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SUMMARY

Associate Teaching Professor and Graduate Faculty of Electrical Engineering in the School of Engineering and Technology at the University of Washington Tacoma since January 2019. Previous academic appointments include Assistant Professor at the School of Electrical and Electronic Engineering, Newcastle University (UK) in Singapore for five years, and Postdoctoral Researcher at the University of Strathclyde, United Kingdom. Also served as Visiting Lecturer at the University of Washington Seattle, Seattle University, and University of Jaffna.

Holds a Ph.D. in Electrical Engineering from the National University of Singapore, with a dissertation titled *Multi-Agent System for Control and Management of Distributed Power Systems*. Earned a B.Sc. (First Class Honours) in Electrical and Electronic Engineering from the University of Peradeniya, Sri Lanka, with specialization in Electrical Power Engineering.

Research focuses on smart grid technology, microgrid systems, renewable energy integration, and the application of computational intelligence and intelligent multi-agent systems in modern power networks. Authored over 100 publications in international refereed journals, book chapters, and conference proceedings. Google Scholar citation count stands at 5,993, h-index of 34 and i10-index of 71. Serves as Associate Editor for the *IET Smart Grid* journal.

Holds Chartered Engineer (C.Eng.) status with the Institution of Engineering and Technology (IET). Recognized as a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE), Member of IET, and Associate Fellow of the Higher Education Academy (HEA), United Kingdom. Recipient of several academic and professional honors, including the First Prize in the *Siemens Smart Grid Innovation Contest* (2011) and the Newcastle University Teaching Award (2016).

1. EDUCATION

Ph.D. in Electrical Engineering, *Department of Electrical and Computer Engineering, National University of Singapore, Singapore*, August 2007 – August 2012

- Dissertation Title: *Multi-Agent System for Control and Management of Distributed Power Systems*
- Advisor: Prof. Dipti Srinivasan, Ph.D.

B.Sc. (First Class Honours) in Electrical and Electronic Engineering, *Department of Electrical and Electronic Engineering, University of Peradeniya, Sri Lanka*, January 2001 – February 2005

- Specialization: Electrical Power Engineering
- Final Year Project Title: *Finite Element Mesh Generation using Commercial CAD Packages*
- Advisor: Prof. S. Ratnajeewan H. Hoole, Ph.D.

2. ACADEMIC EXPERIENCE

School of Engineering and Technology, University of Washington Tacoma, USA

Associate Teaching Professor, June 2026 – Present

Assistant Teaching Professor, January 2019 – May 2026

Teaching, Labs, and Assessment:

- Delivered a range of undergraduate and graduate-level courses including:
 - Graduate Courses:
 - TECE 533 – Renewable Energy Systems
 - TECE 531 – Advanced Power System Operation
 - TECE 535 – Power Distribution Systems
 - Undergraduate Courses:
 - TEE 431 – Electric Power (with Labs)
 - TEE 433 – Sustainable Energy for Future Power Grid
 - TEE 331 – Applied Electromagnetics
 - TEE 315 – Electrical Circuits II (with Labs)
 - TCES 215 – Electrical Circuits I (with Labs)
 - TCES 390 – CES/EE Seminars
- Responsible for designing and administering course content, laboratory instruction, homework assignments, and examinations

Research and Student Supervision:

- Supervised student research through:
 - TECE 700 – Master’s Thesis
 - TECE 599 – Graduate Capstone Project
 - TECE 600 – Independent Study or Research
 - TEE 498/499 – Undergraduate Directed Reading/Research
 - TEE 480/481/482 – Senior Design Projects
 - TEE 497 – Internship

Curriculum Development:

- Core contributor to the design and development of a new Master’s Degree Program in Electrical and Computer Engineering.
- Contributed to the development and enhancement of new undergraduate and graduate courses in Electrical and Computer Engineering.

Administrative and Service Roles:

- Member, Faculty Council, 2026 - Present
- Member, Non-Tenure Track Faculty Forum (NTTFF), 2026 – Present
- Team Member, Advancing Mentorship Programs for Undergraduate Research Experiences (AMP-URE), 2026
- Reviewer, SET Research Showcase, 2026
- Steering Committee Member, SET Research Showcase, 2025
- Panel Member, SET Research Scholarship, faculty retreat 2024
- Founding Faculty, Clean Energy & Electric Power Consortium
- Founding Faculty and Advisor, IEEE PES Student Branch Chapter, 2024 - Present
- Member, Ad Hoc Committee for SET Merit/Additional Merit Process, 2024
- ACCESS Mentor, STEM Faculty Mentoring Program, 2023 - Present
- Reviewer, Master’s and Freshman Direct Admission Applications

