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1. SUMMARY

Assistant Professor of Electrical Power Engineering in the School of Engineering and Technology, University of Washington, Tacoma from January 2019. Previously, Assistant Professor at the school of Electrical and Electronics Engineering, Newcastle University (United Kingdom) in Singapore for five years and a Postdoctoral Researcher at University of Strathclyde, United Kingdom for a year; has been a Visiting Lecturer at the department of Electrical and Electronics Engineering, University of Jaffna (Sri Lanka).

Earned PhD in Electrical Engineering from National University of Singapore and BSc (First Class Honors) from University of Peradeniya. My PhD dissertation is on Multi-Agent System for Control and Management of Distributed Power Systems. Main research areas of interest include smart grid, micro grid, renewable energy resources, and the applications of computational intelligent techniques & intelligent multi-agent system for development of smart grid and modern power systems; has published more than 100 papers in international refereed journals, book chapters and conference papers. Google citation is 4649. Currently, I serve as an associate editor of IET Smart Grid journal.

UK IET Chartered Engineer (CEng), Senior Member of the Institute of Electrical and Electronics Engineers (IEEE), Member of Institution of Engineering and Technology (IET), and Associate Fellow of the Higher Education Academy (HEA), United Kingdom. Has received several awards and scholarships including the first prize award in Siemens Smart Grid Innovation Contest, 2011 and Newcastle Teaching Award, 2016.

2. PERSONAL INFORMATION

- Date of Birth March 30, 1979
- Residence Status USA Green Card, Singaporean
- Marital Status Married
- Gender Male
- Languages English, Tamil, and Sinhala

3. EDUCATION

PhD in Electrical Engineering, Department of Electrical and Computer Engineering, National University of Singapore, Singapore, From August 2007 to August 2012.

Dissertation Title: Multi-Agent System for Control and Management of Distributed Power Systems.

Advisor: Professor Dipti Srinivasan, PhD

BSc (First Class Honours) in Electrical and Electronic Engineering, Department of Electrical and Electronic Engineering, University of Peradeniya, Sri Lanka, From January 2001 to February 2005.

Specialized in Electrical Power Engineering

Final Year Project: Finite Element Mesh Generation using Commercial CAD Packages
Advisor: Professor S. Ratnajeevan H. Hoole, PhD

4. ACADEMIC EXPERIENCE

Faculty of Electrical Power Engineering, School of Engineering and Technology, University of Washington, United States of America, From January 2019 to Present.

Administration Roles:

- Direct Admission Committee Member, 2022 to Present
- SET Teaching Award Committee, 2022
- Course Lead for the Following Courses: TECE 533 - Renewable Energy Systems, TECE 531 - Advanced Power System Operation, TEE 431 - Electric Power Engineering and Labs, TCES 215 - Electrical Circuits I and Labs, TCES 390 - CES/EE Seminars, and TEE 315 - Electrical Circuits II and Labs

Curriculum Development:

- Key Member of Course Development Team: Developing a New Masters Degree Programme in Electrical and Computer Engineering and New Courses for the Bachelors Degree in Electrical Engineering

Teaching, Labs and Examinations:

- Lecturer for the Following Courses: TECE 533 - Renewable Energy Systems, TECE 531 - Advanced Power System Operation, TEE 431 - Electric Power Engineering and Labs, TCES 215 - Electrical Circuits I and Labs, TCES 390 - CES/EE Seminars, and TEE 315 - Electrical Circuits II and Labs

Research:

- TEE 498/499 - Directed Reading/Research and TEE 480/481/482 – Senior Project I/II/III: Supervise Research Projects on Design, Development and Operation of Smart Grid and Future Power Systems: Two Undergraduate Research Projects

Faculty Advisor:

- TEE 497 – Internship: Faculty Advisor for Summer Internships

Visiting Lecturer, School of Electrical and Electronics Engineering, Newcastle University (United Kingdom) in Singapore, From January 2019 to June 2019.

Research:

- Continued the Supervisory Role for Research Projects on Design, Development and Operation of Smart Grid and Future Power Systems

Assistant Professor of Electrical Power Engineering, School of Electrical and Electronics Engineering, Newcastle University (United Kingdom) in Singapore, From January 2014 to December 2018.

Administration Roles:

- Degree Programme Director (DPD): Masters Programme on Electrical Power Engineering, Singapore
- Research Leader: School of Electrical and Electronics Engineering, Singapore

- Member of Industrial Advisory Board (IAB)
- Member of Doctoral Training Centre (DTC) Working Group
- Technical Team Member of Newcastle Research and Innovation Institute
- Member of Operational Health & Safety Committee
- Module Leader for Five Modules: EPE8201 Advanced Power System Analysis and EPE8205 Power System Operation and Management, EEE2202 Digital Electronics, EEE3203 Generation, Transmission and Distribution, and EEE3204 Renewable Energy Systems

Curriculum Development:

- Key Member in the Curriculum Development for the Masters Degree Programme on Electrical Power Engineering in Singapore
- Developed Four Masters Level Modules: EPE8201 Advanced Power System Analysis, EPE8204 Renewable Energy Technologies, EPE8205 Power System Operation and Management and EPE8207 Smart Grids and Applications of Computational Intelligence
- Developed Four Undergraduate Level Modules: EPE2201 Electrical Systems, EPE2202 Digital Electronics, EPE3203 Generation, Transmission and Distribution and EPE3204 Renewable Energy Systems

Teaching and Labs:

- Lecturer for Two Postgraduate Modules: EPE8201 Advanced Power System Analysis and EPE8205 Power System Operation and Management
- Lecturer for Four Undergraduate Modules: EEE2201 Electrical Systems, EEE2202 Digital Electronics, EEE3203 Generation, Transmission and Distribution and EEE3204 Renewable Energy Systems
- Supervised and Conducted Laboratory Experiments on Two Stage-2 (Junior) Modules: EEE2202 Digital Electronics and EEE2201 Electrical Systems

Research:

- Supervise Research Projects on Design, Development and Operation of Smart Grid and Future Power Systems: Ten PhD, Two MPhil, One MSc and Fourty Five Undergraduate Final Year Projects

Examinations:

- Dissertation Committee Member for PhD - Five Students
- Independent Chair for PhD - One Student
- Examiner UG Final Year Projects – Eighty Four Students
- Chief Invigilator for Examination of Six Modules: EPE8201, EPE8205, EEE2201, EEE2202, EEE3203 and EEE3204
- Internal Moderator and Second Examiner for Two Modules: EEE2201 Electrical Systems and EEE2204 Random Signals and Processes

Mentorship:

- Personal Tutor for Ninety Eight UG, One MSc, Two MPhil and Ten PhD Students
- Mentor for One Early Career Academic

Visiting Lecturer, Department of Electrical and Electronics Engineering, University of Jaffna, Sri Lanka, From January 2017 to December 2018.

