CURRICULUM VITAE

KTM Udayanga Hemapala
Professor in Electrical Engineering

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1. Personal Information

Full Name	:	Kullappu Thantrige Manjula **Udayanga Hemapala**
Date of Birth	:	09th February 1979
Present Residence	:	62, Samagi Mawatha, Mampe, Piliyandala, Sri Lanka.
Passport Number	:	OL7450748

2. Qualifications

Educational Qualifications

First Degree	:	**BSc Eng (Hons)** with First Class 2004 March 01 - University of Moratuwa
Postgraduate	:	**PhD, 2009 April 15- University of Genova, Italy**

Professional Qualifications and Memberships

Chartered Engineer	: Institution of Engineers, Sri Lanka
Fellow Member	: Institution of Engineers, Sri Lanka (F-1187)
IEEE	: Senior Member since 2004 Senior Member IEEE Power & Energy Society Senior Member IEEE Power Electronics Society

3. Work Experience

Academic and Academic Administrator

Secretary	**:**	**Secretary to the Ministry of Energy from 2024/09/25 to date**
Dean	:	Faculty of Engineering, University of Moratuwa from 2022/10/20 to 2024/09/25
Head	:	Department of Electrical Engineering from 2021/01/01 to 2022/10/20
Professor	**:**	**At University of Moratuwa from 2017/07/06 to date**
Director General	:	Sri Lanka Institute of Advanced Technological Education, Ministry of Higher Education, 2019/02/01 to 2019/12/04
Senior Lecturer GII/I	:	At University of Moratuwa from 2010/06/02 to 2017/07/05
Senior Lecturer (On Contract)	:	At University of Moratuwa from 2009/05/04-2010/05/31
Post Doctor	:	At University of Genova, Italy from 2009/01/01-2009/03/31
PhD Scholar	:	At University of Genova, Italy from 2006/01/01-2008/12/31

Consultant

Microgrid Related Projects

1. Contract No: R200955, TA-10193 SRI: Artificial Intelligence-Powered Microgrids to Enable a Futuristic and Reliable, Distributed Renewable Energy System - Renewable Energy Expert (UOM - Microgrid) (57003-001), 2024, appointed by Asian Development Bank
2. TA-9881 SRI: Supporting Tourism Resilience - Micro Grid Commercialization – Technical Consultant: 2023, Appointed by Asian Development Bank
3. Lacuna Funding for preparing a data set for DSM of Microgrid, Meridian Institute, USA, Project Coordinator: 2023
4. Development of a Microgrid Project at Udagaldebokka, Sri Lanka, USAID/Sri Lanka Energy Program, Technical Consultant: 2023, Appointed by Chemonics
5. Consultant, Design and Development of a Microgrid, Dravima Lanka (Pvt) Ltd, 2024

Renewable Energy Projects

1. Consultant: Conducting Baseline survey: Energy Storage System installation project at Hambantota Hospital, Sri Lanka, 2024, Appointed by Mavisuru Holdings
2. Project coordinator and Supervisor (UoM): Research and Development towards Renewable Energy Integration: Funded by Ceylon Electricity Board (Main Electrical Utility in Sri Lanka), 2022
3. Project Coordinator (UoM) : Implementation of High Technology Renewable Energy Smart Grid Pilot Testing Project: Collaboration with ADB The Digital Grid Consortium, 2023
4. Project Coordinator (UoM) for the Lanka Electricity Company (LECO), Artificial Intelligence-Powered Microgrids to Enable a Futuristic and Reliable Distributed Renewable Energy System, 2024
5. Team Leader, Research Team of the University of Moratuwa to conduct a consultancy on "Techno-Economic Feasibility Study on Demand Response Opportunities in Sri Lanka" for the Public Utilities commission (PUCSL) Sri Lanka, 2022

Investigation committee

1. Chairman of the committee to investigate the tripping of Kothmale Biyagama 220 kV Transmission line resulting Power System Failure: 2022

Academic Related Projects

1. Appointment as External Examiner for the BSc Engineering Hons in Electrical & Electronic Engineering, Sri Lanka Institute of Information Technology, Sri Lanka, 2023
2. Consultant for developing the curriculum of the newly proposed Faculty of Engineering, University of Colombo, 2021
3. Lead Expert (Individual Consultant) for the Curriculum Revision of the Department of Electrical and Electronic Technology. Faculty of Technology. Rajarata University of Sri Lanka, 2021
4. Chairman of the Evaluation Panel appointed by the Institution of Engineers Sri Lanka to evaluate "Bachelor of Technology Honors in Engineering in Electrical Engineering Degree", Open University of Sri Lanka, 2021
5. Member of the Evaluation Panel appointed by the Institution of Engineers Sri Lanka to evaluate "Bachelor of Engineering in Electrical and Electronic Engineering Degree in the Department of Electrical and Electronic Engineering, University of Sri Jayewardenepura, 2022
6. Chairman of the Evaluation Panel appointed by the Institution of Engineers Sri Lanka to evaluate, Bachelor of Science in Engineering (Hons) in Electrical and Electronic Engineering Degree, Kothalawala Defense University, 2022
7. Chairman, Programme Review panel appointed by University Grant Commission, Sri Lanka to evaluate, Bachelor of the Science of Engineering, Faculty of Engineering, University of Ruhuna, 2022
8. Member, Programme Review panel appointed by University Grant Commission, Sri Lanka to evaluate, Bachelor of Technology Honours in Engineering Degree Programme, Faculty of Engineering Technology, The Open University of Sri Lanka, 2023