- Member, SET Freshman Direct Committee, 2023 - Present
- Member, Direct Admission Committee, 2022
- Member, SET Teaching Award Committee, 2022
- Member, Curriculum Development
- Supporting Member, Recruiting/Marketing of ECE Programs

Assistant Professor, *School of Electrical and Electronics Engineering, Newcastle University (United Kingdom) in Singapore*, January 2014 – December 2018

Teaching, Labs, and Examinations:

- Lecturer for postgraduate modules: EPE8201 Advanced Power System Analysis, and EPE8205 Power System Operation and Management
- Lecturer for undergraduate modules: EEE2201 Electrical Systems, EEE2202 Digital Electronics, EEE3203 Generation, Transmission and Distribution, and EEE3204 Renewable Energy Systems
- Supervised laboratory experiments for undergraduate modules: EEE2202 Digital Electronics and EEE2201 Electrical Systems
- Dissertation committee member for five Ph.D. students
- Independent chair for one Ph.D. student
- Examiner for undergraduate final year projects, reviewing eighty-four students' work
- Chief invigilator for six modules: EPE8201, EPE8205, EEE2201, EEE2202, EEE3203, and EEE3204
- Internal moderator and second examiner for two undergraduate modules: EEE2201 Electrical Systems and EEE2204 Random Signals and Processes

Curriculum Development:

- Contributed to the development of the master's degree programme in Electrical Power Engineering in Singapore
- Developed four postgraduate 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 modules: EPE2201 Electrical Systems, EPE2202 Digital Electronics, EPE3203 Generation, Transmission and Distribution, and EPE3204 Renewable Energy Systems

Research:

- Supervised research projects focused on the design, development, and operation of smart grids and future power systems
- Supervised ten Ph.D. students, two M.Phil. students, and forty-five undergraduate final-year projects in the field of electrical power systems
- Led research initiatives on the integration of renewable energy resources, smart grid technology, and advanced power system analysis
- Published several papers in peer-reviewed journals and presented research findings at national and international conferences
- Actively contributed to research grant proposals and collaborations with industry partners

Administrative Roles:

- Degree Programme Director (DPD) for the master's programme in Electrical Power Engineering
- Research Leader, School of Electrical and Electronics Engineering

- Member of Industrial Advisory Board (IAB)
- Member of Doctoral Training Centre (DTC) Working Group
- Technical Team Member, Newcastle Research and Innovation Institute
- Member, Operational Health & Safety Committee

Mentorship:

- Personal tutor for ninety-eight undergraduate students, two M.Phil. students, and ten Ph.D. students
- Mentor for one early career faculty member

Visiting Lecturer, *Department of Electrical and Computer Engineering, University of Washington, Seattle, Washington, USA*, March 2026 – Present

Teaching:

- Delivered an undergraduate course: EE 451 – Renewable Energy: Technology and Integration
- Delivered a postgraduate course: EE 551 – Wind Energy

Mentorship and Services:

- Organized a field trip to the Wild Horse Wind and Solar Facility
- Advised master's and undergraduate student projects

Visiting Lecturer, *Department of Electrical and Electronics Engineering, Seattle University, Washington, USA*, December 2025 – Present

Teaching:

- Delivered an undergraduate course: ECEGR 3500 – Electrical Energy Systems (with Labs)

Visiting Lecturer, *Department of Electrical and Electronics Engineering, University of Jaffna, Sri Lanka*, January 2017 – Present

Teaching:

- Delivered three (online) undergraduate modules: EC4030 Electric Power, EC9030 Electricity Generation from Renewable Energy Sources, and EC9010 High Voltage Engineering
- Delivered two (online) postgraduate modules: MCET 101 03 - Essential Science for Energy Technologies, MCET 104 03 - Solar Energy Technologies
- Developed teaching materials and designed laboratory experiments for the above modules

Postdoctoral Researcher, *Department of Electronics and Electrical Engineering, University of Strathclyde, United Kingdom*, September 2012 – September 2013

- Supervisor: Professor Stephen McArthur, Ph.D.

Research Projects:

- "The Autonomic Power System," funded by the Engineering and Physical Sciences Research Council (EPSRC) with 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, involving 16 partners from 12 countries across the EU.