- Taught Three Modules (Online) : EC4030 Electric Power, EC9030 Electricity Generation from Renewable Energy Sources and EC9010 High Voltage Engineering

- Developed Teaching Materials and Set up Laboratory Experiments on the above Modules

Postdoctoral Researcher, Department of Electronics and Electrical Engineering, University of Strathclyde, United Kingdom, From September 2012 to September 2013.

Supervisor: Professor Stephen McArthur, PhD

Projects:

- "*The Autonomic Power System*" funded by Engineering and Physical Sciences Research Council (EPSRC) alongside substantial support from 9 industrial partners.
- Distributed Energy Resources Research Infrastructure (DERri)'s "*Joint Test Facility for Smart Energy Networks with Distributed Energy Resources (JaNDER)*", a collaborative research project under the European FP7 programme between 16 partners from 12 countries across the EU.

Teaching Assistant (Part-Time), Department of Electrical and Computer Engineering, National University of Singapore, Singapore, From August 2008 to December 2010.

- Taught Module: EG1108 Electrical Engineering

Research Scholar, Department of Electrical and Computer Engineering, National University of Singapore, Singapore, From August 2007 to August 2012.

Supervisor: Professor Dipti Srinivasan, PhD

Projects:

- IEDS (Intelligent Energy Distribution Systems)'s "*Modular Distributed Energy Resource Network (MODERN)*" funded by Science and Engineering Research Council of the Agency for Science, Technology and Research (A*Star).
- "*Computational Tools for Optimal Planning and Scheduling of Distributed Renewable Energy Sources*" funded by NRF (National Research Foundation).

Lecturer, Department of Electrical and Information Engineering, University of Ruhuna, Sri Lanka, From February 2006 to September 2006.

- Taught 2 Modules: EE 5304 Power Electronics and EE 4302 Digital Electronics
- Developed Teaching Materials for the Several Modules together with the Senior Lecturers
- Set up Laboratory Experiments on Electronics and Telecommunications

Instructor, Department of Electrical and Electronics Engineering, University of Peradeniya, Sri Lanka, From March 2005 to December 2005.

- Conducted Laboratory Experiments on Power Systems and Control Systems
- Set up Laboratory Experiments on Control Systems
- Teaching Assistant for Three Modules: EE 352 Automatic Control, EE 402 Advanced Control Systems and EE 355 Applied Electromagnetic

5. INDUSTRIAL EXPERIENCE

Electrical Consultant (Project-Based Contract), YHW LLP - Electrical Consultant Company, Singapore, From January 2014 to December 2018.

- Lead electrical consulting projects on integrating solutions for electrical power, oil and gas industries in Singapore, Singapore underground cable tunnel project and Changi airport terminal 5 project.
- Supervisors: Mr. Kumarasamy Yathunathan, PE and Mr. Wong Soon Chyang Dennis, PE

Electrical Engineer, J. M. Pang & Seah (Pte) Ltd - Electrical Consultant Company, Singapore, From October 2006 to July 2007.

- Assisting for consulting projects for electrical power, oil and gas industries in Singapore.
- Worked on Etap Power Station and SKM Power* Tool software for designing new power systems and adding components in existing power systems.
- Carried out and analysed power system studies such as load flow studies, short circuit studies, relay coordination studies, motor starting studies, harmonic studies and transient stability studies.
- Provided design support for a Co-Gen plant project of Natural Fuel Ltd, Singapore.
- Designed a new motor reacceleration scheme using Etap software for Shell Pte Ltd, Singapore.
- Used IEC/ IEEE standards, Singapore Code of Practice, PG handbook, EMA metering code and codes for application engineering.
- Conducted safety training for technicians and workers.
- Done partial discharge measurements and developed a new methodology for predicting the statuses of high voltage equipments using a statistical analysis.
- Supervisor: Mr. Lee Wai Meng, PE

Engineering Trainee, Suntel (Pvt) Ltd, Sri Lanka, 2003.

- Took a part in the implementation of 10-digit telephone number project.
- Installed and maintained Airspan, DRA 1900, RAS 1000 and SR 500-TDMA for point to multipoint and point to point microwave transmission with the technical staff.
- Participated in training programs of Ericsson's DRA 1900, RAS 1000, wireless systems and AXE 10 switching.

Engineering Trainee, Elsuma (Pvt) Ltd, Sri Lanka, 2002.

- Designed and implemented a new "Surface Mounting Device (SMD) Counting Machine" successfully by using optical sensors, counter ICs and seven segment display.
- Supervised technical staff working in in-circuit test, function test, burning test and assembling lines.

6. PUBLICATIONS

Publications includes 29 Journal Papers, 04 Book Chapters, 71 Conference Papers, and 26 Workshop Presentations and Other Publications.

Google Scholar Citations: 4649, h-index: 28 and i10-index: 63.