4. Research

Coordinator
Smart Grid Research Lab, Funded by Asian Development Bank (ADB)

https://www.researchgate.net/lab/Smart-Grid-Research-Group-K-T-M-U-Hemapala?fbclid=IwAR2qmHEUgpnGcHVhZcrNTHYfKShNPUOCHlcE7A3PNqDARJPaZqY4sWGPI_Y

http://sgrl.elect.uom.lk/

Research Areas
Smart Grid, Power System Control, Robotics and Automation, Industrial Engineering, Renewable Energy

Ranked 02 within the University under the Engineering field based on the Scholarly Output

Ranked 04: within Sri Lanka under the Engineering field based on the Scholarly Output

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5. Publications/Projects

https://scholar.google.com/citations?user=9uqPOq0AAAAJ&hl=en

Patent
Method of detecting low voltage domestic series-arc fault, National Patent, 15/09/2023

Recently Completed Postgraduate Research Projects

Mphil students

1. D.S.V Bandara: Development of a Prototype of an Anthropomorphic Transhumeral Prosthetic Arm for Upper-Arm Amputees, 2015

MSc Students

1. Asitha Kulasekara, Agent Based Control and Protection for Smart Grids , 2011
2. AN Hewagama, Vision based Automation of a Manual Tablet Sorting Machine, 2011 March.
3. GT Galagedarage, Design of an Automated punching system for refrigerator door manufacturing process, 2011 February.
4. Janaka Gunatilake, Error Correction for Teba Application in a Building Mangement System, 2012 January
5. H.P.G.R.N.Chamikara, Design new load shedding scheme considering possible islanding operations in Sri Lankan network , 2012 November
6. Harshana Somapriya , Determining suitable settings for auto reclosing schemes of the Sri Lankan transmission system , 2012 November
7. SAD Tharanga , Economic Analysis of adding capacitor banks to the Sri Lankan transmission network, 2012 November
8. R.M.P.B. Rathnayake, Power Quality issues in Puttalam grid subsatation due to wind power generation: A case study, 2013 August
9. RMJ Rathnayake, "Developing of scalable SCADA in view of acquiring multi-protocol smart grid devices", 2013
10. TM Weerakkody, An expert system for a competitive bid estimation of an electrical installation project,2014 March
11. Lilantha Neelawala, Benchmarking of Electricity Distribution Licensees operating in Sri Lanka, 2014 March

12. Indika Sujeewa Samarawickrama, Electricity demand prediction of large commercial buildings using support vector machine, 2014
13. KVR Perera, Performance evaluation of power distribution sector of Sri Lanka based on data envelopment analysis , 2015
14. LK Dissanayake, Identification of the optimum protection co-ordination in medium voltage distribution system of Sri Lanka, 2015
15. DLP Munasinghe. Capacitor switching transient analysis on a transmission grid substation (case study: thulhiriya gss), 2015
16. HBDY Yasaranga, Techno economic analysis on the use of HTLSs condutors for sri lanka's transmission system, 2015
17. DMDK Dissanayaka, autonomous fault isolation and power restoration system for MV/LV distribution, 2015
18. GKA Kumara, Design a contingency electricity feeding plana case study: Dehiwala area, 2015
19. AI Panagoda, Fault localization and restoration of distribution network using a multi agent based system, 2015
20. MS Dayarathne, Technological and cost effective selection procedure for rural electrification systems , 2015
21. KPRDS Kumarasiri, Techno-economic feasibility study on lightning protection of overhead transmission line having multi-chamber insulator arresters (MCIA). (Case study: Mathugama-Kukule, 132kv transmission line), 2016
22. Mahesh Sachintha Dunuweera, Techno economic analysis, design and implement a suitable communication method for utility systems, 2016
23. Techno-economic analysis of building energy system with net meter solar PV in Sri Lanka , Jayasinghe, TMSC, 2017
24. Development of an ann based plant controller for biomass downdraft pack bed gasifier, Rasanga, G.V.C, 2017
25. Techno economic analysis on the use of fully insulated cable for 33kv overhead power distribution system in Sri Lanka, Dissanayake, DMAK,2017
26. Network optimization based load balancing technique for LV electricity distribution network, Hewage, GHC, 2017
27. Long term annual electricity demand forecasting by artificial neural networks including socio-economic indicators and climatic conditions , Hapuarachchi, DC, 2018
28. Techno-economic analysis employing of on-site hydrogen production & storage systems with renewable energy for telecommunication sites in Sri Lanka, Silva, ASA, 2018
29. Defining of normalized load profile curves for domestic customer groups to estimate feeder power loss, Jayawardhana, HACH, 2018
30. Effect of residential solar PV penetration on distribution network protection schemes, Sanchala, IDS,2018
31. Identification of the Key Factors and Development of Strategies for Promoting Residential Customer Participation in Demand Response Programs, Isuri Nilundana Chathurangi, 2024

