Thrishantha Nanayakkara

Reader

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Education

Sept 1998 - August 2001 **PhD in Systems Control and Robotics**, *Department of Mechanical Engineering*, Saga University, Saga, Japan.

Sept 1996 - August 1998 **MSc in Electrical Engineering**, *Department of Electrical Engineering*, Saga University, Saga, Japan.

April 1992 - August 1996 **BSc in Electrical Engineering, 1st class honors**, *Department of Electrical Engineering*, University of Moratuwa, Moratuwa, Sri Lanka.

Work Experience

From January 2017 **Reader**, *Dyson School of Design Engineering*, Imperial College, London, United Kingdom.

September 2009 - December 2016 **Senior Lecturer**, *Department of Informatics*, King's College London, London, United Kingdom.

July 2007 - January 2008 **Postdoctoral research fellow**, *School of Engineering and Applied Sciences*, Harvard University, Cambridge, MA,United States.

February 2008 - June 2009 **Research Affiliate**, *Computer Science and Artificial Intelligence Lab*, MIT, Cambridge, MA, United States.

September 2008 - June 2009 **Radcliffe Fellow**, *Radcliffe Institute for Advanced Studies*, Harvard University, Cambridge, MA, United States.

August 2003 - June 2008 **Senior lecturer**, *Department of Mechanical Engineering*, University of Moratuwa, Moratuwa, Sri Lanka.

November 2001 - July 2003 **Postdoctoral Fellow**, *Department of Biomedical Engineering, School of Medicine*, Johns Hopkins University, Baltimore, MD, United States.

Awards and honors

2018 **Chartered Engineer**, IET, UK.

2018 **Excellence in Teaching Innovation**, *"Gender and Culture in Robotics Education"*, Imperial College London, UK.

2016 **IEEE senior member**, IEEE, USA.

2016 **Finalist for the most innovative teacher award**, King's College London, UK.

2015 **Ingenious award**, *Royal Academy of Engineers*, UK.

2015 **Radcliffe Exploratory Seimanr leader**, *Radcliffe Institute*, Harvard University, USA.

2012 **Best paper award**, *co-author of the paper titled "Passive Dynamics of High Frequency Bat Wing Flapping with an Anisotropic Membrane", IEEE International Conference on Information and Automation for Sustainability*, ICIAfS - 2014, September 16-19, Colombo, Sri Lanka.

2013 **Finalist, IEEE Franklin Taylor Best Paper award** , *co-author of the paper titled "An Optimal State Dependent Haptic Guidance Controller Via a Hard Rein", IEEE International Conference on Systems man and cybernetics*, SMC-2013, October, Manchester, UK.

2012 **Best paper award**, *co-author of the paper titled "A Computationally Efficient Framework for Stochastic Prediction of Flood Propagation", IEEE International Conference on Information and Automation for Sustainability*, ICIAfS - 2012, September 27-29, Beijing, China.

2012 **Finalist, 2012 Royal Academy of Engineering ERA Foundation Entrepreneurs Award**, Royal Academy of Engineering, London, UK.

2008 **Radcliffe Fellowship**, Harvard University, Cambridge, USA.

description This fellowship was awarded by nomination by faculty members of the Harvard University based on the individual's academic merit and potential to serve pressing needs of the society

Research grants

Title Final user centred design iteration of a portable red palm weevil detection sensor

Feb, 2018- Feb, 2019 **EPSRC Late Stage Impact Acceleration Grant**, *EP/R511547/1*, (Total: £36k), UK.

Title MOTION - Morphological Computation of Perception and Action

July, 2016- June, 2019 **EPSRC standard grant**, *EP/N03211X/1*, PI and coordinator of the consortium consisting of Cambridge University, Imperial College London, and University of Surrey, (Total: £1.2 million, ICL amount: £400k), UK.

Title Four by Three

December, 2014- November, 2017 **European Union H2020 grant**, *637095*, Co-Investigator, (KCL amount: £500k), UK.