Journal Papers

- [1] T. T. Teo, **T. Logenthiran**, W. L. Woo and K. Abidi, "Control and Management of Energy Storage System in Grid-Connected Microgrid using NSGA-II Tuned Fuzzy Logic," in *IET Smart Grid*, (Submitted)
- [2] M. R. B. M. Saifuddin, **T. Logenthiran**, R.T Naayagi and W. L. Woo, "HVDC-based Aggerated Tidal Stream Turbines using novel Electronic Drive Model & Control, in *IEEE Transactions on Energy Conversion*. (Submitted)
- [3] Y. Tang, S. Zhao, C. W. Ten, K. Zhang and **T. Logenthiran**, "Establishment of Enhanced Load Modeling by Correlating with Occupancy Information," in *IEEE Transactions on Smart Grid*, vol. 11, no. 2, pp. 1702-1713, March 2020. <https://doi.org/10.1109/TSG.2019.2942581>
- [4] Y. T. Quek, W. L. Woo and **T. Logenthiran**, "Load Disaggregation using 1-Directional Convolutional Stacked Long Short-Term Memory Recurrent Neural Network," in *IEEE Systems Journal*, vol. 14, no. 1, pp. 1395-1404, March 2020. <https://doi.org/10.1109/JSYST.2019.2919668>

- [5] Y. T. Quek, W. L. Woo and **T. Logenthiran**, "IoT Load Classification and Anomaly Warning in ELV DC Pico-grids using Hierarchical Enhanced k-Nearest Neighbors," in *IEEE Journal of Internet of Things*, vol. 7, no. 2, pp. 863-873, February 2020. <https://doi.org/10.1109/JIOT.2019.2945425>
- [6] M. R. B. M. Saifuddin, **T. Logenthiran**, R. T. Naayagi and W. L. Woo, "A Nano-Biased Energy Management Using Reinforced Learning Multi-Agent on Layered Coalition Model: Consumer Sovereignty," in *IEEE Access*, vol. 7, pp. 52542-52564, April 2019. <https://doi.org/10.1109/ACCESS.2019.2911543>
- [7] W. Li, **T. Logenthiran**, V. Phan and W. L. Woo, "A Novel Smart Energy Theft System (SETS) for IoT based Smart Home," in *IEEE Internet of Things Journal*, vol. 6, no. 3, pp. 5531-5539, June 2019. <https://doi.org/10.1109/JIOT.2019.2903281>
- [8] W. Li, C. H. Ng, **T. Logenthiran**, V. T. Phan and W. L. Woo, "Smart Grid Distribution Management System (SGDMS) for Optimised Electricity Bills," *Journal of Power and Energy Engineering*, vol. 6, no. 8, pp. 49-62, August 2018. <https://doi.org/10.4236/jpee.2018.68003>
- [9] B. Vu, M. Dahidah, V. Pickert, V. T. Phan and **T. Logenthiran**, "Multiple Output Inductive Charger for Electric Vehicles," *IEEE Transactions on Power Electronics*, vol. 34, no. 8, pp. 7350-7368, August 2018. <https://doi.org/10.1109/TPEL.2018.2882945>
- [10] T. T. Teo, **T. Logenthiran**, W. L. Woo and K. Abidi, "Intelligent Controller for Energy Storage System in Grid-Connected Microgrid," in *IEEE Transactions on Systems, Man, and Cybernetics: Systems*. <https://doi.org/10.1109/TSMC.2018.2881458>
- [11] W. Li, **T. Logenthiran** and W. L. Woo, "Multi-GRU Prediction System for Electricity Generation's Planning and Operation," in *IET Generation, Transmission & Distribution*, vol. 13, no. 9, pp.1630-1637, May 2019. <https://doi.org/10.1049/iet-gtd.2018.6081>
- [12] T. T. Teo, **T. Logenthiran**, W. L. Woo and K. Abidi, "Advanced control strategy for an energy storage system in a grid-connected microgrid with renewable energy generation," in *IET Smart Grid*, vol. 1, no. 3, pp. 96-103, 10 2018. <https://doi.org/10.1049/iet-stg.2018.0024>
- [13] M. R. B. M. Saifuddin, **T. Logenthiran**, R. T. Naayagi and W. L. Woo, "Apprehending Fault Crises for an Autogenous Nanogrid System: Sustainable Buildings," in *IEEE Systems Journal*. <https://doi.org/10.1109/JSYST.2018.2853078>
- [14] W. Li, **T. Logenthiran**, V. Phan and W. L. Woo, "Implemented IoT-Based Self-Learning Home Management System (SHMS) for Singapore," in *IEEE Internet of Things Journal*, vol. 5, no. 3, pp. 2212-2219, June 2018. <https://doi.org/10.1109/JIOT.2018.2828144>
- [15] W. Li, **T. Logenthiran**, V. T. Phan and W. L. Woo, "Housing Development Building Management System (HDBMS)," in *Transactions on Environment and Electrical Engineering*, vol. 2, no. 2, 2017. <http://dx.doi.org/10.22149/tee.v2i2.113>
- [16] Y. T. Quek, W. L. Woo and **T. Logenthiran**, "Smart Sensing of Loads in an Extra Low Voltage DC Pico-Grid Using Machine Learning Techniques," in *IEEE Sensors Journal*, vol. 17, no. 23, pp. 7775-7783, 1 Dec.1, 2017. <https://doi.org/10.1109/JSEN.2017.2723925>
- [17] Y. T. Quek, W. L. Woo, and **T. Logenthiran**, "A Very Short-Term Energy Forecasting Technique for Small Scale Photovoltaic Systems using k-Nearest Neighbour Algorithm," in *Journal of Engineering Technology*, vol. 4 no. 3, 2017. ISSN 2251-371X. <http://dl6.globalstf.org/index.php/jet/article/view/228>
- [18] V. T. Phan, D. Nguyen, Q. Trinh, C. Nguyen and **T. Logenthiran**, "Harmonics Rejection in Stand-Alone Doubly-Fed Induction Generators with Nonlinear Loads," in *IEEE Transactions on Energy Conversion*, vol. 31, no. 2, pp. 815-817, June 2016. <https://doi.org/10.1109/TEC.2016.2521331>
- [19] V. T. Phan, **T. Logenthiran**, W. L. Woo, D. Atkinson and V. Pickert, "Analysis and Compensation of Voltage Unbalance of a DFIG Using Predictive Rotor Current Control," in *International Journal of Electrical Power and Energy Systems*, vol.75, pp.8-18, February 2016. <https://doi.org/10.1016/j.ijepes.2015.08.020>

