-579.	9.5	18
68	Kinematic Analysis of the Human Thumb with Foldable Palm. Lecture Notes in Computer Science, 2016, , 226-238.	1.3	1
69	First Arrival Time for Natural Disasters Modelled as Biased Networks. Springer Natural Hazards, 2016, , 67-87.	0.3	0
70	Conclusions and Future Research Directions. Springer Natural Hazards, 2016, , 119-124.	0.3	0
71	Calculating MFPT for Processes Mapping into Random Walks in Inhomogeneous Networks. Springer Natural Hazards, 2016, , 89-118.	0.3	0
72	Background Guide to Random Walk Analysis. Springer Natural Hazards, 2016, , 11-28.	0.3	0

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73	Robust real time material classification algorithm using soft three axis tactile sensor: Evaluation of the algorithm. , 2015, , .		13
74	Identification of Haptic Based Guiding Using Hard Reins. PLoS ONE, 2015, 10, e0132020.	2.5	5
75	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
76	Novel method to form adaptive internal impedance profiles in walkers. , 2015, 2015, 7764-7.		1
77	Disposable soft 3 axis force sensor for biomedical applications. , 2015, 2015, 5521-4.		14
78	Behavior sequencing based on demonstrations: a case of a humanoid opening a door while walking. Advanced Robotics, 2015, 29, 315-329.	1.8	9
79	Stiffness Control of Soft Robotic Manipulator for Minimally Invasive Surgery (MIS) Using Scale Jamming. Lecture Notes in Computer Science, 2015, , 141-151.	1.3	31
80	Robotic Granular Jamming: A New Variable Stiffness Mechanism. Journal of the Robotics Society of Japan, 2014, 32, 333-338.	0.1	8
81	Full-Body Postural Control of a Humanoid Robot with Both Imitation Learning and Skill Innovation. International Journal of Humanoid Robotics, 2014, 11, 1450012.	1.1	13
82	Robotic Granular Jamming: Does the Membrane Matter?. Soft Robotics, 2014, 1, 192-201.	8.0	93
83	Internal impedance control helps information gain in embodied perception. , 2014, , .		15
84	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
85	Endoscopic add-on stiffness probe for real-time soft surface characterisation in MIS. , 2014, 2014, 6517-20.		15
86	Novel uniaxial force sensor based on visual information for minimally invasive surgery. , 2014, , .		30
87	Simplifying grasping complexity through generalization of kinaesthetically learned synergies. , 2014, , .		6
88	Bio-inspired tactile sensor sleeve for surgical soft manipulators. , 2014, , .		47
89	Humanâ€“robot skills transfer interfaces for a flexible surgical robot. Computer Methods and Programs in Biomedicine, 2014, 116, 81-96.	4.7	46
90	Efficient Break-Away Friction Ratio and Slip Prediction Based on Haptic Surface Exploration. IEEE Transactions on Robotics, 2014, 30, 203-219.	10.3	50

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91	Implementation of Tactile Sensing for Palpation in Robot-Assisted Minimally Invasive Surgery: A Review. IEEE Sensors Journal, 2014, 14, 2490-2501.	4.7	121
92	Behavioral Characteristics of Manual Palpation to Localize Hard Nodules in Soft Tissues. IEEE Transactions on Biomedical Engineering, 2014, 61, 1651-1659.	4.2	32
93	The granular jamming integrated actuator. , 2014, , .		3
94	Multi-fingered haptic palpation using pneumatic feedback actuators. Sensors and Actuators A: Physical, 2014, 218, 132-141.	4.1	42
95	Passive dynamics of high frequency bat wing flapping with an anisotropic membrane. , 2014, , .		1
96	Observational Learning: Basis, Experimental Results and Models, and Implications for Robotics. Cognitive Computation, 2013, 5, 340-354.	5.2	5
97	A two party haptic guidance controller via a hard rein. , 2013, , .		3
98	Prototyping the flexible solenoid-coil artificial muscle, for exoskeletal robots. , 2013, , .		10
99	Granular Jamming With Hydraulic Control. , 2013, , .		17
100	A humanoid robot standing up through learning from demonstration using a multimodal reward function. , 2013, , .		8
101	A Geographic Primitive-Based Bayesian Framework to Predict Cyclone-Induced Flooding*. Journal of Hydrometeorology, 2013, 14, 505-523.	1.9	8
102	Stable walking on variable visco-elastic terrains using meta-parameters for passive state migration. , 2013, , .		2
103	Skills transfer across dissimilar robots by learning context-dependent rewards. , 2013, , .		8
104	Haptics for Multi-fingered Palpation. , 2013, , .		10
105	Evaluating Manual Palpation Trajectory Patterns in Tele-manipulation for Soft Tissue Examination. , 2013, , .		6
106	An Optimal State Dependent Haptic Guidance Controller via a Hard Rein. , 2013, , .		2
107	Force-velocity modulation strategies for soft tissue examination. , 2013, , .		8
108	Evaluation of Fuzzy-Neuro Modifiers for Compensation of the Effects of Muscle Fatigue on EMG-Based Control to be Used in Upper-Limb Power-Assist Exoskeletons. Journal of Advanced Mechanical Design, Systems and Manufacturing, 2013, 7, 736-751.	0.7	14

