



# Curriculum Vitae

## PERSONAL DETAILS

<b>Name in Full</b>	Wijesinghe Arachchige <b>Nalin</b> Indrajith <b>Harischandra</b>
<b>Name Commonly used</b>	Nalin Harischandra
<b>Date of Birth</b>	1977-12-22
<b>Sex</b>	Male
<b>Status</b>	Married
<b>Nationality</b>	Sri Lankan

## EDUCATIONAL QUALIFICATIONS

### University Education:

- The Royal Institute of Technology (KTH), School of Computer Science and Communication, Stockholm, SWEDEN (<http://www.kth.se>)
  - Doctor of Philosophy (Ph.D) in Computer Science  
(Computational Biology and Neurocomputing) (06/2006 – 12/2011)
- The Royal Institute of Technology (KTH), School of Computer Science and Communication, Stockholm, SWEDEN (<http://www.kth.se>)
  - Technical Licentiate Degree (Tech.Lic) in Computer Science  
(Computational Biology and Neurocomputing) (09/2005 – 04/2008)
- University of Peradeniya (UOP), Faculty of Engineering, SRI LANKA (<http://www.pdn.ac.lk>)
  - B.Sc.Eng., First Class Honors in Engineering (Four-years Full time degree in English medium plus half a year Intern exposure)
  - **Field of Specialization:** Electrical & Electronic Engineering (07/1998 – 11/2002)

### Secondary Education:

- Kingswood College (KCK), Kandy, SRI LANKA (1989 – 1996)
  - General Certificate of Education (GCE – Advanced Level)  
Mathematics stream (4/4 Distinctions)  
Island wide Rank : 3<sup>rd</sup>  
District Rank (Kandy): 1<sup>st</sup>

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## RESEARCH EXPERIENCE

- **Senior Lecturer**, Department of Electrical and Electronic Engineering, Faculty of Engineering, University of Peradeniya, SRI LANKA (01/10/2016 – To date)
- **Post Doctoral Researcher**, Department of Biological Cybernetics, Faculty of Biology, and Center of Excellence Cognitive Interaction Technology (CITEC), University of Bielefeld, GERMANY (01/08/2014 – 31/07/2016)
  - Sensory coupled CPG networks for adaptive control of touch (CITEC EXC277 Grant)
  - Computational modeling and Bio-robotics
- **Post Doctoral Researcher**, Department of Biological Cybernetics, Faculty of Biology, University of Bielefeld, Bielefeld, GERMANY (01/08/2011 – 31/07/2014)  
**EMICAB** EU collaborative project:
  - Design and implementation of a forward model to predict self stimulation of a bionic active-tactile sensor
  - Modeling central drive of antennal movements in the stick insects
  - Visual and Tactile integration for accurate object localization and recognition
- **Doctoral/Research Student**, Computational Biology and Neurocomputing (CBN), School of Computer Science and Communication (CSC), The Royal Institute of Technology (KTH), SWEDEN (05/06/2006 – 14/12/2011)
  - Computer simulation of the neural control of locomotion in the Cat and the Salamander
  - **LAMPETRA** EU collaborative project, Neuromechanical simulations, Machine learning
- **Research Assistant**, DEEE, University of Peradeniya (01/05/2004 – 31/05/2005)
  - SIDA funded project: **“Research capacity building in Electrical and Electronic Engineering in the University of Peradeniya (UOP)”**, in collaboration with the School of Electrical Engineering, KTH, Sweden
- **Junior Research Assistant**, PGIS, Faculty of Science, University of Peradeniya
  - Researched on Adsorption Characteristics of Organic dyes on Natural substances, Department of Chemistry (01/07/1997 – 30/06/1998)

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## ACADEMIC/TEACHING EXPERIENCE

- **Senior Lecturer (Grade I)**, DEEE, University of Peradeniya (01/09/2017 – To date)
  - EE251: Principles of Electrical Measurements
  - EE322: Embedded Systems Design
  - EE387: Signal Processing
  - EE402/501: Advanced Control Systems
  - EE405/406: Undergraduate Project
  - EE580: Introduction to Biomedical Engineering
  - EE594: Industrial Robotics and Automation
  - EE595: Machine Intelligence and smart Systems
  - EE652: Research Methodologies for Electrical and Electronic Engineering - PG Course

- *EE654: Advanced Study in Electrical and Electronic Engineering - PG Project*
  - *EE656: Research Methods in Electrical Engineering- PG Course*
  - *EE657: Postgraduate Project*
  - *EE697: Industrial Robotics - PG Course*
  - *Soft Skills Development Program for First Year students - 2018, ITCG*
  - *Successful completion of the Induction Program for Academic Staff, SDC, University of Peradeniya* (10-12/2017)  
*The program (150 hrs) consisted of the following modules:*
    - *Orientation as a University Teacher*
    - *Personal Development and Counseling*
    - *Teaching and Learning Methods*
    - *Assessment and Evaluation*
    - *Curriculum Design and Revision*
    - *ICT Skills in Higher Education*
    - *Teaching Practice*
    - *Research in Higher Education*
    - *University Administrative Procedures*
    - *Strategic Planning and Management for Universities*
  - **Senior Lecturer (Grade II), DEEE, University of Peradeniya** (01/10/2016 –31/08/2017)
    - *EE559: Integrated Analog Electronic Circuits*
    - *EE322, EE402, EE580, EE594, EE697*
  - **Senior Lecturer (Grade II), DEEE, University of Peradeniya** (12/01/2009 – 08/04/2009)
    - *EE384: Communication Engineering*
    - *EE385: Digital Signals and Systems*
  - **Assistant Lecturer, DEEE, University of Peradeniya** (01/07/2003 – 30/04/2004)
    - *EE203: Electrical Measurements & Instrumentation*
    - *EE205: Logic Circuits and Digital Systems*
  - **Instructor In-charge, DEEE, University of Peradeniya** (15/12/2002 – 30/06/2003)
    - *Conducting Laboratory classes and Tutorials*
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## RESEARCH INTERESTS