- [20] **T. Logenthiran**, R. T. Naayagi, W. L. Woo, V. Phan and K. Abidi, “Intelligent Control System for Microgrids Using Multiagent System,” in *IEEE Journal of Emerging and Selected Topics in Power Electronics*, vol. 3, no. 4, pp. 1036-1045, Dec. 2015. <https://doi.org/10.1109/JESTPE.2015.2443187>
- [21] **T. Logenthiran**, W.L. Woo and V. T. Phan, “Lagrangian relaxation hybrid with evolutionary algorithm for short-term generation scheduling,” in *International Journal of Electrical Power & Energy Systems*, vol. 64, pp.356-364, January 2015. <https://doi.org/10.1016/j.ijepes.2014.07.044>
- [22] **T. Logenthiran** and D. Srinivasan, “Multi-Agent System for Managing Distributed Energy Storage and Electrical Vehicles,” in *Intelligent Decision Technologies*, vol.9, no.2, pp.181-190, 2015. <https://doi.org/10.3233/IDT-140215>
- [23] **T. Logenthiran**, D. Srinivasan and K. M. W. Vanessa, “Demand side management of smart grid: Load shifting and incentives,” in *Journal of Renewable and Sustainable Energy*, vol. 6, no. 3, June 2014. <https://doi.org/10.1063/1.4885106>
- [24] D. Sharma, A. Trivedi, D. Srinivasan and **T. Logenthiran**, “Multi-Agent Modeling for Solving Profit Based Unit Commitment Problem,” in *Journal of Applied Soft Computing*, vol. 13, no. 8, pp.3751-3761, August 2013. <https://doi.org/10.1016/j.asoc.2013.04.001>
- [25] **T. Logenthiran** and D. Srinivasan, “Optimal selection and sizing of distributed energy resources for distributed power systems,” in *Journal of Renewable Sustainable Energy*, vol. 4, no. 5, October 2012. <https://doi.org/10.1063/1.4757618>
- [26] **T. Logenthiran**, D. Srinivasan and T. Z. Shun, “Demand Side Management in Smart Grid Using Heuristic Optimization,” in *IEEE Transactions on Smart Grid*, vol. 3, no. 3, pp. 1244-1252, September 2012. <https://doi.org/10.1109/TSG.2012.2195686>
- [27] **T. Logenthiran**, D. Srinivasan, A. M. Khambadkone and H. N. Aung, “Multiagent System for Real-Time Operation of a Microgrid in Real-Time Digital Simulator,” in *IEEE Transactions on Smart Grid*, vol. 3, no. 2, pp. 925-933, June 2012. <https://doi.org/10.1109/TSG.2012.2189028>
- [28] **T. Logenthiran** and D. Srinivasan, “Multi-Agent System for the Operation of an Integrated Microgrid,” in *Journal of Renewable and Sustainable Energy*, vol. 4, no. 1, February 2012. <https://doi.org/10.1063/1.3683528>
- [29] **T. Logenthiran**, D. Srinivasan and A. M. Khambadkone, “Multi-agent system for energy resource scheduling of integrated microgrids in a distributed system,” in *Electric Power Systems Research*, vol.81, no.1, pp.138-148, January 2011. <https://doi.org/10.1016/j.epsr.2010.07.019>

Book Chapters

- [1] **T. Logenthiran** and D. Srinivasan, “Computational Intelligence and Smart Grid,” in *Computational Intelligence*, H. Ishibuchi, et al., Rds., UNESCO EOLSS, 2012.
- [2] **T. Logenthiran** and D. Srinivasan, “Management of Distributed Energy Resources Using Intelligent Multi-Agent System,” in *Multi-Agent Applications with Evolutionary Computation and Biologically Inspired Technologies: Intelligent Techniques for Ubiquity and Optimization*, S.-H. Chen, et al., Eds., ed: IGI Global, 2010, pp. 208-231. <https://doi.org/DOI: 10.4018/978-1-60566-898-7.ch012>

Conference Papers

- [1] T. T. Teo, **T. Logenthiran**, W. L. Woo, K. Abidi, and E. Feng, “Multi-Objective Optimal Fuzzy Energy Management for Grid-Connected Microgrid,” IEEE PES General Meeting, 2020.
- [2] **T. Logenthiran**, “Energy Management System for Smart Homes on Internet of Things and Multi-Agent System,” *AEAB2019-Applied Energy Symposium: MIT A+B*, Massachusetts of Institute of Technology, Boston, United States, 22-24 May, 2019.
- [3] C. Chandraratne, **T. Logenthiran**, R. T. Naayagi and W. L. Woo, “Adaptive Overcurrent Protection for Power Systems with Distributed Generators,” *2018 8th International Conference on Power and Energy Systems (ICPES)*, Colombo, Sri Lanka, 21-22 Dec. 2018, pp. 98-103. <https://doi.org/10.1109/ICPESYS.2018.8626908>