Books/ Book Chapters

1. Hemapala, K. T.; Jayasinghe, S. L.; Kulasekera, A. L.: 'Multi-agent based control of smart grid' (Energy Engineering, 2017), 'Communication, Control and Security Challenges for the Smart Grid', Chap. 12, pp. 321-345, IET Digital Library, 2017
2. Hemapala, MU. 2017. Robots for Humanitarian Demining. In: Canbolat, H (ed.), Robots Operating in Hazardous Environments. London, UK: I-Tech Education and Publishing. DOI: https://doi.org/10.5772/intechopen.70246, 2017
3. A Neural Network–Based Vector Control Scheme for Regenerative Converters to Use in Elevator Systems, Hemapala, KTMU; Wewalage, Suren Senadheera; Swathika, OV Gnana; Smart Buildings Digitalization 2022
4. Development of UAV-Based Aerial Observation Platform to Monitor Medium-Voltage Networks in Urban Areas Hemapala, KTMU; Ranasinghe, DH; Swathika, OV Gnana; Smart Buildings Digitalization 2022

5. An Approach to Realize Luxury Transit Residential Tower Aided with State-of-the-Art Automation Technologies; Swathika, OV Gnana; Karthikeyan, K; Chirravuri, Vaishnavi; Hemapala, KTMU; Smart Buildings Digitalization 2022
6. Case Study: Optimized LT Cable Sizing for an IT Campus Gnana Swathika, OV; Karthikeyan, K; Subramaniam, Umashankar; Hemapala, KTMU; Smart Grids for Smart Cities Volume 1 2023
7. Optimal placing and sizing of distributed generation in distribution system with different weighing factors Hemapala, KTM Udayanga; Lakmali, Rajapaksha Mudiyanselage Tharangani; Swathika, OV Gnana; Next-Generation Cyber-Physical Microgrid Systems 2024
8. IoT-Based Monitoring System with Machine Learning; Chauhan, Aadi Ashutosh; Bhojwani, Rohan; Pal, Rahul; Swathika, OV Gnana; Karthikeyan, Aayush; Hemapala, KTMU; IoT and Analytics in Renewable Energy Systems (Volume 2): AI, ML and IoT Deployment in Sustainable Smart Cities 2023
9. Design and Implementation of Bluetooth-Enabled Home Automation System, Nagavindhya, Nagavindhya; Jayamurthi, Krithikka; Hency, V Berlin; Swathika, OV Gnana; Karthikeyan, Aayush; Hemapala, KTMU; IoT and Analytics in Renewable Energy Systems (Volume 2): AI, ML and IoT Deployment in Sustainable Smart Cities 2023

Peer Reviewed Journal Papers

1. M.U.Hemapala, Effects of landmines in Sri Lanka , Journal of Mine Action, 2006, Volume 10.2, ISSN 1533-6905
2. E.E.Cepolina, M.U.Hemapala, Power tillers for demining: blast test , International Journal of Advanced Robotics Systems, 2008, Vol.4, ISSN 1729-8806
3. Manjula Hemapala, Vittorio Belotti, Rinaldo Michelini, Roberto Razzoli, "Humanitarian demining: path planning and remote robotic sweeping", Industrial Robot: An International Journal, 2009, Vol. 36 Iss: 2, pp.146 – 156, ISSN: 0143-991X
4. K.T.M.U. Hemapala and Roberto P. Razzoli, Design and Development of a Landmines Removal Robot, International Journal of Advanced Robotic Systems, 2012 ,Vol 9
5. Ariyasinghe Suranjith, KTMU Hemapala , Microgrid Test-Beds and Its Control Strategies , Smart Grid and Renewable Energy, 2013, Vol 4 No 1, pp 11-17
6. K. K. M. S. Kariyawasam, K. K. N. P. Karunarathna, R. M. A. Karunarathne, M. P. D. S. C. Kularathne, K. T. M. U. Hemapala, Design and Development of a Wind Turbine Simulator Using a Separately Excited DC Motor, Smart Grid and Renewable Energy, 2013, Vol 4 No 3, pp 259-265
7. A Kulasekara, KTMU Hemapala, RARC Gopura, Dual Layered Architecture for Multi Agent Based Islanding and Load Management for Microgrids, Journal of Power and Energy Engineering, 2015, Vol 3 No 5,pp 29-42
8. K. T. M. U. Hemapala and Lilantha Neelawala, “Benchmarking of Electricity Distribution Licensees Operating in Sri Lanka,” Journal of Energy, vol. 2016, Article ID 2486319, 10 pages, 2016
9. HBD Yasaranga, WDAS Wijayapala and KTMU Hemapala “Techno Economic Analysis on the use of High Temperature Low Sag (HTLS) Conductors for Sri Lanka’s Transmission System”, January 2017, Journal of the Institution of Engineers, Sri Lanka
10. D.S.V Bandara, R.A.R.C Gopura, K.T.M.U Hemapala, and Kazuo Kiguchi, “Development of a Multi-DoF Transhumeral Robotic Arm Prosthesis”, Journal of Medical Engineering and Physics, 2017, 48, 131-141
11. Hettiarachchi, H. W. D., KTM Udayanga Hemapala, and AG Buddhika P. Jayasekara. "Review of Applications of Fuzzy Logic in Multi-Agent-Based Control System of AC-DC Hybrid Microgrid." IEEE Access 7 (2018): 1284-1299.