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

- Taught Module: EG1108 Electrical Engineering

Research Scholar, *Department of Electrical and Computer Engineering, National University of Singapore, Singapore*, August 2007 – August 2012

- Supervisor: Professor Dipti Srinivasan, Ph.D.

Research Projects:

- IEDS (Intelligent Energy Distribution Systems): “Modular Distributed Energy Resource Network (MODERN),” funded by the 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 the National Research Foundation (NRF)

Lecturer, *Department of Electrical and Information Engineering, University of Ruhuna, Sri Lanka*, February 2006 – September 2006

- Taught two undergraduate modules: EE 5304 Power Electronics and EE 4302 Digital Electronics.
- Developed teaching materials in collaboration with senior lecturers across several modules.
- Established and configured laboratory experiments in electronics and telecommunications.

Instructor, *Department of Electrical and Electronic Engineering, University of Peradeniya, Sri Lanka*, March 2005 – December 2005

- Conducted laboratory experiments in power systems and control systems.
- Set up new laboratory experiments in control systems.
- Served as a teaching assistant for three modules: EE 352 Automatic Control, EE 402 Advanced Control Systems, and EE 355 Applied Electromagnetics.

3. INDUSTRIAL EXPERIENCE

Electrical Consultant (Project-Based Contract), *YHW LLP – Electrical Consultant Company, Singapore*, January 2014 – December 2018

- Led electrical consulting projects related to integrated solutions in electrical power and oil & gas sectors. Key involvement included Singapore’s underground cable tunnel project and the Changi Airport Terminal 5 project.
- Supervisors: Mr. Kumarasamy Yathunathan, P.E. and Mr. Wong Soon Chyang Dennis, P.E.

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

- Contributed to consulting projects across electrical power and oil & gas industries in Singapore.

- Responsibilities included power system design using ETAP and SKM Power*Tools, and conducting engineering studies such as load flow, short circuit, relay coordination, motor starting, harmonic, and transient stability analyses.
- Supported the Co-Gen plant project for Natural Fuel Ltd and developed a new motor reacceleration scheme for Shell Pte Ltd.
- Applied IEC/IEEE standards, Singapore Codes of Practice, PG Handbook, and EMA metering codes.
- Conducted safety training and performed partial discharge measurements, introducing a statistical method for predicting high voltage equipment condition.
- Supervisor: Mr. Lee Wai Meng, P.E.

Engineering Internship, Suntel (Pvt) Ltd, Sri Lanka, 2003

- Participated in the national implementation of the 10-digit telephone number project.
- Assisted with the installation and maintenance of Airspan, DRA 1900, RAS 1000, and SR 500-TDMA systems for both point-to-multipoint and point-to-point microwave transmission.
- Engaged in technical training sessions focused on Ericsson's DRA 1900, RAS 1000 wireless systems, and AXE 10 switching platforms.

Engineering Internship, Elsuma (Pvt) Ltd, Sri Lanka, 2002

- Designed and successfully implemented a "Surface Mounting Device (SMD) Counting Machine" utilizing optical sensors, counter ICs, and a seven-segment display.
- Oversaw technical staff engaged in in-circuit testing, functional testing, burn-in testing, and assembly line operations.

4. PUBLICATIONS

An extensive record of scholarly contributions, including 27 peer-reviewed journal articles, 2 book chapters, 75 conference papers, and 36 workshop presentations and other publications. My research has received significant recognition in the academic community, as reflected by over 6034 citations on Google Scholar, with an h-index of 34 and an i10-index of 71.

Journal Papers

- [J27] T. T. Teo, **T. Logenthiran**, W. L. Woo, K. Abidi, N. S. Wade, D. M. Greenwood, C. Patsios, and P. C. Taylor, "Optimization of fuzzy energy-management system for grid-connected microgrid using NSGA-II," *IEEE Transactions on Cybernetics*, vol. 51, no. 11, pp. 5375–5386, Nov. 2021, <https://doi.org/10.1109/TCYB.2020.3031109>.
- [J26] Y. Tang, S. Zhao, C. W. Ten, K. Zhang, and **T. Logenthiran**, "Establishment of enhanced load modeling by correlating with occupancy information," *IEEE Transactions on Smart Grid*, vol. 11, no. 2, pp. 1702–1713, Mar. 2020, <https://doi.org/10.1109/TSG.2019.2942581>.
- [J25] Y. T. Quek, W. L. Woo, and **T. Logenthiran**, "Load disaggregation using 1-directional convolutional stacked long short-term memory recurrent neural network," *IEEE Systems Journal*, vol. 14, no. 1, pp. 1395–1404, Mar. 2020, <https://doi.org/10.1109/JSYST.2019.2919668>.
- [J24] 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," *IEEE Internet of Things Journal*, vol. 7, no. 2, pp. 863–873, Feb. 2020, <https://doi.org/10.1109/JIOT.2019.2945425>.