- [4] W. P. Q. Tong, M. R. B. M. Saifuddin, **T. Logenthiran**, R.T. Naayagi, W. L. Woo and V. Phan, "High-Performance CLL Resonant Multi-Channel LED Driver for Lighting Application," *2018 IEEE 4th Southern Power Electronics Conference (SPEC)*, Singapore, Singapore, 10-13 Dec. 2018, pp. 1-6. <https://doi.org/10.1109/SPEC.2018.8635959>
- [5] W. P. Q. Tong, M. R. B. M. Saifuddin and **T. Logenthiran**, "A Comparative Analysis between Z-Source and Quasi-Z-Source Inverters for Boost Operation," *2018 Asian Conference on Energy, Power and Transportation Electrification (ACEPT)*, Singapore, 31 Oct.-01 Nov. 2018. pp. 1-6. <https://doi.org/10.1109/ACEPT.2018.8610771>
- [6] W. Li, **T. Logenthiran**, V. Phan and W. L. Woo, "Power Alert System using K-Means for Smart Home," *2018 IEEE Innovative Smart Grid Technologies - Asia (ISGT Asia)*, Singapore, 22-25 May 2018, pp. 722-727. <https://doi.org/10.1109/ISGT-Asia.2018.8467949>
- [7] W. Li, **T. Logenthiran**, V. Phan and W. L. Woo, "Proposed Optimised Smart Grid System using Multi-Agent System," *2018 IEEE Innovative Smart Grid Technologies - Asia (ISGT Asia)*, Singapore, 22-25 May 2018, pp. 528-533. <https://doi.org/10.1109/ISGT-Asia.2018.8467814>
- [8] W. P. Qi Tong, M. R. B. M. Saifuddin and **T. Logenthiran**, "Microgrid Management Encompassing AC & DC Renewable Generations with Energy Storages," *2018 IEEE Innovative Smart Grid Technologies - Asia (ISGT Asia)*, Singapore, 22-25 May 2018, pp. 1262-1267. <https://doi.org/10.1109/ISGT-Asia.2018.8467770>
- [9] C. J. Lei and **T. Logenthiran**, "Design and Implementation of a Portable Grid," *2018 IEEE Innovative Smart Grid Technologies - Asia (ISGT Asia)*, Singapore, 22-25 May 2018, pp. 1268-1272. <https://doi.org/10.1109/ISGT-Asia.2018.8467965>
- [10] W. P. Q. Tong, M. R. B. M. Saifuddin and **T. Logenthiran**, "Design and Simulation of a Piezoelectric Cantilever Beam for Mechanical Vibration Energy Harvesting," *2018 IEEE Innovative Smart Grid Technologies - Asia (ISGT Asia)*, Singapore, 22-25 May 2018, pp. 1245-1250. <https://doi.org/10.1109/ISGT-Asia.2018.8467796>
- [11] Y. T. Quek, W. L. Woo and **T. Logenthiran**, "Anomaly Warning and Fault Detection in DC Pico-grid with enhanced k-Nearest Neighbours Technique," *2018 IEEE Innovative Smart Grid Technologies - Asia (ISGT Asia)*, Singapore, 22-25 May 2018, pp. 728-733. <https://doi.org/10.1109/ISGT-Asia.2018.8467961>
- [12] T. T. Teo, **T. Logenthiran**, W. L. Woo and K. Abidi, "Near-Optimal Day-Ahead Scheduling of Energy Storage System in Grid-Connected Microgrid," *2018 IEEE Innovative Smart Grid Technologies - Asia (ISGT Asia)*, Singapore, 22-25 May 2018, pp. 1257-1261. <https://doi.org/10.1109/ISGT-Asia.2018.8467921>
- [13] V. De, T. T. Teo, W. L. Woo and **T. Logenthiran**, "Photovoltaic Power Forecasting using LSTM on Limited Dataset," *2018 IEEE Innovative Smart Grid Technologies - Asia (ISGT Asia)*, Singapore, 22-25 May 2018, pp. 710-715. <https://doi.org/10.1109/ISGT-Asia.2018.8467934>
- [14] C. Chandraratne, **T. Logenthiran**, R. T. Naayagi and W. L. Woo, "Overview of Adaptive Protection System for Modern Power Systems," *2018 IEEE Innovative Smart Grid Technologies - Asia (ISGT Asia)*, Singapore, 22-25 May 2018, pp. 1239-1244. <https://doi.org/10.1109/ISGT-Asia.2018.8467827>
- [15] D. H. G. A. E. Jayasinghe, K. R. S. Lankapriya, R. Valluvan, V. Cynthujah and **T. Logenthiran**, "Scenario Analysis of Future Load Profile of Sri Lanka Considering Demand Side Management Initiatives," *2018 IEEE Innovative Smart Grid Technologies - Asia (ISGT Asia)*, Singapore, 22-25 May 2018, pp. 1251-1256. <https://doi.org/10.1109/ISGT-Asia.2018.8467842>
- [16] C. Chen, V. Pickert, M. Al-Greer, C. Tsimenidis, X. Lu and **T. Logenthiran**, "Signal Sweeping Technique to Decouple the Influence of Junction Temperature and Bond Wire Lift-off in Condition Monitoring for Multichip IGBT Modules," *ECPE 10th International Conference on Integrated Power Electronics Systems (CIPS)*, Stuttgart, Germany, 20-22 March 2018, pp. 1-6.
- [17] C. Chandraratne, R. T. Naayagi and **T. Logenthiran**, "Smart grid protection through self-healing," *2017 IEEE Innovative Smart Grid Technologies - Asia (ISGT-Asia)*, Auckland, 4-7 December 2017, pp. 1-6. <https://doi.org/10.1109/ISGT-Asia.2017.8378429>

- [18] M. R. B. M. Saifuddin, S. Raj, **T. Logenthiran** and R. T. Naayagi, "Self-healing network instigated by distributed energy resources," *2017 IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC)*, Bangalore, India, 8-10 November 2017, pp. 1-6. <https://doi.org/10.1109/APPEEC.2017.8308959>
- [19] N. L. L. Guang, **T. Logenthiran** and K. Abidi, "Application of Internet of Things (IoT) for home energy management," *2017 IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC)*, Bangalore, India, 8-10 November 2017, pp. 1-6. <https://doi.org/10.1109/APPEEC.2017.8308962>
- [20] M. A. Bakar, **T. Logenthiran**, A. Sharma and V. Phan, "Optimal placement of DGs in a distributed power system with power system studies," *2017 IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC)*, Bangalore, India, 8-10 November 2017, pp. 1-6. <https://doi.org/10.1109/APPEEC.2017.8308961>
- [21] N. J. J. Kenneth and **T. Logenthiran**, "A novel concept for calculating electricity price for electrical vehicles," *2017 IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC)*, Bangalore, India, 8-10 November 2017, pp. 1-6. <https://doi.org/10.1109/APPEEC.2017.8308963>
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Workshop Presentations and Other Publications

- [1] W. Poh and **T. Logenthiran**, “A Novel Piezoelectric-Based Quasi-Z-Source Inverter for Nanogrid” *IEEE PES Workshop at Nanyang Technological University*, Singapore, 30 October, 2018.
- [2] M. R. B. M. Saifuddin and **T. Logenthiran**, “Integrating Distributed Renewable Technologies with Revolutionized Demand-Side Dominion Advancement: Consumers Sovereignty” *IEEE PES Workshop at Nanyang Technological University*, Singapore, 30 October, 2018.
- [3] T. T. Teo and **T. Logenthiran**, “Computational Intelligence Techniques for Energy Management of Storage System” *IEEE PES Workshop at Nanyang Technological University*, Singapore, 30 October, 2018.