January, 2012-Dec, 2015 **European Union FP7 Call-7 grant**, *Award ref: 287728*, Co-Investigator, technical manager of the consortium, (KCL amount (coordinator): €1.3m, total consortium grant: €7.38m), UK.

Title STIFF-FLOP - STIFFness controllable Flexible and Learn-able Manipulator for surgical OPerations

March, 2011-Sept, 2012 **EPSRC first grant**, *EP/I028773/1*, Principal Investigator, (amount: £97k), UK.

Title Impedance control on uncertain objects

April, 2011-Sept, 2014 **EPSRC standard grant**, *EP/I028765/1*, Co-Investigator in collaboration with Sheffield Hallam University, (amount: £200k), UK.

Title REINS: Human robot interaction through reins

March, 2011-Dec, 2014 **European Union FP7 Call-6 grant**, *270436*, Co-Investigator, (amount: £535k), UK.

Title TOMSY-Topological Motion Synthesis for Dexterous Manipulation

March, 2011-Dec, 2014 **European Union FP7 Call-6 grant**, *270138*, Principal Investigator, (amount: €480k), UK.

Title DARWIN-Dextrous Assembler Robot Working with embodied INtelligence

Invited professional appointments

2018 onwards **Regional chair**, *Robotics: Science and Systems (RSS)*, IEEE, USA.

2016 onwards **Associate editor**, *IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, USA.

2016 onwards **Associate editor**, *IEEE International Conference on Intelligent Robotics and Systems (IROS)*, IEEE, USA.

2018 onwards **Associate editor/publications chair**, *IEEE International Conference on Soft Robotics (RoboSoft)*, IEEE, USA.

2015 onwards **Associate editor**, *Frontiers Soft Robotics Specialty*, editor in chief: Prof. Cecilia Laschi, Frontiers, Switzerland.

2016 onwards **Associate editor**, *Journal of Robotics and Mechatronics*, editor in chief: Prof. Yoshihiro Takita (National Defence Academy of Japan), JRM, Japan.

2005 onwards **Associate editor**, *Journal of Control and Intelligent Systems*, editor in chief: Prof. Clarence de Silva, ACTA Press, Canada.

2010 onwards **Program Chair**, *IEEE International Conference on Information and Automation for Sustainability*, Sri Lanka, Australia, China.

2005 **Founding General Chair**, *International Conference on Information and Automation for Sustainability*, with IEEE technical co-sponsorship, Sri Lanka, Australia, China.

2012 **EPSRC college of peer reviewers**, From Sept. 2012, UK.

2012 **Program committee**, *2012 IEEE/SICE International Conference on System Integration (SII2012)*, December 16-18, 2012, Fukuoka, Japan.

International News and Feature Articles

October issue, 2012 **IEEE Spectrum magazine**, *Robotics news on Inflatable Limb Robot Runs Around on Wiggly Legs, USA.*

September issue, 2008 **Harvard Magazine**, *On animal-robot interaction studies, USA*.

Issue 2653, 26th April 2008 **New Scientist Magazine**, *On legged robots and animal odor localization, UK*.

05/01/2017 **Canada Global TV**, *Interviewed by Canada Global TV – "European Parliament votes on robotic rights", Canada*.

24/06/2017 **BBC Radio-4**, *Panel member of a 30 minute programme titled "Bottom Line" together with a partner in McKenzie Consultancy and CEO of Yotel chain about robotics in the future society, UK*.

05/07/2016 **Financial Times**, *Interviewed by Financial Times – "My colleague, the robot", UK*.

Keynotes/invited talks

24/04/2018 **IEEE RoboSoft 2018**, *Plenary workshop talk at IEEE RoboSoft 2018 on "Haptic information gain in the impedance domain"*, Levorno, Italy.

23/05/2018 **IEEE ICRA2018**, *Plenary workshop talk at IEEE ICRA2018 on "Brain is the last resort"*, Brisbane, Australia.