- [J23] 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," *IEEE Access*, vol. 7, pp. 52542–52564, Apr. 2019, <https://doi.org/10.1109/ACCESS.2019.2911543>.
- [J22] W. Li, **T. Logenthiran**, V. Phan, and W. L. Woo, "A novel smart energy theft system (SETS) for IoT-based smart home," *IEEE Internet of Things Journal*, vol. 6, no. 3, pp. 5531–5539, Jun. 2019, <https://doi.org/10.1109/JIOT.2019.2903281>.
- [J21] 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, Aug. 2018, <https://doi.org/10.4236/jpee.2018.68003>.
- [J20] T. T. Teo, **T. Logenthiran**, W. L. Woo, and K. Abidi, "Intelligent controller for energy storage system in grid-connected microgrid," *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, early access, <https://doi.org/10.1109/TSMC.2018.2881458>.
- [J19] W. Li, **T. Logenthiran**, and W. L. Woo, "Multi-GRU prediction system for electricity generation's planning and operation," *IET Generation, Transmission & Distribution*, vol. 13, no. 9, pp. 1630–1637, May 2019, <https://doi.org/10.1049/iet-gtd.2018.6081>.
- [J18] 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," *IET Smart Grid*, vol. 1, no. 3, pp. 96–103, Oct. 2018, <https://doi.org/10.1049/iet-stg.2018.0024>.
- [J17] M. R. B. M. Saifuddin, **T. Logenthiran**, R. T. Naayagi, and W. L. Woo, "Apprehending fault crises for an autogenous nanogrid system: Sustainable buildings," *IEEE Systems Journal*, early access, 2018, <https://doi.org/10.1109/JSYST.2018.2853078>.
- [J16] W. Li, **T. Logenthiran**, V. Phan, and W. L. Woo, "Implemented IoT-based self-learning home management system (SHMS) for Singapore," *IEEE Internet of Things Journal*, vol. 5, no. 3, pp. 2212–2219, Jun. 2018, <https://doi.org/10.1109/JIOT.2018.2828144>.
- [J15] W. Li, **T. Logenthiran**, V. T. Phan, and W. L. Woo, "Housing development building management system (HDBMS)," *Transactions on Environment and Electrical Engineering*, vol. 2, no. 2, 2017, <https://doi.org/10.22149/teee.v2i2.113>.
- [J14] 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," *IEEE Sensors Journal*, vol. 17, no. 23, pp. 7775–7783, Dec. 1, 2017, <https://doi.org/10.1109/JSEN.2017.2723925>.
- [J13] 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," *Journal of Engineering Technology*, vol. 4, no. 3, 2017. ISSN 2251-371X. [Online]. Available: <http://dl6.globalstf.org/index.php/jet/article/view/228>
- [J12] V. T. Phan, D. Nguyen, Q. Trinh, C. Nguyen, and **T. Logenthiran**, "Harmonics rejection in stand-alone doubly-fed induction generators with nonlinear loads," *IEEE Transactions on Energy Conversion*, vol. 31, no. 2, pp. 815–817, Jun. 2016, <https://doi.org/10.1109/TEC.2016.2521331>.
- [J11] 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," *International Journal of Electrical Power and Energy Systems*, vol. 75, pp. 8–18, Feb. 2016, <https://doi.org/10.1016/j.ijepes.2015.08.020>.
- [J10] **T. Logenthiran**, R. T. Naayagi, W. L. Woo, V. Phan, and K. Abidi, "Intelligent control system for microgrids using multiagent system," *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>.
- [J09] **T. Logenthiran**, W. L. Woo, and V. T. Phan, "Lagrangian relaxation hybrid with evolutionary algorithm for short-term generation scheduling," *International Journal of Electrical Power & Energy Systems*, vol. 64, pp. 356–364, Jan. 2015, <https://doi.org/10.1016/j.ijepes.2014.07.044>.