- [4] T. T. Teo, **T. Logenthiran**, W. L. Woo, and K. Abidi, "Computational Intelligence in Power System Planning and Operation," Singapore International Robotics Expo, Singapore, 2-3 November, 2017.
- [5] S Surian Raj, **T. Logenthiran**, A. Sharma, and W. L. Woo "Self-Healing Smart Grid Networks," *Science is Great*, British High Commission Singapore, 12-13 June, 2017.
- [6] Y. T. Quek, W. L. Woo, and **T. Logenthiran**, "Using Digital Image Processing Techniques to "see" DC Grid," *Symposium on Emerging Topics in Smart and Sustainable Grids*, Singapore, 23 September, 2016.
- [7] M. R. B. M. Saifuddin, **T. Logenthiran**, N. Ramasamy, and C Su, "Non-Convex Economic Dispatch with Alternative Transmission Line Loss Management," *Symposium on Emerging Topics in Smart and Sustainable Grids*, Singapore, 23 September, 2016.
- [8] T. T. Teo, **T. Logenthiran**, W. L. Woo, and K. Abidi, "Fuzzy Control of Energy Storage System in Microgrid Operation," *Symposium on Emerging Topics in Smart and Sustainable Grids*, Singapore, 23 September, 2016.
- [9] W. Li, **T. Logenthiran**, V. T. Phan, and W. L. Woo, "Implementation of Demand Side Management of a Smart Home using Multi-Agent System," *Symposium on Emerging Topics in Smart and Sustainable Grids*, Singapore, 23 September, 2016.
- [10] L. J. L. Nicklaus, and **T. Logenthiran**, "*Frequency and Voltage control of a Microgrid*," *Symposium on Emerging Topics in Smart and Sustainable Grids*, Singapore, 23 September, 2016.
- [11] Y. T. Quek, W. L. Woo, and **T. Logenthiran**, "DC Appliances Classification and Identification," *Energy Market Authority (EMA)'s Energy Innovation*, Singapore, 03 June, 2016.
- [12] M. R. B. M. Saifuddin, **T. Logenthiran**, N. Ramasamy, and C Su, "Active Network Management (ANM)," *Energy Market Authority (EMA)'s Energy Innovation*, Singapore, 03 June, 2016.
- [13] T. T. Teo, **T. Logenthiran**, W. L. Woo, and K. Abidi, "Fuzzy Control of Energy Storage System in Microgrid Operation," *Energy Market Authority (EMA)'s Energy Innovation*, Singapore, 03 June, 2016.
- [14] W. Li, **T. Logenthiran**, V. T. Phan, and W. L. Woo, "Implementation of Demand Side Management of a Smart Home using Multi-Agent System," *Energy Market Authority (EMA)'s Energy Innovation*, Singapore, 03 June, 2016.
- [15] L. W. Kiong, and **T. Logenthiran**, "Developing a Smart Grid Game and Creating Smart Grid Awareness," *Energy Market Authority (EMA)'s Energy Innovation*, Singapore, 03 June, 2016.
- [16] L. J. L. Nicklaus, and **T. Logenthiran**, "*Frequency and Voltage control of a Microgrid*," *Energy Market Authority (EMA)'s Energy Innovation*, Singapore, 03 June, 2016.
- [17] T. Xiao Xuan, **T. Logenthiran**, K. Yathunathan, and P. Amirthan, "*Feasibility Studies for Connecting an Embedded Generator to an Existing Facility in Singapore*," *Energy Market Authority (EMA)'s Energy Innovation*, Singapore, 03 June, 2016.
- [18] T. T. Teo, and **T. Logenthiran**, "Forecasting of Photovoltaic Power using Extreme Learning Machine" *IEEE PES Workshop at Nanyang Polytechnic*, Singapore, 15 December, 2015.
- [19] W. Li, and **T. Logenthiran**, "Intelligent Multi-Agent System for Smart Home Energy Management" *IEEE PES Workshop at Nanyang Polytechnic*, Singapore, 15 December, 2015.
- [20] C. P. S. Chew, and **T. Logenthiran**, "SMART Centre of Excellence: A Tabletop Demonstration Kit" *IEEE PES Workshop at Nanyang Polytechnic*, Singapore, 15 December, 2015.
- [21] C. P. S. Chew, and **T. Logenthiran**, "Synergize @ SIT – NUIS," *Energy Market Authority (EMA)'s Energy Industry Forum*, Singapore, 11 June, 2015.
- [22] **T. Logenthiran**, and D. Srinivasan, "Multi-Agent System for Implementing Smart Grid Concepts in an Integrated Microgrid," *NUS ECE Graduate Student Symposium*, 12-13 May, 2011.
- [23] **T. Logenthiran**, and D. Srinivasan, "Multi-Agent System for Energy Resource Scheduling of an Integrated Microgrid," *IEEE PES Graduate Student Workshop*, Singapore, 19 October, 2010.
- [24] **T. Logenthiran**, and D. Srinivasan, "Multi-Agent System for Energy Resource Scheduling of a Distributed Power System," *IEEE PES Graduate Student Workshop*, Singapore, 17-18 September, 2009.