- *Research interests are directed primarily towards **Computational Modeling and Bio-robotics** research in a variety of interrelated areas (cross-disciplinary research approach):*
  - *Bio-inspired Robotics and Automation*
  - *Neuromechanical simulations*
  - *Sensory-motor integration*
  - *Sensor networks and Active sensing*
  - *Application of Artificial Intelligence in Robotics*
- *Other areas of interest include:*
  - *Signal and Image processing and Dynamic systems*
  - *Artificial Neural Networks and Machine Learning*
  - *Computer Vision, Instrumentation and Human Computer Interfacing*

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# PUBLICATIONS

## Journal Articles

- Attanayake G, Senarathna M, Bergin M, Carlson D, Bhawe PV, Bowatte G, Harischandra N (2025) "An RF-CNN pipeline for predicting PM2.5 concentration in Sri Lanka", in *Journal of Hazardous Materials Advances*, 19, 100782
- Egodawela, SMKCSB, Samith Buddika HA, Gostar, AK, Harischandra, WANI, Dhammika AJ and Mahmoodian, M (2025- Accepted) "Metal Loss Defect Detection and Depth Estimation using Multi Spectral Image Analysis of Cooling Excited Steel Specimen with Corrosion", *Scientific Reports, Springer Nature*
- Egodawela S, Gostar AK, Buddika HS, Harischandra N, Abeykoon D, White PA, & Mahmoodian M (2024) "Multi-Spectral Imaging and Spectral Unmixing for Characterization of Relative Phase Composition of Steel Corrosion Products". in *IEEE Sensors Journal*, 24 (22) 37879-37893
- Egodawela S, Khodadadian Gostar A, Buddika HADS, Dammika AJ, Harischandra N, Navaratnam S, Mahmoodian M (2024) "A Deep Learning Approach for Surface Crack Classification and Segmentation in Unmanned Aerial Vehicle Assisted Infrastructure Inspections", *Sensors*, 24(6):1936
- Wijethunga PWSI, Chandrawansa IA, Rathnayake BMDT, Harischandra WANI, Weerakoon WMMTS, Samaranayake BGLT (2021) "Control of a 6DOF mobile manipulator with object detection and tracking using stereo vision", *J. Instrumentation*, 8(1), 1-13
- Harischandra N, Clare AJ, Zakotnik J, Blackburn LML, Matheson T, and Dürr V (2019) "Evaluation of linear and non-linear activation dynamics models for insect muscles", *PLoS Comput. Biol.* 15(10): e1007437
- Rathnapala JDCC, Jayathilake MUB, Rathnayake RMUKHMK, Samaranayake L and Harischandra N (2019) "Sensorless terrain estimation and torque control of a wheeled mobile robot", *Special Issue: J. Instrumentation*, 6(2), 41-48
- Gunasekara SR, Kaldera HNTK, Harischandra N and Samaranayake L (2019) "Distance estimation and material classification of a compliant tactile sensor using vibration modes and Support Vector Machine", *J. Instrumentation*, 6(1), 34-47
- Krause AF, Harischandra N, Dürr V (2015) "Shape recognition through tactile contour tracing: a simulation study", *Transactions on Computational Collective Intelligence XX, LNCS*, vol. 9420, pp 54-77
- Harischandra N, Krause AF, Dürr V (2015) "Stable phase-shift despite quasi-rhythmic movements: a CPG driven dynamic model of active tactile exploration in an insect", *Front. Comput. Neurosci.* 9:107
- Bicanski A, Ryczko D, Knuesel J, Harischandra N, Charrier V, Ekeberg Ö, Cabelguen J-M, and Ijspeert AJ (2013) "Decoding the mechanisms of gait generation in salamanders by combining neurobiology, modeling and robotics", *Biol. Cybernetics* 107(5), 545-564
- Sarvestani IK, Kozlov A, Harischandra N, Grillner S and Ekeberg Ö (2012) "A computational model of visually guided locomotion in lamprey", *Biol. Cybernetics* 107(5), 497-512
- Harischandra N, Knuesel J, Kozlov A, Bicanski A, Cabelguen J-M, Ijspeert A and Ekeberg Ö (2011) "Sensory feedback plays a significant role in generating walking gait and in gait transition in salamanders: a simulation study", *Front. Neurobotics* 5:3
- Harischandra N, Cabelguen J-M, Ekeberg Ö (2010) "A 3D musculo-mechanical model of the salamander for the study of different gaits and modes of locomotion", *Front. Neurobotics* 4:112
- Harischandra N, Ekeberg Ö (2008) "System identification of muscle-joint interactions of the cat hind limb during locomotion", *Biol. Cybernetics* 99(2), 125-138