27/05/2018 **IEEE ICRA2018**, *Invited workshop talk at IEEE ICRA2018 on "Active search for haptic information in the impedance domain"*, Brisbane, Australia.

02/05/2018 **University of Leeds**, *Keynote on "Surviving in an uncertain world with slow communication pathways"*, Leeds, UK.

04/10/2018 **RCGP-2018**, *Workshop keynote speech at Royal College of General Practioners annual conference on "Soft Robotic Patients for Medical Education"*, Glasgow, UK.

17/08/2018 **Xuzhuo Central Hospital**, *Keynote speech at Xuzhou Central Hospital on "Soft Robotics for Rehabilitation"*, Xuzhou, China.

23/08/2018 **Jilin University**, *Keynote speech at International Workshop on Bioinspiration on "Morphological computation - The role of the physical circuits in the body in the computation of perception and action"*, Jilin, China.

11/10/2017 **IEEE PIMRC**, *Plenary keynote at IEEE PIMRC on "Survival in uncertain environments with slow communication pathways – evidence from morphological computation"*, Montreal, Canada.

12/12/2017 **IMechE Christmas event**, *Keynote at IMechE Christmas event – "Tinkering" on "If robots were to survive like living beings in uncertain environments"*, London, UK.

18/12/2017 **LIPI workshop**, *Keynote at Indonesia Institute of Science and technology on "Soft robotics for sustainable rainforest communities"*, Bandung, Indonesia.

10/07/2017 **2nd UK manipulation workshop**, *Invited talk on "Surviving with slow communication pathways"*, London, UK.

23/03/2017 **ERU-2017**, *Co-organizer and speaker in the Workshop on "Haptics for Healthcare"*, Edinburgh, UK.

05/07/2017 **University of Cambridge**, *Invited talk at University of Cambridge on "Soft robotics and morphological computation"*, Cambridge, UK.

Publications

[1] Cotugno G, Konstantinova J, Althoefer K, Nanayakkara T (2018) Modelling the structure of object-independent human affordances of approaching to grasp for robotic hands. PLoS ONE 13(12): e0208228. https://doi.org/10.1371/journal.pone.0208228.

[2] A. Shiva, S.M.H. Sadati, Y. Noh, J. Fraś, A. Ataka, H. Wurdemann, H. Hauser, I. Walker, T. Nanayakkara2, K. Althoefer, “Elasticity vs. Hyperelasticity Considerations in Quasi-Static Modelling of a Soft Finger-like Robotic Appendage for Real-time Position & Force Estimation”, accepted in Soft Robotics, 2018.

[3] Ranasinghe, A., Dasgupta, P., Nagar, A., and Nanayakkara, T. (2018). Human Behavioral Metrics of a Predictive Model Emerging During Robot Assisted Following Without Visual Feedback. IEEE Robotics and Automation Letters, 3(3), 2624-2631, 2018.

[4] Seyedmohammadhadi Sadati, Luis Sullivan, Ian Walker, Kaspar Althoefer, Thrishantha Nanayakkara (2018). 3D-Printable Thermoactive Helical Interface with Decentralized Morphological Stiffness Control for Continuum Manipulators, in press, IEEE Robotics and Automation Letters (RA-L)/ICRA2018, 2018.

[5] Nicolas Herzig, Perla Maiolino, Fumiya Iida, Thrishantha Nanayakkara (2018). A Variable Stiffness Robotic Probe for Soft Tissue Palpation, IEEE Robotics and Automation Letters (RA-L), pp. 1168 – 1175, vol. 3, issue 2, 2018.

[6] Isuri Wijesundera,Malka Halgamuge,Ampalavanapillai Nirmalathas,Thrishantha Nanayakkara (2018). Predicting the Mean First Passage Time (MFPT) to reach any state for a passive dynamic walker with steady-state variability, accepted in Plos One, PONE-D-18-14724R2, 2018.

[7] Sadati, S.H., Naghibi, S.E., Walker, I.D., Althoefer, K. and Nanayakkara, T., 2018. Control Space Reduction and Real-Time Accurate Modeling of Continuum Manipulators Using Ritz and Ritz-Galerkin Methods. IEEE Robotics and Automation Letters, 3(1), pp.328 - 335, 2018.