12. T S S Senarathna, K T M Udayanga Hemapala, Review of adaptive protection methods for microgrids, AIMS Energy, 2019, 7(5): 557-578.
13. Swathika, OV Gnana, and K. T. M. U. Hemapala. "IOT Based Energy Management System for Standalone PV Systems." Journal of Electrical Engineering & Technology (2019): 1-11.
14. Attanayaka, A. M. S. M. H. S., J. P. Karunadasa, and K. T. M. U. Hemapala. "Estimation of state of charge for lithium-ion batteries-A Review." AIMS Energy 7.2 (2019): 186.
15. Hemapala, K. T. M. U., H. M. J. N. Herath, and OV Gnana Swathika. "Benchmarking medium voltage feeders using data envelopment analysis: a case study." Telkomnika 17.3 (2019): 1547-1558.
16. Priyadarshana, HVV; Sandaru, MA Kalhan; Hemapala, KTMU; Wijayapala, WDAS; A review on Multi-Agent system based energy management systems for microgrids; AIMS energy, 7, 924-943, 2019
17. Lulbadda, Kushan Tharuka; Hemapala, KTMU; The additional functions of smart inverters; Aims Energy ,7, 971-988, 2019
18. Swathika, Odiyur VG; Hemapala, Udayanga; Optimized overcurrent relay coordination in a microgrid system; Recent Advances in Computer Science and Communications (Formerly: Recent Patents on Computer Science), 13, 1239-1250, 2020
19. Senarathna, Thiramuni Sisitha Sameera; Hemapala, Kullappu Thantrige Manjula Udayanga; Optimized adaptive overcurrent protection using hybridized nature-inspired algorithm and clustering in microgrids, Energies, 13, 3324, 2020
20. Boralessa, MA; Priyadarshana, HV; Hemapala, KTM; A review on control systems for fast demand response for ancillary services. AIMS Energy, 8, 2020
21. Lakshika, KA Himali; Boralessa, MA Kalhan Sandaru; Perera, Manoja Kaushali; Wadduwage, Darshana Prasad; Saravanan, Vasudevan; Hemapala, KT Manjula Udayanga; Reconfigurable solar photovoltaic systems: A review Heliyon6 2020
22. Attanayaka MSMH S; Karunadasa, Jayawardena P; Hemapala, Kullappu TMU; Comprehensive electro-thermal battery-model for Li-ion batteries in microgrid applications, Energy Storage, 2021
23. Aluthge, C Devin; Hemapala, KTM Udayanga; Lucas, J Rohan; BESS as a UPS to Power Systems With High Solar Penetration; Frontiers in Energy Research, 9, 2021
24. Tharuka Lulbadda, Kushan; Hemapala, Udayanga; Use of solar PV inverters during night-time for voltage regulation and stability of the utility grid; Clean Energy, 6, 646-658, 2022
25. Somathilaka, SP; Senarathna, NT; Hewapathirana, HE; Sumathipala, WMKS; Hemapala, KTMU; Lucas, JR; De Silva, PSN; Nature of Series-Arc Faults and Parameters Affecting the Risk of Domestic Electrical Fires, Eng.-J. Inst. Eng. Sri Lanka, 55, 63-70, 2022

International Conference Papers

1. R.C.Michelini, R.P.Razzoli, M.U.Hemapala , Humanitarian demining: efficiency by intelligent planning and low-cost robotics , Intl. Annual EUROSIS Industrial Simulation Conf. ISC, Lyon, June 2008
2. V.Belotti, M.U.Hemapala, R.C.Michelini, R.P.Razzoli, Remote robotic path control and mine clearing , ASME-ESDA 08 Conf., Haifa, July 2008
3. V.Belotti, M.U.Hemapala, R.C.Michelini, R.P.Razzoli, Lean robotics for humanitarian mine sweeping, ICAR 2009, June 2009
4. K. T. M. U. Hemapala and N. Perera , Harmonic elimination in induction generator based micro-hydroelectric schemes, International Conference on Energy, Automation, and Signal ,ICEAS 2011 , India, 28-30 Dec. 2011
5. A. L. Kulasekera, R. A. R. C.Gopura, K. T. M. U. Hemapala and N. Perera, A Review on Multi-Agent Systems in Microgrid Applications, in Proc. of Innovative Smart Grid Technologies Conference ,ISGT 2011
6. A. L. Kulasekera, R. A. R. C.Gopura, K. T. M. U. Hemapala, N. Perera, and Achala Pallegedara, Dual Layered Multi Agent System for Intentional Islanding Operation of

Microgrids, International Conference on Artificial Life and Robotics AROB 2012, Beppu, Japan, 2012. PDF