## Conference Articles and Abstracts

- Senevirathna SK, Udawatte HE, Fernando MARM, Harischandra N, Ekanayake C (2023) "Image-Based Condition Monitoring of Transmission Line Conductors Using Image Processing and Deep Neural Networks", In 2023 IEEE 17th International Conference on Industrial and Information Systems (ICIIS), pp 388-393, 25-26 August 2023
  - Jayarathne SK, Rajapakshe OP, Siriwardhana SM, Kim K, Dassanayake T, Harischandra N, Wijayakulasooriya J, Ranaweera R (2023) "A Pattern Recognition Neural Network Approach for an SSVEP-Based Brain-Computer Interface", In 2023 IEEE 17th International Conference on Industrial and Information Systems (ICIIS), pp 447-452, 25-26 August 2023
  - Ranasinghe UD, Abeyrathne SK, Samaranayake L, Weerakoon TK, Harischandra N, Dissanayake G (2023) "Enhanced Frequency Domain Analysis for Detecting Wild Elephants in Asia Using Acoustics", In 2023 IEEE 17th International Conference on Industrial and Information Systems (ICIIS), pp 140-145, 25-26 August 2023
  - Egodawela S, Buddika HADS, Harischandra WANI, Dhammika AJ, Goastar AK, Mahmoodian M (2022) "Corrosion detection and severity estimation using spectral imaging and active thermography", In Proceedings of Annual Sessions 2022, Society of Structural Engineers Sri Lanka (SSESL), August 2022
  - Gunasekara S, Jayasuriya M, Harischandra N, Samaranayake L, Dissanayake G (2021) "A convolutional neural network based early warning system to prevent elephant-train collisions", In 2021 IEEE 16th International Conference on Industrial and Information Systems (ICIIS), pp 271-276, 09-11 December
  - Gunasekara S, Samaranayake L, Harischandra N (2021) "Design of a computed torque controller based joint controller for PUMA 560 manipulator", In 2021 IEEE 16th International Conference on Industrial and Information Systems (ICIIS), pp 353-358, 09-11 December
  - Hoinville T, Harischandra N, Krause AF, Dürr V (2014) "Insect-Inspired tactile contour sampling using vibration-based robotic antennae", In 3rd International Conference on Biomimetic and Biohybrid Systems (Living Machines, LM2014), Lecture notes in Computer Science, volume 8608, pp.118-129, 30
  - Krause AF, Hoinville T, Harischandra N, Dürr V (2014) "Contour-Net, a model for tactile contour-tracing and shape recognition", In 6<sup>th</sup> International Conference on Agents and Artificial Intelligence (ICAART 2014), pp. 92-101, 06-08 March
  - Harischandra N, Dürr V (2013) "Predictions of self-induced mechanoreceptive sensor readings in an insect-inspired active tactile sensing system", Adaptive Motion of Animals and Machines (AMAM 2013), International Symposium on, pp.59-62, 11-14 March
  - Harischandra N, Dürr V (2012) "A forward model for an active tactile sensor using Echo State Networks", Robotic and Sensors Environments (ROSE 2012), IEEE International Symposium on, pp.103-108, 16-18 Nove
  - Priyantha N, Harischandra N, Keerthiratne S (1998) "Adsorption characteristics of organic dyes on ball clay", Proceedings of the Sri Lanka Association for the Advancement of Science (SLAAS), Sri Lanka, pp 316
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- Egodawela, S., Buddika, H. A. D., Harischandra, N, Mahmoodian, M. and Mathota, M.R.S.N.M. (2022) "Conservation and management of ancient stupa using digital twins: a case study of UAV based 3D photogrammetric digitalization of Rankoth Wehera stupa". In International Conference On Sustainable Built Environment (ICSBE22), December 2022, Kandy, Sri Lanka
  - Egodawela S, Buddika HADS, Dhammika AJ, Harischandra N (2021) "Concrete Crack Detection and Segmentation in Images Collected by Unmanned Aerial Vehicles", IESL Kandurata Chapter Annual Secessions, 22 December, 2021
  - Gunasekara S, Jayasuriya M, Harischandra N, Samaranayake L, Dissanayake G (2021) "A vision-based early warning system to prevent elephant-train collisions", In International Conference on Wildlife Technologies and Wildlife Conservation (ICWTWC 2021), August 2021, London, UK; Open Science Index, Biological and Ecological Engineering Vol:15, No:08



- Karunarathne TMIH, Karunarathne RMUGCSK, Gayashan HAKS, Samaranayake BGLT, Harischandra WANI (2020) "2D Navigation of a four wheeled omnidirectional mobile robot in an unknown terrain using SLAM", In IEEE International WIE Symposium, 15 November 2020
- Samaranayake L. et al. (2020) "Elephant Train Collision Prevention System", In workshop on Humanitarian Robotics, IEEE International Conference on Robots and Systems (IROS), Las Vegas, USA, 09 November
- Jayathilake G. et al. (2020) "Generalizing foreground estimation algorithms in dynamic background conditions", In International Research Conference of SLTC 2020, IRC-2020
- Gunasekara SR, Kaldera HNTK, Harischandra N and Samaranayake L (2018) "METABOT: A metal tactile robot based on active sensing", In 6th IEEE Region 10 Humanitarian Technology Conference, Colombo, 06-08 December
- Harischandra N, Hoinville T, Krause AF, Dürr V (2015) "A CPG driven dynamic model for the study of active tactile sensing in an insect", Program No. 799.07.2015, Neuroscience Meeting Planner, Chicago, IL: Society for Neuroscience, 17-21 October
- Harischandra N, Krause AF, Dürr V (2015) "A 3D dynamic model for the study of central drive of antennal movements in insects", In 11<sup>th</sup> Göttingen Meeting of the German Neuroscience Society, T26-1A, 18-21 March
- Hoinville T, Harischandra N, Dürr V (2015) "Integrating touch and vision in Stick insects and insectoid robots", In 11<sup>th</sup> Göttingen Meeting of the German Neuroscience Society, T26-1A, 18-21 March, T26-2C, 18-21 March
- Harischandra N (2011) "Modeling locomotor CPG: from simple to complex (A case study) ", Invited talk, Workshop on Modelling Central Pattern Generators: Neuronal Network Design Principles and Problems, Twentieth Annual Computational Neuroscience Meeting (CNS2011), Stockholm, Sweden
- Harischandra N, Ekeberg Ö (2008) "Neuromechanical simulation in the study of cat and salamander locomotion", Poster Presentation, Motor Network Meeting, Lund University, BMC, S-221 84 Lund, SWEDEN

