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	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
2	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
3	Implementation of Tactile Sensing for Palpation in Robot-Assisted Minimally Invasive Surgery: A Review. IEEE Sensors Journal, 2014, 14, 2490-2501.	4.7	121
4	Design of a variable stiffness flexible manipulator with composite granular jamming and membrane coupling. , 2012, , .		115
5	Primitives for Motor Adaptation Reflect Correlated Neural Tuning to Position and Velocity. Neuron, 2009, 64, 575-589.	8.1	97
6	Robotic Granular Jamming: Does the Membrane Matter?. Soft Robotics, 2014, 1, 192-201.	8.0	93
7	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
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	Efficient Break-Away Friction Ratio and Slip Prediction Based on Haptic Surface Exploration. IEEE Transactions on Robotics, 2014, 30, 203-219.	10.3	50
10	The Role of Morphology of the Thumb in Anthropomorphic Grasping: A Review. Frontiers in Mechanical Engineering, 2017, 3, .	1.8	50
11	Bio-inspired tactile sensor sleeve for surgical soft manipulators. , 2014, , .		47
12	Humanâ€“robot skills transfer interfaces for a flexible surgical robot. Computer Methods and Programs in Biomedicine, 2014, 116, 81-96.	4.7	46
13	Palpation force modulation strategies to identify hard regions in soft tissue organs. PLoS ONE, 2017, 12, e0171706.	2.5	45
14	A Geometry Deformation Model for Braided Continuum Manipulators. Frontiers in Robotics and AI, 2017, 4, .	3.2	43
15	Multi-fingered haptic palpation using pneumatic feedback actuators. Sensors and Actuators A: Physical, 2014, 218, 132-141.	4.1	42
16	Locomotion with continuum limbs. , 2012, , .		41
17	Portable acoustic device for detection of coconut palms infested by Rynchophorus ferrugineus (Coleoptera: Curculionidae). Crop Protection, 2010, 29, 25-29.	2.1	40
18	Mechanics of Continuum Manipulators, a Comparative Study of Five Methods with Experiments. Lecture Notes in Computer Science, 2017, , 686-702.	1.3	40

#	Article	IF	Citations
19	A computationally fast algorithm for local contact shape and pose classification using a tactile array sensor. , 2012, , .		39
20	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
21	A Variable Stiffness Joint by Granular Jamming. , 2012, , .		34
22	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
23	Behavioral Characteristics of Manual Palpation to Localize Hard Nodules in Soft Tissues. IEEE Transactions on Biomedical Engineering, 2014, 61, 1651-1659.	4.2	32
24	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
25	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
26	Magnetic and Mechanical Modeling of a Soft Three-Axis Force Sensor. IEEE Sensors Journal, 2016, 16, 5298-5307.	4.7	31
27	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
28	Novel uniaxial force sensor based on visual information for minimally invasive surgery. , 2014, , .		30
29	A Variable Stiffness Robotic Probe for Soft Tissue Palpation. IEEE Robotics and Automation Letters, 2018, 3, 1168-1175.	5.1	30
30	Saccade Adaptation in Response to Altered Arm Dynamics. Journal of Neurophysiology, 2003, 90, 4016-4021.	1.8	26
31	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
32	Morphological Computation of Haptic Perception of a Controllable Stiffness Probe. PLoS ONE, 2016, 11, e0156982.	2.5	22
33	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
34	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
35	Granular Jamming With Hydraulic Control. , 2013, , .		17
36	A Soft Pressure Sensor Skin for Hand and Wrist Orthoses. IEEE Robotics and Automation Letters, 2020, 5, 2192-2199.	5.1	17

#	Article	IF	Citations
37	Action Augmentation of Tactile Perception for Soft-Body Palpation. Soft Robotics, 2022, 9, 280-292.	8.0	17
38	Internal impedance control helps information gain in embodied perception. , 2014, , .		15
39	Endoscopic add-on stiffness probe for real-time soft surface characterisation in MIS. , 2014, 2014, 6517-20.		15
40	Facial Expression Rendering in Medical Training Simulators: Current Status and Future Directions. IEEE Access, 2020, 8, 215874-215891.	4.2	15
41	Dominant sources of variability in passive walking. , 2012, , .		14
42	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
43	Disposable soft 3 axis force sensor for biomedical applications. , 2015, 2015, 5521-4.		14
44	Reduced Order vs. Discretized Lumped System Models with Absolute and Relative States for Continuum Manipulators. , 0, , .		14
45	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
46	Robust real time material classification algorithm using soft three axis tactile sensor: Evaluation of the algorithm. , 2015, , .		13
47	A geometry deformation model for compound continuum manipulators with external loading. , 2016, , .		13
48	A soft three axis force sensor useful for robot grippers. , 2016, , .		12
49	Granular Jamming Based Controllable Organ Design for Abdominal Palpation. , 2018, 2018, 2154-2157.		12
50	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
51	Intelligent Sensing in Dynamic Environments Using Markov Decision Process. Sensors, 2011, 11, 1229-1242.	3.8	11
52	The role of morphological computation of the goat hoof in slip reduction. , 2016, , .		11
53	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
54	A Stiffness Controllable Multimodal Whisker Sensor Follicle for Texture Comparison. IEEE Sensors Journal, 2020, 20, 2320-2328.	4.7	11