7. D. S. V. Bandara, R. A. R. C.Gopura, K. T. M. U. Hemapala and K. Kiguchi, Upper Extremity Prosthetics: Current Status, Challenges and Future Directions, International Conference on Artificial Life and Robotics, AROB 2012, Beppu, Japan, 2012. PDF
8. A.L. Kulasekera, K.T.M.U. Hemapala and R.A.R.C. Gopura, "Dual layered multi agent system for load management during islanded operation of a microgrid", in Proc. The Fifth IASTED Asian Conference on Power and Energy Systems AsiaPES 2012, Phuket, Thailand, April, 2012.
9. K.T.M.U. Hemapala and A.L. Kulasekera, "Demand side management for micro grids through smart meters", in Proc. The Fifth IASTED Asian Conference on Power and Energy Systems, AsiaPES 2012, Phuket, Thailand, April, 2012.
10. H.P.G.R.N.Chamikara, K. T. M. U. Hemapala, M. N. S. Ariyasinghe, New load shedding scheme for reliability improvement of an existing transmission network: A Case study , 3rd International Conference on Instrumentation Control and Automation (ICA), Bali, Indonesia, August 28-30, 2013
11. M. N. S. Ariyasinghe, K. T. M. U. Hemapala, Distributed Autonomous Control Strategies for Microgrid Test-bed, 3rd International Conference on Instrumentation Control and Automation (ICA), Bali, Indonesia, August 28-30, 2013
12. D.S.V. Bandara, R.A.R.C. Gopura, K.T.M.U. Hemapala, Kazuo Kiguchi, A multi-DoF Anthropomorphic Transradial Prosthetic Arm, 2014 5th IEEE RAS & EMBS International Conference on Biomedical Robotics and Biomechatronics ,BioRob 2014, August 12-15, 2014.
13. HMN Dinushi,MHMS Kariapper, GD Porawagamage, PKH Rathnayaka, UP Srimal, KTMU Hemapala, Defining multi agent system for a reliable micro-grid, Moratuwa Engineering Research Conference (MERCon), 2015 , vol., no., pp.94,99, 7-8 April 2015.
14. H. W. D. Hettiarachchi, D. D. J. P. Dangalla, C. D. Yapa, D. J. M. G. D. Jayamaha and K. T. M. U. Hemapala, "Controlling of the micro grid test bed with an automated distribution system," 2016 2nd International Conference on Advances in Electrical, Electronics, Information, Communication and Bio-Informatics (AEEICB), Chennai, 2016, pp. 241-245.
15. R. M. J. Rathnayaka and K. Hemapala, "Developing of scalable SCADA in view of acquiring multi-protocol smart grid devices," 2016 2nd International Conference on Advances in Electrical, Electronics, Information, Communication and Bio-Informatics (AEEICB), Chennai, 2016, pp. 182-187
16. N. G. I. S. Samarawickrama, K. T. M. U. Hemapala and A. G. B. P. Jayasekara, "Support Vector Machine Regression for forecasting electricity demand for large commercial buildings by using kernel parameter and storage effect," 2016 Moratuwa Engineering Research Conference (MERCon), Moratuwa, 2016, pp. 162-167
17. P. D. M. Chandrasekara, W. L. D. M. Chathurangi, I. N. Kodikara, N. C. T. Kumara and K. T. M. U. Hemapala, "Agent based building automation and control system for moderate scale buildings," 2016 International Conference on Electrical, Electronics, and Optimization Techniques (ICEEOT), Chennai, 2016, pp. 2881-2886.
18. Pasan Gunawardena, Geeth Bodhinayake and Udayanga Hemapala, “Development of a Multi Agent System for Voltage and Outage Monitoring”, AEEICB 2017, Chennai

19. KTMU Hemapala, Dilum Hettiarachchi, Heshan Hasaranga, R.D.T.M.Hemarathne, M.D.C.P.K. Mahawithana and M.G.A.B.N Sandanuwan A Fuzzy Logic based Battery SOC Level Control Strategy for Smart Micro Grid, AEEICB 2017, Chennai
20. Mahesh Dunuweera, Gayashan Dasun, Udayanga Hemapala and Narendra De Silva, "Techno Economic Analysis, Design And Implementation of a Suitable Communication Method For Remote Meter Reading using Zigbee", AEEICB 2017, Chennai
21. T.P.G.T.A. Priyankara, M.J.L.R. Fernando, I.A.K.Sandeepa, N.M.K.D Bandara,H.W.D.Hettiarachchi, K.T.M.U.Hemapala, Design, Simulation and Implementation of a UPFC (Unified Power Flow Controller) for Transmission Line Model, i-PACT 2017, Chennai
22. K.M. G. Y. Sewwandi, T. S. S. Senarathna, K. A. H.Lakshika, V. Y. Wong, K. T. M. U. Hemapala, J. R.Lucas, G. D. Porawagamage, Wind Turbine Emulator for a Microgrid, , i-PACT 2017, Chennai
23. M.K.G. Lakshitha, K.D.M. Jayawardhana, M.A.K.S. Boralessa, W.G.R.W. Rohitha, K.T.M.U. Hemapala, JR Lucas, Narendra De Silva, G.D. Porawagamage Operation of a Grid Connected Microgrid with a Variable Load Bus and a Diesel Generator Set, , i-PACT 2017, Chennai
24. H.V.V.Priyadarshana, W.K.I. Madushanaka , L.L.L. Anuruddha, G.T.Chathura,H.W.D. Hettiarachchi, K.T.M.U. Hemapala, Multi-agent Controlled Building Management System, , i-PACT 2017, Chennai
25. H.W.D. Hettiarachchi, K.T.M.U. Hemapala, A.G.B.P Jayasekara, A Fuzzy Logic based Power Management System for an integrated AC-DC Hybrid Microgrid Model, MERCON 2017
26. K.T.M.U. Hemapala, M.S. Dayarathne, O.V.Gnana Swathika, Optimized Cost Enabled Rural Electrification System, MERCON 2017
27. Optimized Overcurrent Relay Coordination in a Microgrid SystemRecent Advances in Computer Science and Communications, 2019-12-04 | journal-article
28. Benchmarking medium voltage feeders using data envelopment analysis: A case study, Telkomnika (Telecommunication Computing Electronics and Control), 2019 | journal-article
29. Disturbance Analysis and Implementation of High Voltage Gain Non-Isolated DC-DC Converter for Renewable Applications, IOP Conference Series: Materials Science and Engineering, 2019 | conference-paper
30. Estimation of state of charge for lithium-ion batteries - A Review AIMS Energy, 2019 | journal-article
31. IOT Based Energy Management System for Standalone PV Systems, Journal of Electrical Engineering and Technology, 2019 | journal-article
32. Low Voltage DC Microgrid Control Strategy Using Single Phase DQ Transformation, MERCon 2019 - Proceedings, 5th International Multidisciplinary Moratuwa Engineering Research Conference, 2019 | conference-paper
33. Review of adaptive protection methods for microgridsAIMS Energy, 2019 | journal-article
34. Review of Applications of Fuzzy Logic in Multi-Agent-Based Control System of AC-DC Hybrid MicrogridIEEE Access, 2019 | journal-article
35. Techno-economic analysis of on-site hydrogen production and storage system with solar PV for telecom sites in Sri Lanka2018 8th International Conference on Power and Energy Systems, ICPES 2018, 2019 | conference-paper
36. A shortest path planning algorithm for PSO base firefighting robotsProceedings of the 4th IEEE International Conference on Advances in Electrical and Electronics, Information, Communication and Bio-Informatics, AEEICB 2018, 2018 | conference-paper
37. A study on reactive power sharing and voltage variation in an inverter dominated islanded microgridProceedings of the 4th IEEE International Conference on Advances in Electrical and