## **Books, Theses and Reports**

- Committee on Formulating a Strategy for Artificial Intelligence (CFSAI) (2024) "Artificial Intelligence in Sri Lanka", a White Paper to guide the development of a comprehensive strategy for AI integration in SRI LANKA, guided by the Presidential Secretariat and facilitated by the UNDP, Sri Lanka
- Harischandra N (2011) "Computer simulation of the neural control of locomotion in the cat and the salamander", Doctoral Thesis, ISBN 978-91-7501-168-4, TRITA-CSC-A 2011:20, ISSN 1653-5723, ISRN KTH/CSC/A—11/20--SE
- Harischandra N (2008) "Computer simulation of the neural control of locomotion in the cat", Technical Licentiate Thesis, ISBN 978-91-7178-937-2, TRITA-CSC-A 2008:4, ISSN 1653-5723, ISRN KTH/CSC/A—08/04--SE
- Harischandra N (2007) "Building a computer simulator for the study of stepping of the cat", Technical Report TRITA-CSC-CB 2007:01, Computational Biology and Neurocomputing, School of Computer Science and Communication, Royal Institute of Technology, Stockholm, SWEDEN

## **Data, Toolboxes, Software, etc**

- Clare AJ, Blackburn LML, Harischandra N, Zakotnik J, Dürr V, Matheson T (2019) "Activation dynamics data for locust hind leg extensor muscle", Bielefeld University
- Harischandra N, Clare A, Zakotnik J, Blackburn L, Matheson T, and Dürr V (2019) "Insect Muscle Activation Dynamics Simulator (IMADSim)", MATLAB central

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## PROJECTS AND GRANTS

- **Digital Transformation of Asian Higher Education:** DIGITAsia- co-funded by the Erasmus+ Programme of the European Union: **Team member, UOP, Sri Lanka**,
  - PI: Prof. Sakunthala Y. Ekanayake, (UOP, Sri Lanka)
  - Project Director (PD): Prof. Igor Balaban, Faculty of Organization and Informatics, University of Zagreb (2024/2027)
- **Building Capacity to Improve Air Quality in South Asia:** Reducing PM2.5 Through Low-Cost Sensor Network Driven Policy Decisions: **Team member, UOP, Sri Lanka**,
  - Lead Technical Personnel (LTP): Dr. Gayan Bowatte, (UOP, Sri Lanka), Prof. Meththika Vithanage (University of Sri Jayawardenapura, Sri Lanka)
  - Project Director (PD): Prof. Mike Bergin, Duke University, USA (2021/2024)
- **Collaborator: University Research Grant (URG/2022/33/E)** - Creating Digital Twins of Ancient Stupa Structures to Study Structural Defects and Suggest Remedial Measures
  - PI: Dr. H.A.D.S. Buddika, Dept. of Civil Engineering, Faculty of Engineering, University of Peradeniya, Sri Lanka. (05/2022-05/2024)
- **NVIDIA Applied Research Accelerator Program: Team member, UOP, Sri Lanka; "Elephant – Train Collision Prevention System"**
  - PI: Prof. B.G.L.T. Samaranayake (UOP, Sri Lanka),
  - Prof. Gamini Dissanayake (University of Technology, Sydney) (2021/2022)
- **IEEE RAS-SIGHT project: Team member, UOP, Sri Lanka; "Elephant – Train Collision Prevention System"**
  - PI: Dr. B.G.L.T. Samaranayake, Prof. K.M. Liyanage (UOP, **SRI LANKA**)
  - Prof. Gamini Dissanayake (University of Technology, **AUSTRALIA**) (2019-2021)
- **Medical Ventilator Design and Repair project: Team Member, Faculty of Engineering; "Peradeniya Biomedical Engineering Research Group (PBER)", In collaboration with Faculty of Medicine, UOP, **SRI LANKA**** (2020-2021)
- **University Research Grant (URG/2017/25/E), DEEE, Faculty of Engineering, University of Peradeniya, **SRI LANKA**; "Visual servoing for mobile robotic manipulators"** (2018-2021)
  - Collaborator: Dr. B.G.L.T. Samaranayake
- **CITEC (EXC 277) Grant, Cognitive Interaction Technology Center of Excellence, University of Bielefeld, GERMANY; "Sensory coupled CPG network for adaptive control of active touch"**
  - PI: Prof. Volker Durr (08/2014- 07/2016)
- **EU-FP7 project EMICAB**
  - Team member, University of Bielefeld, **GERMANY**
  - "Embodied Motion Intelligence for Cognitive, Autonomous Robots", An EU-funded project within FP7-ICT Cognitive Systems and Robotics, Grant 270182 (2011-2014)
- **EU-FP7 project LAMPETRA**
  - Team member, KTH, **SWEDEN**
  - "Life-like Artefacts for Motor-Postural Experiments and development of new control Technologies inspired by Rapid Animal locomotion", EU-Funded project within FP7: ICT-2007.8.3 (2008- 2011)