#	Article	IF	Citations
55	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
56	Robotics, Education, and Sustainable Development. , 0, , .		10
57	Prototyping the flexible solenoid-coil artificial muscle, for exoskeletal robots. , 2013, , .		10
58	Haptics for Multi-fingered Palpation. , 2013, , .		10
59	Granular jamming transitions for a robotic mechanism. AIP Conference Proceedings, 2013, , .	0.4	10
60	Behavior sequencing based on demonstrations: a case of a humanoid opening a door while walking. Advanced Robotics, 2015, 29, 315-329.	1.8	9
61	Title is missing!. Journal of Intelligent and Robotic Systems: Theory and Applications, 2001, 32, 255-277.	3.4	8
62	A humanoid robot standing up through learning from demonstration using a multimodal reward function. , 2013, , .		8
63	A Geographic Primitive-Based Bayesian Framework to Predict Cyclone-Induced Flooding*. Journal of Hydrometeorology, 2013, 14, 505-523.	1.9	8
64	Skills transfer across dissimilar robots by learning context-dependent rewards. , 2013, , .		8
65	Force-velocity modulation strategies for soft tissue examination. , 2013, , .		8
66	Robotic Granular Jamming: A New Variable Stiffness Mechanism. Journal of the Robotics Society of Japan, 2014, 32, 333-338.	0.1	8
67	Stable Grip Control on Soft Objects With Time-Varying Stiffness. IEEE Transactions on Robotics, 2016, 32, 626-637.	10.3	8
68	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
69	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
70	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
71	3D-Printed Soft Sensors for Adaptive Sensing with Online and Offline Tunable Stiffness. Soft Robotics, 2022, 9, 1062-1073.	8.0	8
72	The efficacy of interaction behavior and internal stiffness control for embodied information gain in haptic perception. , 2016, , .		7

#	Article	IF	Citations
73	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
74	Precise In-Hand Manipulation of Soft Objects using Soft Fingertips with Tactile Sensing and Active Deformation. , 2020, , .		7
75	MorphFace: A Hybrid Morphable Face for a Robopatient. IEEE Robotics and Automation Letters, 2021, 6, 643-650.	5.1	7
76	Evaluating Manual Palpation Trajectory Patterns in Tele-manipulation for Soft Tissue Examination. , 2013, , .		6
77	Simplifying grasping complexity through generalization of kinaesthetically learned synergies. , 2014, , .		6
78	Autonomous robotic palpation of soft tissue using the modulation of applied force. , 2016, , .		6
79	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
80	A Human-Animal-Robot Cooperative System for Anti-Personal Mine Detection. , 0, , .		5
81	Adaptive grip control on an uncertain object. , 2012, , .		5
82	Observational Learning: Basis, Experimental Results and Models, and Implications for Robotics. Cognitive Computation, 2013, 5, 340-354.	5.2	5
83	Identification of Haptic Based Guiding Using Hard Reins. PLoS ONE, 2015, 10, e0132020.	2.5	5
84	A Haptic Mouse Design with Stiffening Muscle Layer for Simulating Guarding in Abdominal Palpation Training. , 2021, , .		5
85	Adapting the visuo-haptic perception through muscle coactivation. Scientific Reports, 2021, 11, 21986.	3.3	5
86	A Method to use Nonlinear Dynamics in a Whisker Sensor for Terrain Identification by Mobile Robots. , 2021, , .		5
87	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
88	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
89	Adaptive internal impedance control for stable walking on uncertain visco-elastic terrains. , 2012, , .		4
90	MFPT calculation for random walks in inhomogeneous networks. Physica A: Statistical Mechanics and Its Applications, 2016, 462, 986-1002.	2.6	4