Electronics, Information, Communication and Bio-Informatics, AEEICB 2018, 2018 | conference-paper

38. An Adaptive Protection Scheme for Small Scale Microgrids Based on Fault Current Level2018 2nd International Conference On Electrical Engineering, EECon 2018, 2018 | conference-paper
39. Defining of Normalized Load Profile Curves for Domestic Customer Groups to Estimate Feeder Power Loss2018 3rd International Conference on Information Technology Research, ICITR 2018, 2018 | conference-paper
40. Designing an energy monitoring, analysing and solution providing system for energy auditingProceedings of the 4th IEEE International Conference on Advances in Electrical and Electronics, Information, Communication and Bio-Informatics, AEEICB 2018, 2018 | conference-paper
41. DQ Transform Based Current Controller for Single-Phase Grid Connected Inverter2018 2nd International Conference On Electrical Engineering, EECon 2018, 2018 | conference-paper
42. Droop based voltage and frequency controller for an islanded AC micro-gridProceedings of the 4th IEEE International Conference on Advances in Electrical and Electronics, Information, Communication and Bio-Informatics, AEEICB 2018, 2018 | conference-paper
43. Long term annual electricity demand forecasting in Sri Lanka by artificial neural networksAsia-Pacific Power and Energy Engineering Conference, APPEEC, 2018 | conference-paper
44. Message from the Program Chair2018 2nd International Conference On Electrical Engineering, EECon 2018, 2018 | conference-paper
45. Simulation Performance of Grid Connected Z-Source Solar Inverter with Incremental Conductance MPPT2018 2nd International Conference On Electrical Engineering, EECon 2018
46. State of charge based droop controlling of voltage for islanded DC microgrid, Proceedings of the 4th IEEE International Conference on Advances in Electrical and Electronics, Information, Communication and Bio-Informatics, AEEICB 2018, 2018 | conference-paper
47. Techno-economic feasibility of lighting protection of overhead transmission line with multi-chamber insulator arrestors, Development Engineering, 2018 | journal-article
48. Weerakoon, W. M. S. H., et al. "Low Voltage DC Microgrid Control Strategy Using Single Phase DQ Transformation." 2019 Moratuwa Engineering Research Conference (MERCon). IEEE, 2019.
49. Hemapala, K. T. M. U., K. V. R. Perera, and O. V. Gnana Swathika. "Performance Evaluation of Power Distribution Sector of Srilanka based on Data Envelopment Analysis." Available at SSRN 3350953 (2019).
50. Optimized overcurrent relay coordination in a microgrid system Swathika, Odiyur VG; Hemapala, Udayanga; Recent Advances in Computer Science and Communications (Formerly: Recent Patents on Computer Science), 13, 6, 1239-1250, 2020
51. IOT-based adaptive protection of microgrid; Swathika, OV Gnana; Hemapala, KTMU; Proceedings of International Conference on Artificial Intelligence, Smart Grid and Smart City Applications: AISGSC 2019, 123-130, 2020
52. Centralized adaptive directional overcurrent protection system for a microgrid with relay coordination Padamathilaka, PPR; Ekanayake, EMAGNC; Senarathna, TSS; Dulmini, AGN; Prabash, APR; Hemapala, KTMU; 2020 IEEE 9th Power India International Conference (PIICON) 06-Jan 2020
53. Multi agent based energy management system for microgrids Perera, MK; Disanayaka, RUI; Kumara, EMCS; Walisundara, WMCSB; Priyadarshana, HVV; Ekanayake, EMAGNC; Hemapala, KTMU; 2020 IEEE 9th Power India International Conference (PIICON), 2020
54. A survey on hybrid renewable energy systems for microgrid application Bandara, Anushika; Hemapala, KTMU; Ekanayake, Nalin C; 2020 IEEE 9th Power India International Conference (PIICON), 2020
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68. IoT based building energy management system Hettiarachchi, DG; Jaward, GMA; Tharaka, VPV; Jeewandara, JMDS; Hemapala, KTMU; 2021 3rd International Conference on Electrical Engineering (EECon); 69-73; 2021
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70. Energy efficient outdoor lighting system design: Case study of IT campus; Swathika, OV Gnana; Karthikeyan, K; Subramaniam, Umashankar; Hemapala, KTM Udayanga; Bhaskar, Sagar Mahajan; IOP Conference Series: Earth and Environmental Science; 1026; 2022
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73. Active and passive based hybrid cell balancing approach to series connected lithium-ion battery pack Ekanayake, EMAGNC; Hemapala, KTMU; Jayathunga, Upuli; 2022 Moratuwa Engineering Research Conference (MERCon); 2022
74. Non-Intrusive Load Monitoring Using Denoising Autoencoder Neural Networks Sewwandi, AHM; Anthony, CND; Disanayaka, DMAM; Boralessa, MAKS; Hemapala, KTMU; 2022 IEEE 10th Region 10 Humanitarian Technology Conference (R10-HTC); 408-413; 2022
75. Techno-Economic Analysis on Grid Connected Solar Photovoltaic System with Battery Energy Storage for Domestic and Bulk Customers in Sri Lanka Swathika, OV Gnana; Praveesh, Y; Thuduwage, TDAV; Weesinghe, WMP; Hemapala, KTMU; Jeewandara, JMDS; 2022 IEEE 2nd