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109	Granular jamming transitions for a robotic mechanism. AIP Conference Proceedings, 2013, , .	0.4	10
110	Adaptive grip control on an uncertain object. , 2012, , .		5
111	Design of a variable stiffness flexible manipulator with composite granular jamming and membrane coupling. , 2012, , .		115
112	Adaptive internal impedance control for stable walking on uncertain visco-elastic terrains. , 2012, , .		4
113	Locomotion with continuum limbs. , 2012, , .		41
114	A Variable Stiffness Joint by Granular Jamming. , 2012, , .		34
115	A computationally fast algorithm for local contact shape and pose classification using a tactile array sensor. , 2012, , .		39
116	A computationally efficient framework for stochastic prediction of flood propagation. , 2012, , .		1
117	Dominant sources of variability in passive walking. , 2012, , .		14
118	A novel approach to determine the inverse kinematics of a human upper limb model with 9 degrees of freedom. , 2012, , .		3
119	Gait pattern analysis of an Asian elephant. , 2012, , .		3
120	Intelligent Sensing in Dynamic Environments Using Markov Decision Process. Sensors, 2011, 11, 1229-1242.	3.8	11
121	Portable acoustic device for detection of coconut palms infested by Rynchophorus ferrugineus (Coleoptera: Curculionidae). Crop Protection, 2010, 29, 25-29.	2.1	40
122	Stable bipedal ramp climbing with torso. , 2010, , .		1
123	Primitives for Motor Adaptation Reflect Correlated Neural Tuning to Position and Velocity. Neuron, 2009, 64, 575-589.	8.1	97
124	Analysis on four legged multipurpose rope climbing robot. , 2009, , .		3
125	Dynamic power management of an embedded sensor network based on actor-critic reinforcement based learning. , 2007, , .		2
126	Orchestration of Advanced Motor Skills in a Group of Humans through an Elitist Visual Feedback Mechanism. , 2007, , .		1

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127	High Performance Temperature Controller For Infant Incubators. , 2006, , .		2
128	Evolving a multiobjective obstacle avoidance skill of a seven-link manipulator subject to constraints. International Journal of Systems Science, 2004, 35, 167-178.	5.5	4
129	Saccade Adaptation in Response to Altered Arm Dynamics. Journal of Neurophysiology, 2003, 90, 4016-4021.	1.8	26
130	Evolutionary Dynamics Identification of Multi-Link Manipulators Using Runge-Kutta-Gill RBF Networks. Studies in Fuzziness and Soft Computing, 2003, , 208-222.	0.8	0
131	A Real-Time State Predictor in Motor Control: Study of Saccadic Eye Movements during Unseen Reaching Movements. Journal of Neuroscience, 2002, 22, 7721-7729.	3.6	143
132	Enhancing the Autonomy of Teleoperated Redundant Manipulators Through Fusion of Intelligent Control Modules. Journal of Robotics and Mechatronics, 2002, 14, 278-289.	1.0	3
133	Title is missing!. Journal of Intelligent and Robotic Systems: Theory and Applications, 2001, 32, 255-277.	3.4	8
134	Fuzzy self-adaptive radial basis function neural network-based control of a seven-link redundant industrial manipulator. Advanced Robotics, 2001, 15, 17-43.	1.8	11
135	Identification of System in a Coal Fired Power Plant to Achieve Desired Compositions of Fly-Ash. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1997, 30, 1211-1216.	0.4	0
136	Controlling multi-link manipulators by fuzzy selection of dynamic models. , 0, , .		2
137	Robotics, Education, and Sustainable Development. , 0, , .		10
138	A Human-Animal-Robot Cooperative System for Anti-Personal Mine Detection. , 0, , .		5
139	Reduced Order vs. Discretized Lumped System Models with Absolute and Relative States for Continuum Manipulators. , 0, , .		14