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## SESSION CHAIRING, REVIEW AND EDITORIAL BOARD

- **Reviewer of the IEEE Transactions on Cognitive and Developmental Systems**, Publication of IEEE-RAS and IEEE-CIS, ISSN 2379-8920
- **Session Chair**, *Biomedical Engineering and Instrumentation*, 17th IEEE International Conference on Industrial and Information Systems (**ICIIS2023**), DEEE, Faculty of Engineering, University of Peradeniya, Sri Lanka
- **Session Co-Chair**, *Control, Robotics and Automation*, 17th IEEE International Conference on Industrial and Information Systems (**ICIIS2023**), DEEE, Faculty of Engineering, University of Peradeniya, Sri Lanka
- **Reviewer**, 11th IEEE Region 10 Humanitarian Technological Conference (**HTC2023**), Marwadi University, Rajkot, India
- **Session Chair**, *Artificial Intelligence, Signal and Image Processing*, 16th IEEE International Conference on Industrial and Information Systems (**ICIIS2021**), DEEE, Faculty of Engineering, University of Peradeniya, Sri Lanka
- **Session co-chair**, *Biomedical Engineering and Biomechanics*, 16th IEEE International Conference on Industrial and Information Systems (**ICIIS2021**), DEEE, Faculty of Engineering, University of Peradeniya, Sri Lanka
- Member of the **Technical Program Committee**, Reviewer ICIIS2021, DEEE, UOP
- **Reviewer**, *International Women in Engineering Symposium (WIESymp 2021)*, IEEE-WIE Sri Lanka Section, November 2021
- **Reviewer**, *3rd Young Scientists' Conference on Multidisciplinary Research (YSCMR) 2021*, National Institute of Fundamental Studies, Sri Lanka
- **Session co-chair**, *Robotics, Control and Automation*, IEEE International Conference on Industrial and Information Systems (**ICIIS2019**), DEEE, Faculty of Engineering, University of Peradeniya, Sri Lanka
- **Session co-chair**, *Signal Processing*, IEEE International Conference on Industrial and Information Systems (**ICIIS2019**), DEEE, Faculty of Engineering, University of Peradeniya, Sri Lanka
- Member of the **Technical Program Committee**, 7th IEEE Region 10 Humanitarian Technological Conference (**HTC-2019**), Universitas Indonesia, Indonesia
- **Reviewer**, *6th International Conference on Multidisciplinary Approaches (iCMA2019)*, Faculty of Graduate Studies, University of Sri Jayewardenepura, Sri Lanka
- Member of the **Technical Program Committee**, 1st International Conference on Cybernetics and Intelligent systems (**ICORIS-2019**), Bali, Indonesia
- **Session Chair**, *Biomedical Engineering*, 6th IEEE Region 10 Humanitarian Technological Conference (**HTC-2018**), SLIIT, Colombo, Sri Lanka
- **Track Chair**, Member of the Technical Program Committee, 6th IEEE Region 10 Humanitarian Technological Conference (**HTC-2018**), SLIIT, Colombo, Sri Lanka
- **Session co-chair**, *Robotics, Control and Automation- Advances in Field Robotics*, IEEE International Conference on Industrial and Information Systems (**ICIIS2017**), DEEE, Faculty of Engineering, University of Peradeniya, Sri Lanka



- **Session co-chair**, *Robotics, Control and Automation- Advances in Robot Control*, IEEE International Conference on Industrial and Information Systems (**ICIIS2017**), DEEE, Faculty of Engineering, University of Peradeniya, Sri Lanka
  - **Track Chair**, *Biomedical Engineering*, IEEE International Conference on Industrial and Information Systems (**ICIIS2017**), DEEE, Faculty of Engineering, University of Peradeniya, Sri Lanka
  - **Reviewer of the Journal of National Science Foundation**, Sri Lanka, E-ISSN 2362-0161, NSF, Colombo (2017- To date)
  - **Reviewer of the Journal of Control and Intelligent Systems**, ISSN 1480-1752, ACTA Press, (2016- To date)
  - **Reviewer of the International Journal of Computational and Nonlinear Dynamics (JCND)**, ISSN 1555-1415, American Society of Mechanical Engineers (ASME) Digital Collection (2015- 2017)
  - Member of the **Technical Program Committee**, **ICIIS2019**, **ICIIS2017**, **ICIIS2015**, DEEE, UOP
  - **Reviewer of the International Journal of Advanced Robotic Systems (IJARS)**, Online ISSN 1729-8814 (2014- 2017)
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## Co-SUPERVISION: MSc, MPhil, PhD

- **PhD**: *Structural Corrosion Detection by High-Resolution Image Processing and Deep Learning*, Egodawela SMKSCB (2021- to-date)
    - Co-supervisors: Dr. Samith Buddika HAD, Dr. Dhammika AJ, UOP, SRI LANKA
    - Co-supervisors: Dr. Mojtaba Mahmoodian, Dr. Amirali K. Gostar, RMIT, AUSTRALIA
  - **MPhil**: *Visual Servoing for Mobile Robotic Manipulators*, Perera MSP (2021- 2022)
    - Co-supervisor: Prof. Samaranayake BGLT
  - **MSc**: *Dynamic Simulation of Insect head-antennal system for movement control*, Samarasena KSB (2018)
    - Co-supervisor: Dr. Ekanayake MPB
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## WORKSHOPS AND SEMINARS

- **Harischandra N**, Guest Speaker, "Exploring the World of Scientific Research and Innovation" at Acatelepsy '25 - the Annual Research Day of Mahamaya Girls' College, Kandy (06/03/2025)
- **Harischandra N**, Aththanayake G, "RF-CNN Pipeline for Forecasting PM2.5 Levels in Sri Lanka", At Consortium meeting/workshop on building capacity to improve air quality in South Asia, Organized by the Duke University, USA (12-14/08/2024)
- **Invitee/Contributor**: Conference on "Improving Air Quality in Lower-Middle Income Countries: Monitoring, Modeling, and Pollution Control)", organized by the China Sri Lanka Joint Research and Demonstration Centre (JRDC), Peradeniya, Sri Lanka (04/07/2024)