[8] Sadati, S.M., Naghibi, S.E., Shiva, A., Noh, Y., Gupta, A., Walker, I.D., Althoefer, K. and Nanayakkara, T., 2017. A geometry deformation model for braided continuum manipulators. Frontiers in Robotics and AI, 4, p.22, 2017

[9] Konstantinova, Jelizaveta, Giuseppe Cotugno, Prokar Dasgupta, Kaspar Althoefer, and Thrishantha Nanayakkara (2017). Palpation force modulation strategies to identify hard regions in soft tissue organs., PLoS One 12, no. 2 (2017): e0171706.

[10] Nanayakkara, V.K., Cotugno, G., Vitzilaios, N., Venetsanos, D., Nanayakkara, T. and Sahinkaya, M.N., 2017. The role of morphology of the thumb in anthropomorphic grasping: a review. Frontiers in Mechanical Engineering, 3, p.5., 2017.

[11] Sadati, S.H., Naghibi, S.E., Shiva, A., Walker, I.D., Althoefer, K. and Nanayakkara, T., 2017, July. Mechanics of Continuum Manipulators, A Comparative Study of Five Methods with Experiments. In Conference Towards Autonomous Robotic Systems (pp. 686-702). Springer, Cham., 2017.

[12] Nantachai Sornkarn and Thrishantha Nanayakkara, "Can a soft robotic probe use stiffness control like a human finger to improve efficacy of haptic perception?", in press, IEEE Transactions on Haptics, 2016.

[13] Thrishantha Nanayakkara, Allen Jiang, Maria. R. Armas Fernandez, Hongbin Liu, Kaspar Althoefer, Joao Bimbo, "Stable Grip Control on Soft Objects With Time Varying Stiffness", IEEE Transactions on Robotics, vol. 32, no. 3, pp. 626-637, 2016.

[14] Chathuranga, Damith Suresh, Zhongkui Wang, Yohan Noh, Thrishantha Nanayakkara, and Shinichi Hirai. "Magnetic and Mechanical Modeling of a Soft Three-Axis Force Sensor." IEEE Sensors Journal 16, no. 13 (2016): 5298-5307.

[15] Nantachai Sornkarn, Prokar Dasguptha, Thrishantha Nanayakkara, "Morphological Computation of Haptic Perception of a Controllable Stiffness Probe", PLOS ONE, vol. 11, no. 6, pages e0156982, 2016.

[16] Giuseppe Cotugno, Kaspar Althoefer, Thrishantha Nanayakkara, “The Role of the Thumb: Study of Finger Motion in Grasping and Reachability Space in Human and Robotic Hands”, IEEE Transactions on SMC – Systems, pp.1061 – 1070, vol. 47, no. 7, 2017.

[17] Isuri Wijesundera, Malka Halgamuge, Ampalavanapillai Nirmalathas, Thrishantha Nanayakkara, "MFPT Calculation for Random Walks in Inhomogeneous Networks", Physica A, 462, pp.986 - 1002, 2016.

[18] Ranasinghe, Anuradha, Prokar Dasgupta, Kaspar Althoefer, and Thrishantha Nanayakkara, "Identification of Haptic Based Guiding Using Hard Reins", PloS one 10, no. 7, pp. 1 - 22, 2015 (DOI:10.1371/journal.pone.0132020).

[19] Anuradha Ranasinghe, Jacques Pendars, Prokar Dasguptha, Kaspar Althoefer, Thrishantha Nanayakkara, "Salient Features of Haptic Based Guidance of People with Limited Vision Using Hard Reins", IEEE Transactions on SMC - Cybernetics, pp. 568 - 579, 2015.