International Symposium on Sustainable Energy, Signal Processing and Cyber Security (iSSSC); 2022

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77. Solar Photovoltaic Energy Forecasting Using Improved Ensemble Method For Micro-grid Energy Management Siriwardana, Sehani; Nishshanka, Thakshila; Peiris, Adeesha; Boralessa, MAKS; Hemapala, KTMU; Saravanan, V; 2022 IEEE 2nd International Symposium on Sustainable Energy, Signal Processing and Cyber Security (iSSSC); 2022
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79. Reconfigurable solar photovoltaic systems: a review Lakshika, KAH; Boralessa, MAKS; Wadduwage, DP; Saravanan, V; Hemapala, KTMU; TIDEE: TERI Information Digest on Energy and Environment; 332-332; 2021
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82. Introduction of a New Tariff Structure for Electric Vehicle Owners in Sri Lanka to Promote Demand Response; Jeewandara, JMDS; Disanayaka, RUI; Hemapala, KTMU; Wijayapala, WDAS; Balahewa, ID; Melagoda, AU; 2023 International Conference for Advancement in Technology (ICONAT) ; 2023
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84. An Approach of Cable Sheath Bonding for Critical Airport Application Swathika, OV Gnana; Karthikeyan, Aayush; Karthikeyan, K; Hemapala, KTMU; Manikandan, T; 2023 International Conference on Computer, Electronics & Electrical Engineering & their Applications (IC2E3); 2023
85. Impact of Battery Energy Storage System for an Energy Market within an LV Distribution Feeder; Hasaranga, NS; Chandrasena, KMCK; Induwara, MAC; Padmaranga, WAP; Hemapala, KTMU; Swathika, OV Gnana; 2023 Second International Conference on Trends in Electrical, Electronics, and Computer Engineering (TEECCON); 87-92; 2023
86. Coordination of PV Smart Inverters for Grid Voltage Regulation Latani, T; Parameswaran, G; Priyanthan, G; Hemapala, KTMU; 2023 Moratuwa Engineering Research Conference (MERCon);84-89; 2023
87. Multi agent system based microgrids for distribution network; Hemapala, KTMU; Wijayapala, WDAS; Perera, MK; 2018
88. Mitigating Intermittency in Solar Power Plants through Integrated Storage Senarathna, Nadun T; Somathilaka, Sachini P; Hemapala, Ktmu; Banda, Hm Wijekoon; 2023 2nd International Conference on Automation, Computing and Renewable Systems (ICACRS); 18-25; 2023
89. Practical Applicability of Simulations in Clustered Microgrid System design: A Comparative Analysis with Real World Data De Silva, Raveen Sanjaya; Perera, Reshan H; Kurukulasooirya, Nayanajith; Hemapala, KTMU; Swathika, OV Gnana; 2023 International Conference on Energy, Materials and Communication Engineering (ICEMCE); 2023
90. Tuning Governor Settings to Minimize Unwanted Mechanical Movements amid Renewable Energy Integration: A Case Study of the Sri Lankan Power System; Somathilaka, Sachini P; Senarathna, Nadun T; Hemapala, KTMU; Banda, HM Wijekoon; 2023 10th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON); 10; 1163-1169; 2023
91. Optimal BESS placement and sizing for frequency control in islanded microgrids using Non-linear Shepherd battery model De Silva, Raveen Sanjaya; Silva, Hiruni Prabodya; Gunathilake, Shehan;

Meegoda, MSS; Perera, Reshan H; Hemapala, KTMU; 2023 IEEE 2nd Industrial Electronics Society Annual On-Line Conference (ONCON); 2023