- **Harischandra N**, Guest Speaker, "Traversing the Cosmos: Evolution of Rovers in Space Exploration - From Wheels to AI and Bioinspiration-driven Innovations" organized by the Rover and Robotic division of SEDS OUSL, The Open University of Sri Lanka, Colombo (10/05/2024)
- **Invitee:** Workshop on Artificial Intelligence Readiness Assessment (AIRA): Organized by the Presidential Secretariat, the National Committee (CFSAI), and the Ministry of Technology, with the United Nations Development Programme (UNDP) in Sri Lanka. BMICH, Colombo (18/10/2023)
- **Participation:** Workshop for Academic staff on "Examination Rules/Regulations and Good Practices", Organized by the IQAC, Faculty of Engineering, University of Peradeniya (06/10/2023)
- **Invitee:** "Forum of Artificial Intelligence and Multidisciplinary Research" - Peradeniya University Research Excellence Showcase (PURES)-2023 at JRDC, Organized by the University Research Council, University of Peradeniya (29/08/2023)
- **Participation:** Awareness session on present and future plans in Air Quality monitoring in Sri Lanka, Conducted by the Central Environmental Authority-Sri Lanka, Battaramulla (09/08/2023)
- **Harischandra N**, Aththanayake G, "Spatial-Temporal Deep Learning Model for Improving Prediction Accuracy of Satellite Image based PM2.5", At Regional workshop on building capacity to improve air quality in South Asia, Organized by the UOP and Duke University, USA (06-08/08/2023)
- **Invitee:** "Round Table Discussion on Using AI for Developing Policy Measures" at AI4COVID-Impact Conference, Organized by the Ai4COVID Research Group. At Earls Regency, Kandy (24-25/07/2023)
- **Participation:** Training Session on Motion Capturing, EMG and IMU system at Human Performance Laboratory in Institute of Sports Medicine, Colombo 7, Sri Lanka (25-27/01/2023)
- **Harischandra N**, "Associating PM2.5/Meteo Data with Satellite Images from PlanetScope", Seminar for Pakistan Team under the Project: Building Capacity to Improve Air Quality in South Asia: Reducing PM2.5 Through Low-Cost Sensor Network Driven Policy Decisions, Online (26/09/2022)
- **Harishandra N**, "Robot Design using Computer Aided Tools, Simulation and Control", Workshop on Robotics for Agricultural Undergraduates, Organized by AHEAD Project, Faculty of Agriculture, UOP and PASS asia (28/05/2022)
- **Harischandra N**, "Introduction to MATLAB for Biologists- Session 2", Webinar Organized by the University Research Council, UOP (14/02/2022)
- **Harischandra N**, "Introduction to MATLAB for Biologists", Webinar Organized by the University Research Council, UOP (28/09/2021)
- **Certificate of Completion:** International Training Workshop on "BeiDou Technologies and Its Applications in the Belt and Road Countries and Regions" (Online), Organized by China Satellite Navigation Office-Academic Exchange Center (CSNO-AEC) Aerospace Information Research Institute (AIR), Chinese Academy of Sciences (CAS), (7-17/09/2021)
- **Keynote Speaker:** Harischandra N, "Robotricks 21/22- Robotics Webinar Series", Organized by IEEE Industry Application Society (IAS), Student Chapter, UOP (11/07/2021)
- **Participation:** Workshop on Humanitarian Robotics, IEEE International Conference on Intelligent Robots and Systems, IROS2020 (online), (09/11/2020)

- **Harischandra N**, "Shape up the Future Professionals- First steps towards the Professional World", EEES (Electrical and Electronic Engineering Society) Public Seminar Series, UOP (05/11/2020)
- **Harischandra N**, "Decoding the Mechanisms of Motor Control in Animals by Combining Neurobiology, Modeling and Robotics", In Tutorial on "Brain-inspired computing, neural control mechanisms and biomedical instrumentation with integrated electronics", ICIS2019, UOP (19/12/2019)
- **Harischandra N**, "Introduction to Dynamic Simulation: Webots Tutorial", Inspirational Workshop on Robot Design, Future P-BOTS 2019: School Robotic Challenge, Organized by DEEE, UOP (21/09/2019)
- **Harischandra N**, Workshop on "Introduction to Webots Dynamic Simulator", Organized by IEEE Industry Application Society (IAS), Student Chapter, UOP (05/09/2019)
- **Harischandra N**, "Planning for the Future- Keeping up with the Professional World", EEES (Electrical and Electronic Engineering Society) Public Seminar Series, UOP (03/09/2019)
- Participation: Half day workshop on "Internal Quality Assurance - Best Practices of Program Management", Staff Development Program I, Faculty of Engineering, UOP (10/05/2019)
- Participation: One day workshop on "Outcome Based Education towards enhancing the quality of Engineering Education" by Prof. Collin Kestell, Deputy Dean, Engineering, RMIT University, Australia; IQAU workshop, Faculty of Engineering, UOP (28/03/2019)
- **Harischandra N**, "Decoding the Mechanisms of Motor Control in Animals by Combining Neurobiology, Modeling and Robotics", Guest Lecture, Organized by IEEE Sri Lanka Central Region Subsection, DEEE, University of Peradeniya (06/07/2017)
- Participation: Training of Outbound Trainer (TOBT) Program for Faculty of Engineering, Organized by GTCC (Global Talent Coach and Consultants, Sri Lanka) and ITCGU (Industrial Training and Career Guidance Unit, UOP), Kothmale International Training Institute for Irrigation, Sri Lanka (01-02/06/2017)
- Participation: One day Workshop/Student seminars on Research and Development, Sri Lanka Telecom Plc, Lotus Road Colombo 01, Sri Lanka (17/10/2016)
- Hoinville, T, **Harischandra N**, Dürr V, "Moving the senses: from motion sensing to animals in motion", ZIF Workshop, Center for Interdisciplinary Research, University of Bielefeld, Germany (30/09-02/10/2015)
- **Harischandra N**, "Sensory coupled CPG network for adaptive control of active touch" (17/06/2015), CITEC Club, Center of Excellence, Cognitive Interaction Technology, University of Bielefeld, Germany
- Participation: 3rd Symposium of Arthropod Neuroscience Network (ANN), 107th Annual Meeting of the German Zoological Society, DZG (11-14/09/2014), University of Göttingen, Germany
- **Harischandra N**, "A forward model for an active tactile sensor" (28/09/2012), EMICAB Consortium meeting, Catania, Sicily, Italy.
- **Harischandra N**, "Computer simulation of the neural control of locomotion in the cat and the salamander" (14/12/2011), Public defense of the Doctoral thesis, Stockholm; Opponent: Dr. Silvia Gruhn, Dept. of Animal Physiology, University of Cologne, Köln, Germany
- **Harischandra N**, "Forward models: time series prediction for an active tactile sensor" (08/12/2011), EMICAB Consortium meeting, Aachen, Germany