[20] González-Fierro, Miguel, Daniel Hernandez-Garcia, Thrishantha Nanayakkara, and Carlos Balaguer. "Behavior sequencing based on demonstrations: a case of a humanoid opening a door while walking." Advanced Robotics vol. 29, no. 5, pp. 315-329, 2015 (DOI: 10.1080/01691864.2014.992955)

[21] Li, Min, Jelizaveta Konstantinova, Emanuele L. Secco, Allen Jiang, Hongbin Liu, Thrishantha Nanayakkara, Lakmal D. Seneviratne, Prokar Dasgupta, Kaspar Althoefer, and Helge A. Wurdemann. "Using visual cues to enhance haptic feedback for palpation on virtual model of soft tissue." Medical & Biological Engineering & Computing pp. 1-10, 2015 (DOI: 10.1007/s11517-015-1309-4).

[22] Miguel Gonzalez-Fierro, Daniel Hernandez Garcia, Thrishantha Nanayakkara, Carlos Balaguer, "Behavior Sequencing Based on Demonstrations - a Case of a Humanoid Opening a Door While Walking", in press, Journal of Advanced Robotics, pp. 315-329, 2015.

[23] Li, Min, Shan Luo, Thrishantha Nanayakkara, Lakmal D. Seneviratne, Prokar Dasgupta, and Kaspar Althoefer. "Multi-fingered haptic palpation using pneumatic feedback actuators", Sensors and Actuators A: Physical, no. 218, pp. 132-141, 2014 (DOI:10.1016/j.sna.2014.08.003).

[24] J. Konstantinova, M. Li, M. Gautam, P. Dasgupta, K. Althoefer and T. Nanayakkara. "Behavioral Characteristics of Manual Palpation to Localize Hard Nodules in Soft Tissues", IEEE Transactions on Biomedical Engineering, vol. 61, no. 6, pp. 1651-1659, 2014 (DOI: 10.1109/TBME.2013.2296877).

[25] J. Konstantinova, A. Jiang, P. Dasgupta, K. Althoefer and T. Nanayakkara. "Implementation of Tactile Sensing for Robot-Assisted Minimally Invasive Surgery", IEEE Sensors, vol. 14, no. 8, pp. 2490 - 2501, 2014 (DOI: 10.1109/JSEN.2014.2325794).

[26] Song, Xiaojing, Hongbin Liu, Kaspar Althoefer, Thrishantha Nanayakkara, and Lakmal D. Seneviratne. "Efficient Break-Away Friction Ratio and Slip Prediction Based on Haptic Surface Exploration", IEEE Transactions on Robotics, vol. 30, no. 1, pp. 203 - 219, 2014 (DOI: 10.1109/TRO.2013.2279630).

[27] Jiang, Allen, Tommaso Ranzani, Giada Gerboni, Laura Lekstutyte, Kaspar Althoefer, Prokar Dasgupta, and Thrishantha Nanayakkara. "Robotic Granular Jamming: Does the Membrane Matter?", Soft Robotics, vol.1, no.3, pp. 192 - 201, 2014 (doi:10.1089/soro.2014.0002).

[28] Li, Min, Shan Luo, Thrishantha Nanayakkara, Lakmal D. Seneviratne, Prokar Dasgupta, and Kaspar Althoefer. "Multi-Fingered Haptic Palpation using Pneumatic Feedback Actuators", Sensors and Actuators A: Physical, vol. 218, no. 1, pp. 132 - 141, 2014 (DOI:10.1016/j.sna.2014.08.003).

[29] Gonzalez-Fierro, Miguel, Carlos Balaguer, Nicola Swann, and Thrishantha Nanayakkara. "Full-Body Postural Control of a Humanoid Robot with Both Imitation Learning and Skill Innovation", International Journal of Humanoid Robotics, vol. 11, no. 2, (34 pages) 2014 (DOI: 10.1142/S0219843614500121).

[30] Cianchetti, Matteo, Tommaso Ranzani, Giada Gerboni, Thrishantha Nanayakkara, Kaspar Althoefer, Prokar Dasgupta, and Arianna Menciassi. "Soft robotics technologies to address shortcomings in today's minimally invasive surgery: the stiff-flop approach", Soft Robotics, vol 1, no. 2, pp. 122-131, 2014 (DOI: 10.1089/soro.2014.0001).