- [25] **T. Logenthiran**, and D. Srinivasan, "Multi-Agent Coordination/Management for DER in MicroGrid," *IEEE PES Graduate Student Workshop*, Singapore, 24 September, 2008.
- [26] S. R. H. Hoole, R. Sasikumar, and **T. Logenthiran**, "Finite element mesh generation using commercial CAD packages," *IEE-YMS Annual Technical Conference*, Sri Lanka, 28 August, 2004.

7. PROFESSIONAL ACTIVITIES

Professional Memberships

- Institute of Electrical and Electronic Engineers (IEEE) and Power and Energy Society (PES), United States of America, Senior Member, Since 2007
- Institution of Engineering and Technology (IET), United Kingdom, Member, Since 2007
- Higher Education Academy (HEA), United Kingdom, Associate Fellow, Since 2016
- Institution of Engineers Singapore (IES), Singapore, Member, Since 2007
- Institution of Engineers Sri Lanka (IESL), Sri Lanka, Member, Since 2006
- National University of Singapore, Singapore, Alumni Member, Since 2012
- University of Peradeniya, Sri Lanka, Alumni Member, Since 2005

Professional Roles

- Member of IEEE PES Seattle Chapter Advisory Board, From 2020
- Webmaster for IEEE PES Seattle Chapter, From 2020
- Publicity Chair and Technical Committee of International Conference on Design, Mechanical and Electrical Engineering (DMEE), 2020, 2021, 2022
- Executive Committee Member and University of Washington Tacoma's Representative of the IEEE PES Seattle Chapter, From 2019
- International Advisory Committee and Technical Program Committee of IEEE PES Conference on Innovative Smart Grid Technologies (ISGT) – Asia, 2019
- Committee Member of IEEE International Conference on Power Electronics and Drive Systems (PEDS), 2019
- Technical Co-Chair and Organizing Team Member of IEEE International Conference on Sustainable Energy Technology (ICSET), 2019
- Steering Committee and Technical Program Chair of IEEE International Conference on Power and Energy and Applications (ICPEA), 2019
- International Advisory Committee and Technical Program Committee of IEEE PES GTD Asia, 2019
- Publicity Chair and Technical Committee of International Conference on Design, Mechanical and Electrical Engineering (DMEE) 2019
- Chairman of IEEE PES Singapore Chapter, 2018
- Registration Chair and Organizing Team Member of IEEE PES Conference on Innovative Smart Grid Technologies (ISGT) – Asia, 2018
- Special Session Chair for "Impacts of Renewable Energy and Distributed Generation" and "Machine Learning Techniques for Smart Grids", IEEE PES Conference on Innovative Smart Grid Technologies (ISGT) – Asia, 2018
- Webmaster for IEEE PES Innovative Smart Grid Technologies (ISGT) – Asia, 2018
- Steering Committee and Technical Program Chair of IEEE International Conference on Green Energy and Applications (ICGEA), 2018
- Webmaster for IEEE PES Singapore Chapter, 2018
- Technical Committee of 8th IEEE India International Conference on Power Electronics (IICPE), 2018

- International Technical and Publicity Committee of International Conference on Design, Mechanical and Electrical Engineering (DMEE) and International Conference on Power Electronics and Control Engineering (ICPECE) 2018
- IET Mentor, From 2017
- IEEE Admission and Advancement Committee - Senior Member Review Panel, April 2017
- Treasurer of IEEE PES Singapore Chapter, 2016-2017
- General Committee - IEEE Symposium on Emerging Topics in Smart and Sustainable Grids, 2016
- IEEE PES R10 Chapter Chair Meeting, Melbourne, 2016 and 2017
- Session Chair for "Energy & Demand Management", IEEE Conference on Innovative Smart Grid Technologies (ISGT) – Asia, 2016
- Session Chair for "Smart Distribution Systems: Technologies and Management" and “Micro Grids and Distributed Generation”, IEEE International Technical Conference of IEEE Region 10 (TENCON), 2016
- Technical Programme Committee Member - IEEE International Conference on Sustainable Energy Technology (ICSET), Vietnam, 2016
- International Conference Advisory Committee Member - IEEE International Conference on Machine Learning and Signal Processing (MALSIP), Italy, 2016
- Internal Audit of Sri Arasakesari Sivan Temple, 2016-2019
- Committee Member of Sri Arasakesari Sivan Temple, Since 2016
- IEEE Mentor, Since 2015
- Executive Committee Member of IEEE PES Singapore Chapter from 2012 - 2018
- International Conference Advisory Committee Member - IEEE International Conference on Machine Learning and Signal Processing (MALSIP), Vietnam, 2015

Editorial Board Activities

- Associate Editor of IET Smart Grid – From January 2018 to Present

Reviewer – International Grant Proposals

- Netherlands Organisation for Scientific Research Grant Proposals, 2020
- EPSRC Fellowship Proposals, 2017
- Netherlands Organisation for Scientific Research Grant Proposals, 2016
- Netherlands Organisation for Scientific Research Grant Proposals, 2014

Reviewer – Journals

- IEEE Transactions on Smart Grid
- IEEE Transactions on Power Systems
- IEEE Transactions on Sustainable Energy
- IEEE Transactions on Parallel and Distributed Systems
- IEEE Transactions on Neural Networks and Learning Systems
- IET Smart Grid
- IET Smart Grid Renewable Power Generation
- IET Generation, Transmission & Distribution
- International Journal of Renewable and Sustainable Energy
- International Journal of Electrical Power and Energy Systems
- International Journal of Uncertainty, Fuzziness and Knowledge-based Systems

Reviewer – Conferences

- IEEE PES Innovative Smart Grid Technologies Asian Conference (ISGT-Asia), 2019
- IEEE PES GTD Asia, 2019