#	Article	IF	Citations
91	Toward a low hysteresis helical scale Jamming interface inspired by teleost fish scale morphology and arrangement. , 2018, , .		4
92	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
93	A State-Dependent Damping Method to Reduce Collision Force and Its Variability. IEEE Robotics and Automation Letters, 2021, 6, 3025-3032.	5.1	4
94	Origami Inspired Design for Capsule Endoscope to Retrograde Using Intestinal Peristalsis. IEEE Robotics and Automation Letters, 2022, 7, 5429-5435.	5.1	4
95	Analysis on four legged multipurpose rope climbing robot. , 2009, , .		3
96	A novel approach to determine the inverse kinematics of a human upper limb model with 9 degrees of freedom. , 2012, , .		3
97	Gait pattern analysis of an Asian elephant. , 2012, , .		3
98	A two party haptic guidance controller via a hard rein. , 2013, , .		3
99	The granular jamming integrated actuator. , 2014, , .		3
100	A bio-inspired electro-active Velcro mechanism using Shape Memory Alloy for wearable and stiffness controllable layers. , 2016, , .		3
101	A biologically inspired multimodal whisker follicle. , 2016, , .		3
102	Sensorized Phantom For Characterizing Large Area Deformation of Soft Bodies for Medical Applications. , 2020, , .		3
103	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
104	Controlling multi-link manipulators by fuzzy selection of dynamic models. , 0, , .		2
105	High Performance Temperature Controller For Infant Incubators. , 2006, , .		2
106	Dynamic power management of an embedded sensor network based on actor-critic reinforcement based learning. , 2007, , .		2
107	Stable walking on variable visco-elastic terrains using meta-parameters for passive state migration. , 2013, , .		2
108	An Optimal State Dependent Haptic Guidance Controller via a Hard Rein. , 2013, , .		2

#	Article	IF	Citations
109	Trends in robot assisted endovascular catheterization technology: A review. , 2017, , .		2
110	Modelling the structure of object-independent human affordances of approaching to grasp for robotic hands. PLoS ONE, 2018, 13, e0208228.	2.5	2
111	Human-Robot Medical Interaction. , 2020, , .		2
112	Simulating dynamic facial expressions of pain from visuo-haptic interactions with a robotic patient. Scientific Reports, 2022, 12, 4200.	3.3	2
113	Orchestration of Advanced Motor Skills in a Group of Humans through an Elitist Visual Feedback Mechanism. , 2007, , .		1
114	Stable bipedal ramp climbing with torso. , 2010, , .		1
115	A computationally efficient framework for stochastic prediction of flood propagation. , 2012, , .		1
116	Passive dynamics of high frequency bat wing flapping with an anisotropic membrane. , 2014, , .		1
117	Novel method to form adaptive internal impedance profiles in walkers. , 2015, 2015, 7764-7.		1
118	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
119	A Method to Guide Local Physical Adaptations in a Robot Based on Phase Portraits. IEEE Access, 2019, 7, 78830-78841.	4.2	1
120	Editorial: Current Advances in Soft Robotics: Best Papers From RoboSoft 2018. Frontiers in Robotics and AI, 2020, 7, 56.	3.2	1
121	Kinematic Analysis of the Human Thumb with Foldable Palm. Lecture Notes in Computer Science, 2016, , 226-238.	1.3	1
122	Wearable Haptic Based Pattern Feedback Sleeve System. Advances in Intelligent Systems and Computing, 2017, , 302-312.	0.6	1
123	Autonomy of humans and robots. , 2019, , 131-140.		1
124	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
125	Message from the organizing committee. , 2016, , .		0
126	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

#	Article	IF	Citations
127	Haptic Information Gain in Remote Soft Tissue Examination Using a Controllable Stiffness Robotic Probe. , 2018, , .		0
128	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
129	First Arrival Time for Natural Disasters Modelled as Biased Networks. Springer Natural Hazards, 2016, , 67-87.	0.3	0
130	Conclusions and Future Research Directions. Springer Natural Hazards, 2016, , 119-124.	0.3	0
131	Calculating MFPT for Processes Mapping into Random Walks in Inhomogeneous Networks. Springer Natural Hazards, 2016, , 89-118.	0.3	0
132	Background Guide to Random Walk Analysis. Springer Natural Hazards, 2016, , 11-28.	0.3	0
133	Title is missing!. , 2020, 15, e0237379.		0
134	Title is missing!. , 2020, 15, e0237379.		0
135	Title is missing!. , 2020, 15, e0237379.		0
136	Title is missing!. , 2020, 15, e0237379.		0
137	Title is missing!. , 2020, 15, e0237379.		0
138	Title is missing!. , 2020, 15, e0237379.		0
139	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