[31] Calinon, Sylvain, Danilo Bruno, Milad S. Malekzadeh, Thrishantha Nanayakkara, and Darwin G. Caldwell. "Human - robot skills transfer interfaces for a flexible surgical robot", Computer methods and programs in biomedicine, vol. 116, no. 2, pp. 81 - 96, 2014 (DOI: 10.1016/j.cmpb.2013.12.015).

[32] Lalitharatne, Thilina Dulantha, Kenbu Teramoto, Yoshiaki Hayashi, Thrishantha Nanayakkara, and Kazuo Kiguchi. "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, vol. 7, no. 4, pp. 736 – 751, 2013 (DOI: 10.1299/jamdsm.7.736).

[33] A. Jiang, P. Dasgupta, K. Althoefer, and T. Nanayakkara, "Robotic Granular Jamming: A New Variable Stiffness Mechanism", Journal of Robotics Society of Japan, Vol. 32 No. 4, pp.333 - 338, 2014.

[34] Thrishantha Nanayakkara, Malka N. Halgamuge, Prasanna Sridhar, and Asad M. Madni, "Intelligent Sensing in Dynamic Environments Using Markov Decision Process", Sensors vol. 11, no. 1, pp. 1229-1242, 2011.

[35] Gary Chin-Wei Sing, Wilsan M Joiner, Thrishantha Nanayakkara, Jordan B Brayanov, and Maurice Smith, "Primitives for Motor Adaptation reflect Correlated neural Turning to Position and velocity", in press, Neuron, 2009.

[36] K.A.P. Siriwardena, L.C.P. Fernando, N. Nanayakkara, K. F. G. Perera, A.D.N.T. Kumara and T. Nanayakkara, "Portable Acoustic Device for Detection of Coconut Palms infested by Rynchophorus ferrugineus (Coleoptera: Curculionidae)", in press, Jouranl of Crop Protection, 2009.

[37] Gregory Ariff, Opher Donchin, Thrishantha Nanayakkara, and Reza Shadmehr, "A Real-Time State Predictor in Motor Control: Study of Saccadic Eye Movements During Unseen Reaching Movements," Journal of Neuroscience, vol. 22, no. 17, pp. 7721-7729, Sept. 2002.

[38] Thrishantha Nanayakkara and Reza Shadmehr, "Saccade Adaptation in Response to Altered Arm Dynamics", Journal of Neurophysiology, 2003, 90:4016-4021.

[39] Thrishantha Nanayakkara, Keigo Watanabe, Kazuo Kiguchi and Kiyotaka Izumi, "Evolving a multiobjective obstacle avoidance skill of a seven-link manipulator subject to constraints," International Journal of Systems Science, vol. 35 , no. 3, pp. 167 - 177, March 2004.

[40] Thrishantha Nanayakkara, Kazuo Kiguchi, Tsukasa Murakami, Keigo Watanabe, Kiyotaka Izumi, "Enhancing the Autonomy of Teleoperated Redundant Manipulators Through Fusion of Intelligent Control Modules," International Journal of Robotics and Mechatronics, vol.14, no.3, pp.534-545, June, 2002.

[41] Kazuo Kiguchi, Thrishantha Nanayakkara, Keigo Watanabe, Toshio Fukuda, "Multi-Dimensional Reinforcement Learning Using a Vector Q-Net - Application to Mobile Robots", International Journal of Control, Automation and Systems, vol.1, no.1, pp.142-148, 2003.

[42] Thrishantha Nanayakkara, Keigo Watanabe, Kazuo Kiguchi and Kiyotaka Izumi, "Evolutionary Learning of a Fuzzy behavior Based Controller for a Non-Holonomic Mobile Robot in a Class of Dynamic Environments," International Journal of Intelligent and Robotic Systems, vol.32, no.3, pp.255-277, November, 2001.