- [J08] **T. Logenthiran**, and D. Srinivasan, "Multi-agent system for managing distributed energy storage and electrical vehicles," *Intelligent Decision Technologies*, vol. 9, no. 2, pp. 181–190, 2015, <https://doi.org/10.3233/IDT-140215>.
- [J07] **T. Logenthiran**, D. Srinivasan, and K. M. W. Vanessa, "Demand side management of smart grid: Load shifting and incentives," *Journal of Renewable and Sustainable Energy*, vol. 6, no. 3, Jun. 2014, <https://doi.org/10.1063/1.4885106>.
- [J06] D. Sharma, A. Trivedi, D. Srinivasan, and **T. Logenthiran**, "Multi-agent modeling for solving profit based unit commitment problem," *Applied Soft Computing*, vol. 13, no. 8, pp. 3751–3761, Aug. 2013, <https://doi.org/10.1016/j.asoc.2013.04.001>.
- [J05] **T. Logenthiran**, and D. Srinivasan, "Optimal selection and sizing of distributed energy resources for distributed power systems," *Journal of Renewable and Sustainable Energy*, vol. 4, no. 5, Oct. 2012, <https://doi.org/10.1063/1.4757618>.
- [J04] **T. Logenthiran**, D. Srinivasan, and T. Z. Shun, "Demand side management in smart grid using heuristic optimization," *IEEE Transactions on Smart Grid*, vol. 3, no. 3, pp. 1244–1252, Sept. 2012, <https://doi.org/10.1109/TSG.2012.2195686>.
- [J03] **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," *IEEE Transactions on Smart Grid*, vol. 3, no. 2, pp. 925–933, Jun. 2012, <https://doi.org/10.1109/TSG.2012.2189028>.
- [J02] **T. Logenthiran**, and D. Srinivasan, "Multi-agent system for the operation of an integrated microgrid," *Journal of Renewable and Sustainable Energy*, vol. 4, no. 1, Feb. 2012, <https://doi.org/10.1063/1.3683528>.
- [J01] **T. Logenthiran**, D. Srinivasan, and A. M. Khambadkone, "Multi-agent system for energy resource scheduling of integrated microgrids in a distributed system," *Electric Power Systems Research*, vol. 81, no. 1, pp. 138–148, Jan. 2011, <https://doi.org/10.1016/j.epsr.2010.07.019>.

Book Chapters

- [B02] **T. Logenthiran** and D. Srinivasan, "Computational intelligence and smart grid," in *Computational Intelligence*, H. Ishibuchi *et al.*, Eds., UNESCO EOLSS, 2012.
- [B01] **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., IGI Global, 2010, pp. 208–231, <https://doi.org/10.4018/978-1-60566-898-7.ch012>.

Conference Papers

- [C75] J. Ayuso, **T. Logenthiran** and J. Sheng, "Wave Energy Conversion Technologies: An Integrated Review of Systems, Control, and Sustainable Deployment," *IEEE PES APPEEC (18th Asia-Pacific Power and Energy Engineering Conference)*, Singapore August, 2026.
- [C74] J. Ayuso, **T. Logenthiran** and J. Sheng, "Optimal Energy Scheduling of a Hybrid University–Hospital Microgrid Using the Dragonfly Algorithm," *IEEE PES APPEEC (18th Asia-Pacific Power and Energy Engineering Conference)*, Singapore August, 2026.
- [C73] H.P.S. Sandhu, J. Sheng, and **T. Logenthiran**, "Design and Implementation of a Dual-Input Boost Converter with a State-Space MPPT Controller," *12th International Conference on Control, Automation and Robotics (ICCAR)*, Nagoya, Japan, April 2026.
- [C72] J. S. S. Aditya, J. Sheng and **T. Logenthiran**, "A Two-Phase Approach to Fault Detection in Power Systems Using Machine Learning," *IEEE 16th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON)*, NY, USA, 2025, pp. 0173-0178, <https://doi.org/10.1109/UEMCON67449.2025.11267637>.
- [C71] M. V. S. S. Pasumarthi, **T. Logenthiran** and J. Sheng, "A Model Predictive Control Solution on Wind Farms incorporated with Dual Battery Energy Storage Systems," *IECON 2024 - 50th*

Annual Conference of the IEEE Industrial Electronics Society, Chicago, IL, USA, 2024, pp.1-7, <https://doi.org/10.1109/IECON55916.2024.10905400>.