- *Participation: ICIRA (06-08/12/2011), 4th International Conference on Intelligent Robotics and Applications, Aachen, Germany*
- *LAMPETRA (EU-FP7) Consortium meeting (10-11/02/2011), Stockholm, Sweden.*
- **Harischandra N**, "Neuro-mechanical simulations in the study of locomotion" (14/04/2010), *Invited Speech, BIRG, EPFL, Laussane, Switzerland*
- **Harischandra N**, Ekeberg Ö, "Neuromechanical simulations in the study of cat and salamander locomotion" (23/10/2008), *Poster presentation, Motor Network Meeting, Lund University, BMC, S-221 84 Lund, SWEDEN*
- *Participation: Workshop and Retreat (01-02/09/2008), Sandhamn. "Innovations and Industrial Collaboration", Stockholm Brain Institute, Karorinska Institute, Sweden*
- **Harischandra N**, "Computer simulation of the neural control of locomotion in the cat" (28/04/2008). *Technical Licentiate Thesis defending seminar, RB35, AlbaNova; Opponent: Prof. Jhon Hallam, The Maersk Mc-Kinney Moller Institute, University of Southern Denmark, Campusvej 55, DK-5230 Odense M, DENMARK*
- *Participation: Workshop on Action-Perception (25/01/2008); Host .Prof. Sten Grillner, Stockholm Brain Institute (SBI). Vetenskapsakademien, Stockholm*
- **Harischandra N**, "Neuro-mechanical simulations" (14-15/11/2007), *Computational Biology workshop and retreat, KTH, Stockholm*
- *Participation: Workshop and Retreat (03-04/09/2007), Sandhamn. Stockholm Brain Institute, Karorinska Institute, Sweden*
- **Harischandra N**, "Biologically realistic computer simulations of walking patterns of the cat" (06-10/09/2006), *Research collaborators meeting, Institute of Advanced Study. Wissenschaftskolleg zu Berlin, Germany*
- **Harischandra N**, "Building a computer simulator for the study of walking patterns of the cat" (July 2006), *Brain Interest Group (BIG), Faculty of Medicine, UOP, Sri Lanka*
- **Harischandra N**, "Data acquisition and instrument control through GPIB using LabView" (February 2005), *Undergraduates DEEE, Faculty of Engineering, UOP, Sri Lanka*
- **Harischandra N**, "Brain-prosthetic and Brain-computer interfacing using EEG": (December 2004), *DEEE, Faculty of Engineering, UOP, Sri Lanka*
- *Participation: Two day workshop on "Modern developments in industrial motion control systems" (August 2004), Faculty of Engineering, UOP, Sri Lanka*
- *Participation: One day workshop on "Productivity and 5S Good House Keeping Practices" organized by Project SMED & PESS, Faculty of Engineering, University of Peradeniya (2001)*
- *Active participation in Engineering Jubilee Exhibition, UOP (2000)*

## AWARDS AND SCHOLARSHIPS

- **Winner, Robotic Competition, Open category, Gunasekara SR, Kaldera HNTK, Harischandra N and Samaranyake L** "METABOT: A metal tactile robot based on active sensing", In 6th IEEE Region 10 Humanitarian Technology Conference, Colombo, 06-08 December (2018)
  - **Best Student Paper**, Krause AF, Hoinville T, Harischandra N, and Dürr V, "Contour-Net - A Model for Tactile Contour-tracing and Shape-recognition", ICAART2014-International Conference on Agents and Artificial Intelligence (2014)
  - **SIDA- Full scholarship** to conduct a research leading to Doctoral Degree in Computer Science at KTH, Sweden in collaboration with the DEEE, UOP, Sri Lanka (2004)
  - **University Prize for the Academic Excellence in General Convocation** (2003)
  - **The Prof. E.O.E. Pereira Prize for Best Performance in Final exam. in Eng. -part II** (2002)
  - **The Ananda Amarasinghe Memorial Prize in Engineering for the Best Performance in First Examination in Engineering** (1999)
  - **The University Scholarship for the Best Performance in First Exam. in Engineering** (1999)
  - **Study tour to Bangkok in Commemoration of Sri Lanka's Golden Jubilee of Independence for the Best Performance in G.C.E. (A/L)** (1998)
  - **Best All Rounder of the year 1996, Kingswood College, Kandy, Sri Lanka** (1996)
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## POSITIONS HOLD/HELD