[43] Thrishantha Nanayakkara, Keigo Watanabe, Kazuo Kiguchi and Kiyotaka Izumi, "Fuzzy Self-Adaptive RBF Neural Network Based Control of a Seven-Link Industrial Robot Manipulator," in Journal of Advanced Robotics, vol. 15, no. 1, pp. 17-43, 2001.

[44] Sadati, S. H., Naghibi, S. E., Althoefer, K., and Nanayakkara, T. (2018, April). Toward a low hysteresis helical scale Jamming interface inspired by teleost fish scale morphology and arrangement. In 2018 IEEE International Conference on Soft Robotics (RoboSoft) (pp. 455-460). IEEE.

[45] Seyedmohammadhadi Sadati, Luis Sullivan, Ian Walker, Kaspar Althoefer, Thrishantha Nanayakkara "3D-Printable Thermoactive Helical Interface with Decentralized Morphological Stiffness Control for Continuum Manipulators", accepted in ICRA2018

[46] Liang He, Nicolas Herzig, Simon De Lusignan, Thrishantha Nanayakkara, "Controllable Organ Design for Medical Simulation of Abdominal Palpation", 40th Annual International Conference of the IEEE Engineering in Medicine and Biology (EMBC) 2018.

[47] Damith Suresh Chathuranga, Zhongkui Wang, Yohan Noh, Thrishantha Nanayakkara, Shinichi Hirai, "A Soft Three Axis Force Sensors that is Useful for Robot Grippers", 2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), pp. 5556 – 5563, 2016.

[48] Sara Adela Abad Guaman, Nantachai Sornkarn, Thrishantha Nanayakkara, "The role of morphological computation of the goat hoof in slip reduction", 2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), pp. 5599 - 5605, 2016.

[49] Nantachai Sornkarn and Thrishantha Nanayakkara "The Efficacy of Interaction Behavior and Internal Stiffness Control for Embodied Information Gain in Haptic Perception", accepted in IEEE International Conference on Robotics and Automation (ICRA), 2016.

[50] Seyedmohammadhadi Sadati, Ali Shiva, Ahmad Ataka, Seyedeh Elnaz Naghibi, Ian Walker, Kaspar Althoefer, and Thrishantha Nanayakkara, "A Geometry Deformation Model for Compound Continuum Manipulators with External Loading", accepted in IEEE International Conference on Robotics and Automation (ICRA), 2016.

[51] Jelizaveta Konstantinova, Giuseppe Cotugno, Prokar Dasgupta, Kaspar Althoefer, Thrishantha Nanayakkara, "Autonomous Robotic Palpation of Soft Tissue using the Modulation of Applied Force", 6th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob2016), June 26-29, 2016, Singapore.

[52] Hasitha Wegiriya, Nantachai Sornkarn, Harry Bedford and Thrishantha Nanayakkara, "A Biologically Inspired Multimodal Whisker Follicle" 2016 IEEE International Conference on Systems, Man, and Cybernetics (SMC2016), 2016.

[53] Sadati, SM Hadi, Yohan Noh, S. Elnaz Naghibi, Althoefer Kaspar, and Thrishantha Nanayakkara. "Stiffness Control of Soft Robotic Manipulator for Minimally Invasive Surgery (MIS) Using Scale Jamming." In Intelligent Robotics and Applications, Volume 9246 of the series Lecture Notes in Computer Science, pp 141-151, Springer International Publishing, 2015.

[54] Thrishantha Nanayakkara, D. T. Amal Dissanayake, M. M. P. Pradeep Mahipala, and K. A. Gayan Sanjaya , "A Human-Animal-Robot Cooperative System for Anti-Personal Mine Detection", Humanitarian Demining: Innovative Solutions and the Challenges of Technology, ARS pulishers, http://www.ars-journal.com/hd.htm , 2008.