- MEE International Conference on Design, Mechanical and Electrical Engineering (DMEE) 2019
- IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC), 2018
- IEEE International Technical Conference of IEEE Region 10 (TENCON), 2018
- IEEE International Conference on Information and Automation for Sustainability (ICIAfS), 2018
- IEEE PES Innovative Smart Grid Technologies Asian Conference (ISGT-Asia), 2018
- IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC), 2017
- IEEE International Technical Conference of IEEE Region 10 (TENCON), 2017
- IEEE PES Innovative Smart Grid Technologies Asian Conference (ISGT-Asia), 2017
- IEEE International Technical Conference of IEEE Region 10 (TENCON), 2016
- IEEE PES Innovative Smart Grid Technologies Asian Conference (ISGT-Asia), 2016
- IEEE International Conference on Sustainable Energy Technology (ICSET) 2016
- IEEE PES Innovative Smart Grid Technologies Asian Conference (ISGT-Asia), 2015
- IEEE International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP), 2014
- IEEE Congress on Evolutionary Computation (CEC), 2014
- IEEE Congress on Evolutionary Computation (CEC), 2013
- IEEE Congress on Evolutionary Computation (CEC), 2012
- IEEE International Conference on Power Electronics and Drive Systems (PEDS), 2011

8. PROFESSIONAL DEVELOPMENT COURSES AND INVITED TALKS

Continuing Professional Development (CPD) Courses

- [1] IEEE PES Power System Basic Course for Non-Power Engineering Professionals, “Smart Grid Technologies”, Singapore, 2018.
- [2] CPD Course on “Post-Mortem Studies of Electrical Power Systems”, Singapore, 2017.
- [3] CPD Course on “Smart Grids: From Concept to Reality”, on “Active Network Management”, Singapore, 2017.
- [4] IEEE PES Power System Basic Course for Non-Power Engineering Professionals, “Smart Grid”, Singapore, 2016.

Invited Talks

- [1] Technical Talk on “Emerging Topics in Power System Research, Solutions and Research Findings”, University of Washington, Tacoma, 2019.
- [2] Keynote Speaker on "Research Methodologies and Industrial Practices on Power System Network Resiliency", IEEE International Conference on Green Energy and Applications (ICGEA), 2018.
- [3] Technical Talk on “Applications of Computational Intelligent Techniques for Emerging Challenges in Future Power Systems”, University of Washington, Tacoma, 2018.
- [4] Plenary Speaker of “Micro Grid, Storage and LVDC”, IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC), 2017.
- [5] Technical Talk on “Emerging Topics in Modern Power Systems” Univeristy of Jaffna, Sri Lanka, 2017.
- [6] Technical Presentation on "Applications of Computational Intelligence (CI) Techniques for Smart Grid Development," Berlin, Germany, 2011.
- [7] Technical Talk on "LREA for Solving Short-Term Generation Scheduling Problems in Cooperative and Competitive Energy Environments," National University of Singapore, 2011.
- [8] Technical Talk on "Multi-Agent System for Coordination of DER in a Microgrid," National University of Singapore, 2009.

9. CERTIFICATIONS

UK IET Chartered Engineer (CEng), 2020

Postgraduate Certificate in Advanced Studies in Academic Practice (Part-time), Newcastle University, United Kingdom, From 2014 to 2016.

Diploma in Computer Software Engineering (Part-time), Tec Sri Lanka, Sri Lanka, From 2002 to 2003.

USA National Council of Examiners for Engineering and Surveying (NCEES) Professional Engineer (PE) – In Progress (Expected Year 2021)

10. AWARDS AND SCHOLARSHIPS

Teaching Awards

- Newcastle Teaching Award, Newcastle University, 2016.
- Associate Fellow of the Higher Education Academy (HEA), United Kingdom, 2016.

Research Awards

- Outstanding Mobile Application Design Award for Smart Metering of Multi-Utilities: EMA, PUB and SPgroup (together with Derek Ng, Iris Ng, Anurag Sharma, and Wai Lok Woo), 2017.
- First Prize Award Winner of Siemens Smart Grid Innovation Contest, 2011, in Berlin, Germany. “Multi-Agent System for Operation of a Smart Grid” and “Autonomous Distributed Power System Restoration”.
- Third Prize Award of Best Research Poster Presentation in IEEE PES Graduate Student Workshop, Singapore, 2010.

Scholarships

- Postdoctoral Research Scholarship, Department of Electronic and Electrical Engineering, University of Strathclyde, United Kingdom, September 2012 - September 2013.
- NUS Research Scholarship for Doctor of Philosophy, National University of Singapore, Singapore, August 2007 - July 2011.
- Mahapola Higher Education Scholarship for Bachelor of Engineering, Ministry of Education, Sri Lanka, January 2001 - February 2005.

Competitive Conference Support Grants

- IEEE CIS Student Travel Grant Award from IEEE CIS Congress on Evolutionary Computation, New Orleans, United States, 2011.
- IEEE PES Conference Support Grant from IEEE PES Singapore Chapter for IEEE Congress on Evolutionary Computation, New Orleans, United States, 2011.
- IEEE PES Conference Support Grant from IEEE PES Singapore Chapter for IEEE International Conference on Sustainable Energy Technologies, Singapore, 2008.

11. REFERENCES

- [1] Professor Dipti Srinivasan, PhD
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- [2] Professor Wai Lok Woo, PhD
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Work Relationship: Former Director of Operations at Newcastle University
- [3] Professor Ehsan Mesbahi, PhD
Pro Vice Chancellor, Faculties of Science, Engineering, Architect and Design Innovation
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Work Relationship: Former CEO and Dean of Newcastle University
- [4] Professor Bryn Jones, PhD
Deputy Vice-Principal (Dubai)
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Work Relationship: Former Head of Director of Operations at Newcastle University
- [5] Professor Charles Su, PhD
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Email: charling4750@hotmail.com; Telephone: +61 470 667 617
Work Relationship: Former Colleague at Newcastle University
- [6] Mr Wai Meng Lee, PE, AHVSE
Managing Director and Professional Engineer (PE) of Electrical Power Engineering, Singapore
J. M. Pang & Seah Pte Ltd, Singapore
Email: lwm@jmpangseah.com; Telephone: +65 6287 3266
Work Relationship: Former Director