- **Chairman:** Central Region Subsection (CRSS) of IEEE Sri Lanka Section, (2025/26)
- **Financial Chair:** IEEE-ICIIS 2025, Faculty of Engineering, UOP (2025)
- **Webmaster:** Peradeniya Engineering Faculty Alumni Association (PEFAA), University of Peradeniya (11/2023- to date)
- **Member: Local Organizing Committee of the Regional two-day workshop on building capacity to improve Air quality in South Asia**, Organized by the University of Peradeniya and Duke University, USA (06-08/08/2023)
- **Member: Committee to formulate a strategy for Artificial intelligence of Sri Lanka 2023-2028**, Presidential Secretariat and Ministry of Technology, Government of Sri Lanka (06/2023- to date)
- **Postgraduate Coordinator:** PG Program at Department of Electrical and Electronic Engineering, UOP (2023- to date)
- **General Co-chair/Conference Secretary:** IEEE-ICIIS2023, Faculty of Engineering, UOP (08/2023)
- **Webmaster:** Department of Electrical and Electronic Engineering, University of Peradeniya (2022- to date)
- **Senior Treasurer:** Robotics Society, University of Peradeniya (2020- to date)
- **Laboratory Coordinator:** Robotics, Control and Automation Lab, DEEE, Faculty of Engineering, UOP (Sep/2022- to date)



- **Member: Faculty E-Learning and Web Development Committee, Faculty of Engineering, UOP (2019- to date)**
- **Treasurer: IEEE-Central Region Subsection (CRSS) of IEEE Sri Lanka Section, (2021/2022)**
- **Financial Chair/Treasurer, ICIIS 2021, Faculty of Engineering, UOP (09-11/12/2021)**
- **Chairman, Organizing Committee for Semester 4 Exams, E16 Batch (03-04/2020)**
- **Financial Chair/Treasurer, ICIIS 2019, Faculty of Engineering, UOP (18-20/12/2019)**
- **Member of the Organizing Committee of Future P-Bots, School Robotic Challenge, DEEE, Faculty of Engineering, UOP (Sep-Dec/2019)**
- **TEC (Technical Evaluation Committee) member for the year 2019, DEEE, Faculty of Engineering, UOP (2019)**
- **Treasurer: IEEE-Central Region Subsection (CRSS) of IEEE Sri Lanka Section, (2019/2020)**
- **Committee member of the Faculty Quality Assurance Cell (FQAC), Faculty of Engineering, UOP (2019)**
- **Co-chair: Electrical and Electronic Engineering Research and Project Symposium (EERaPS-2019), DEEE, Faculty of Engineering, UOP (2019)**
- **Temporary Senior Student Counselor, Faculty of Engineering, UOP (01/01-31/03/2018)**
- **Member of the Local Conference Management team, ICIIS 2017, Faculty of Engineering, UOP (15-16/12/2017)**
- **Member of the Logistic Committee, Orientation program for E16 Students, Faculty of Engineering, UOP (05/12/2017)**
- **Member of the Organizing Committee of Career Fair 2017, Faculty of Engineering, University of Peradeniya (09/09/2017)**
- **Member of the Organizing Committee of CITEC-Graduate School Retreat and Research Symposia 2014 and 2015, University of Bielefeld, Germany**
- **Member of the International Advisory Panel of ICIIS2013/2015 (8th & 10th IEEE International Conference on Industrial and Information Systems), Faculty of Engineering, University of Peradeniya, Sri Lanka, [www.iciis.org/](http://www.iciis.org/)**
- **Member of the Local Conference Management team, Computational Neuroscience Meeting- CNS 2011, Royal institute of Technology, Stockholm, Sweden (23-28/07/2011)**
- **Member of the Local Conference Management team, ICIIS 2006, Faculty of Engineering, UOP (08-11/08/2006)**
- **System administrator, Postgraduate Laboratory, DEEE, UOP (2004-2005)**
- **Coordinator of the Electronics and Instrumentation lab on E-Techno and Industrial Day, Dept. of Electrical and Electronic Engineering, University of Peradeniya (2003)**

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## MEMBERSHIPS

- Senior Member of the *Institute of Electrical and Electronic Engineers (IEEE)* (2023-To date)
- Member of the *Institute of Electrical and Electronic Engineers (IEEE)* (2017- 2023)
- Member of the *IEEE Robotics and Automation Society (IEEE-RAS)* (2017-To date)

- Member of the *IEEE Computational Intelligence Society (IEEE-CIS)* (2017-To date)
- Member of the *Organization for Computational Neurosciences (OCNS)* (2011-To date)
- Associate Member of the *Institute of Engineers, SRI LANKA (IESL)* (2003-To date)
- Associate Member of the *Engineering Council, SRI LANKA (ECSL)* (2017-To date)
- Member of *German Neuroscience Society (GNS) and Federation of European Neuroscience Societies (FENS)* (2014-2016)
- Member of *Cluster of Excellence Cognitive Interaction Technology (CITEC), University of Bielefeld, GERMANY* (2014-2016)
- Member of *Stockholm Brain Institute (SBI), Karolinska Institutet, SWEDEN* (2007-2012)
- Member of *Translational Sensorimotor Network (TSN) in SWEDEN* (2007-2012)