92. Resilient and Sustainable Microgrid Controller Development with Real Time SimulationsWasitha, MA Sarith; Hemapala, KTMU; 2024 7th International Conference on Development in Renewable Energy Technology (ICDRET) ; 2024
93. Basic Datalogger for SAPV system Kumar, Manish; Tiwari, Kshitij; Jha, Anil Kumar; Shankar, Ayush; Verma, Aditi; Hemapala, KTM Udayanga; Swathika, OV Gnana; 2024 International Research Conference on Smart Computing and Systems Engineering (SCSE); 2024

Local symposiums

1. J. Sanjeewa, N. Sandaruwan, H. Sandaruwan, L samarakoon, U Hemapala, “Robotics and Agricultural Technology for Landmines removal in Sri Lanka”, 16th Annual Symposium, ERU, University of Moratuwa, 2010, pp.154-156
2. WADSL Wettasinghe, HR Widisinghe, PDDS Wijayasekara, SRMDTS Wijesekara, KTMU Hemapala, “Demand Side Management for Micro Grids through Smart Meters”, 17th Annual Symposium, ERU, University of Moratuwa, 2011, pp.56-58
3. KD Rajapakshe, K Suluxon, AMCK Perera, RARC Gopura, SWHMTD Laltharathne, KTMU Hemapala, “Develeopment of a 2 DOF Lower Extremity Exoskeleton Robot”, 17th Annual Symposium, ERU, University of Moratuwa, 2011, pp.64-67
4. MLDR Karunarathna, HACH Jayawardana, IDG Jayawardana, KTMU Hemapala, 17th Annual Symposium, ERU, University of Moratuwa, 2011, pp.78-80
5. BMAN Balasooriya, KTMU Hemapala, “Energy efficiency and envorenmetal impacts on an organization”,Annual Technical Conference , IET young professionals section, 2011
6. V V Muthugala, NPDS Pathirana, WHKP Nanayakkara, NPDCD Nanayakkara and KTMU Hemapala, Design and Implementation of a Laboratory-scale Microgrid, 19th ERU Research Symposium, November 26, 2013, The University of Moratuwa, Sri Lanka, Pages 21-25 PDF
7. AL. Kulasekera , K.T.M.U. Hemapala and R.A.R.C. Gopura, "Multi Agent based Islanding and Load Management System for Microgrids" pp. 306-312, Transactions of Annual Sessions of Institution of Engineer Sri Lanka 2013, vol. 1, Part B
8. K.T.M.U. Hemapala, H.M. Wijekoon and L.K. Dissanayake, "Identification of the Optimum Protection Co-ordination In Medium Voltage Distribution System Of Sri Lanka" pp.471 - 478, Transactions of Annual Sessions of Institution of Engineer Sri Lanka 2015, vol. 1, Part B
9. Panagoda, K.T.M.U. Hemapala and N. De Silva, “Distribution System Fault Localization, Fault Restoration and Network Reconfiguration using Multi Agent Based System”, Annual Sessions of IESL, pp. 135-140, 2016
10. D.M.D.K. Dissanayaka, K.T.M.U. Hemapala and W.D.A.S. Rodrigo, “Fault Management Algorithm for Voltage Feeder Automation in Electricity Distribution”, Annual Sessions of IESL, pp. 119-126 , 2016
11. K.T.M.U. Hemapala and D.L.P. Munasinghe, “Capacitor Switching Transient Analysis on a Transmission Grid Substation”, Annual Sessions of IESL, pp. 127-134, 2016

6. Awards Received

- Award of Excellence, Outstanding Research Performance, University of Moratuwa, 2012
- Award of Excellence, Outstanding Research Performance, With Distinction, University of Moratuwa 2013, 2014, 2015, 2016, 2017,2018, 2019, 2020, 2021,2022,2023
- Best Paper Award for the 3rd International Conference on Instrumentation, control and Automation, Bali, Indonesia, 2013.
- Technology Awards of Excellence, 2017, National Science Foundation, Sri Lanka
- Best Poster Award, 2019, 5th Moratuwa Engineering Research Conference

7. Roles in Professional Societies/Bodies

- Council Member, Engineering Council, Sri Lanka- Since 2022 October
- Council Member: Institute of Engineers Sri Lanka (IESL)
    - 2018-2019 Session (Elected to represent below 40 Years members)
    - 2019-2020 Session (Elected to represent below 40 Years members)
    - 2021-2022 Session (Elected as a Secretary)
    - 2022-2023 Session (Elected to represent Above 40 Years members)
    - 2023-2024 Session (Elected to represent Above 40 Years members)
- Council Member: Sri Lanka Institute of Advanced Technological Institute (SLIATE), Ministry of Higher Education- since 2020
- Member of the Education Standing Committee: Institute of Engineers Sri Lanka (IESL), Since 2018
- Member of the Accreditation Board: Institute of Engineers Sri Lanka (IESL), Since 2019
- Treasurer, IEEE Sri Lanka Section
- Chairman, IEEE Power and Energy Society Sri Lanka Section Chapter, 2016,17
- Student Advisor, IEEE Power Electronic Chapter, University of Moratuwa, 2020

I declare that all information presented above is true and accurate to the best of my knowledge.

Prof. KTMU Hemapala **Date: 28/08/2024**
Dean
Faculty of Engineering
University of Moratuwa