[55] Thrishantha Nanayakkara, Lasitha Piyathilaka, and Akila Subasingha "Mechatronics in Landmine Detection and Removal", MECHATRONIC SYSTEMS Devices, Design, Control, Operation, and Monitoring, Edited by Clarence De Silva, CRC Press, Taylor & Francis, Boca Raton, FL Chapter 28, 2007.

[56] K. Watanabe, Thrishantha Nanayakkara, Kazuo Kiguchi, and Kiyotaka Izumi "Achieving synergy through acquisition of human skill," A New Life-Style in 21 Century Living with Cognitive and Behavioral Intelligent Artificial Liferobot, Edited by Masanori Sugisaka, Springer-Tokyo, Chapter 40, 2005.

[57] Thrishantha Nanayakkara, Keigo Watanabe, Kazuo Kiguchi, and Kiyotaka Izumi, “Evolutionary Dynamics Identification of Multi-Link Manipulators Using Runge–Kutta–Gill RBF Networks,” Soft Computing in Measurement and Information Acquisition, Edited by L. Reznik and V. Kreinovich, Physica-Verlag, pp.208–222, 2003.

[58] Maximiliano Francisco Escudero Morland, Kaspar Althoefer, and Thrishantha Nanayakkara, “Novel Method to Form Adaptive Internal Impedance Profiles in Walkers”, 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC-2015), pp. 7764-7767, 2015.

[59] Chathuranga, Damith Suresh, Zhongkui Wang, Yohan Noh, Thrishantha Nanayakkara, and Shinichi Hirai. “Disposable Soft 3 Axis Force Sensor for Biomedical Applications.” In The 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC-2015), pp. 5521-5524, 2015.

[60] Damith Suresh Chaturanga, Zhongkuti Wang, Yohan Noh, Thrishantha Nanayakkara, and Shinichi Hirai, "Robust real Time Material Classification Algorithm using Soft Three Axis Tactile Sensor: Evaluation of the Algorithm", pp. 2093 - 2098, IROS 2015.

[61] Giuseppe Cotugno, Vishawanathan Mohan, Kaspar Althoefer, Thrishantha Nanayakkara, “Simplifying Grasping Complexity through Generalization of Kinaesthetically Learned Synergies”, Proceedings of 2014 IEEE International Conference on Robotics and Automation (ICRA), pp. 5345 - 5351, 2014 (DOI: 10.1109/ICRA.2014.6907645).

[62] Nantachai Sornkarn, Matthew Howard, Thrishantha Nanayakkara, "Internal Impedance Control helps Information Gain in Embodied Perception", Proceedings of 2014 IEEE International Conference on Robotics and Automation (ICRA), pp. 6685 - 6690, 2014 (DOI: 10.1109/ICRA.2014.6907846).

[63] S Sareh, A Jiang, A Faragasso, Y Noh, T Nanayakkara, P Dasgupta, L D Seneviratne, H A Wurdemann, K Althoefer, "Bio-Inspired Tactile Sensor Sleeve for Surgical Soft Manipulators" Proceedings of 2014 IEEE International Conference on Robotics and Automation (ICRA), pp. 1454 – 1459, 2014 (DOI: 10.1109/ICRA.2014.6907043).

[64] A Faragasso, J Bimbo, Y Noh, A Jiang, S Sareh, H Liu, T Nanayakkara, H A Wurdemann, K Althoefer, "Novel Uniaxial Force Sensor based on Visual Information for Minimally Invasive Surgery", Proceedings of 2014 IEEE International Conference on Robotics and Automation (ICRA), pp. 1405 – 1410, 2014 (DOI: 10.1109/ICRA.2014.6907036).

[65] Angela Faragasso, Agostino Stilli, Joao Bimbo, Yohan Noh, Hongbin Liu, Thrishantha Nanayakkara, Prokar Dasgupta, Helge Arne Wurdemann, Kaspar Althoefer, "Endoscopic Add-On Stiffness Probe for Real-Time Soft Surface Characterisation in MIS", 36th Annual International IEEE EMBS Conference, pp. 6517 - 6520, 2014 (DOI: 10.1109/EMBC.2014.6945121).

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