- [C70] M. Hockman, **T. Logenthiran** and J. Sheng, "Optimizing Renewable Energy Utilization Ratio with Model Predictive Control," *IECON 2023- 49th Annual Conference of the IEEE Industrial Electronics Society*, Singapore, Singapore, 2023, pp. 1-8, <https://doi.org/10.1109/IECON51785.2023.10312337>.
- [C69] T. T. Teo, X. Feng, **T. Logenthiran**, W. L. Woo, and K. Abidi, "Multi-Objective Optimal Fuzzy Energy Management for Grid-Connected Microgrid," *IEEE PES General Meeting*, 2020, <https://eprints.ncl.ac.uk/268352>.
- [C68] 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>.
- [C67] 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>.
- [C66] 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>.
- [C65] 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>.
- [C64] 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>.
- [C63] 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>.
- [C62] 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>.
- [C61] 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>.
- [C60] 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>.
- [C59] 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>.
- [C58] 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>.

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Presentations: Symposium, Workshop, Showcase, Poster, and Others

- [P36] Refaa Aziz, Qaturi Vaughn, Alejandra J Malca Perez, Muna Mohamed and **T. Logenthiran**, “*Standardization of Power Distribution Centers (PDC) for Combined Cycle Power Plants (CCPP)*,” Research Showcase, University of Washington Tacoma, May 2026.
- [P35] Beserat Tewolde and **T. Logenthiran**, “*Decentralized Communication and Scheduling System for Microgrids*,” Research Showcase, University of Washington Tacoma, May 2026.
- [P34] Tanmaya Sreeshekhar, Jie Sheng and **T. Logenthiran**, “*Real-Time Power Quality Monitoring and Disturbance Detection Using DSP Technique*,” Research Showcase, University of Washington Tacoma, May 2026.
- [P33] K. Amirsoleymani and **T. Logenthiran**, “*Enhancing Grid Reliability through Precise Forecasting and Supply-Demand Optimization*,” Research Showcase, University of Washington Tacoma, May 2025.
- [P32] J. Ayuso and **T. Logenthiran**, “*Optimized Renewable Energy Management in a University-Hospital Microgrid Using the Dragonfly Algorithm*,” Research Showcase, University of Washington Tacoma, May 2025.
- [P31] H.Q. Tran and **T. Logenthiran**, “*A Study on Airplane Power Distribution*,” Research Showcase, University of Washington Tacoma, May 2025.
- [P30] J.S.S. Aditya, Jie Sheng and **T. Logenthiran**, “*Power Systems Fault Detection Using Machine Learning*,” Research Showcase, University of Washington Tacoma, May 2025.
- [P29] M.V.S.S. Pasumarthi, **T. Logenthiran** and E. Al-Masri, “*Time and Power Management of Charging Stations Using IoT*,” Research Showcase, University of Washington Tacoma, March 2023.
- [P28] M. Hockman, **T. Logenthiran** and J. Sheng, “*Optimizing Renewable Energy Utilization Ratio with Model Predictive Control*,” Research Showcase, University of Washington Tacoma, March 2023.
- [P27] **T. Logenthiran**, “*Energy Management System for Smart Homes on Internet of Things and Multi-Agent System*,” presented at *AEAB2019 – Applied Energy Symposium: MIT A+B*, Massachusetts Institute of Technology, Boston, MA, USA, May 22–24, 2019.
- [P26] W. Poh and **T. Logenthiran**, “*A Novel Piezoelectric-Based Quasi-Z-Source Inverter for Nanogrid*,” IEEE PES Workshop, Nanyang Technological University, Singapore, October 30, 2018.
- [P25] M. R. B. M. Saifuddin and **T. Logenthiran**, “*Integrating Distributed Renewable Technologies with Revolutionized Demand-Side Dominion Advancement: Consumers Sovereignty*,” presented at the *IEEE PES Workshop*, Nanyang Technological University, Singapore, Oct. 30, 2018.
- [P24] T. T. Teo and **T. Logenthiran**, “*Computational Intelligence Techniques for Energy Management of Storage System*,” presented at the *IEEE PES Workshop*, Nanyang Technological University, Singapore, Oct. 30, 2018.
- [P23] T. T. Teo, **T. Logenthiran**, W. L. Woo, and K. Abidi, “*Computational Intelligence in Power System Planning and Operation*,” presented at the *Singapore International Robotics Expo*, Singapore, Nov. 2–3, 2017.
- [P22] S. Surian Raj, **T. Logenthiran**, A. Sharma, and W. L. Woo, “*Self-Healing Smart Grid Networks*,” presented at *Science is GREAT*, British High Commission, Singapore, Jun. 12–13, 2017.
- [P21] 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.

- [P20] 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.
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- [P16] 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.
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- [P12] 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.
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- [P10] 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.
- [P09] T. T. Teo and **T. Logenthiran**, “Forecasting of Photovoltaic Power using Extreme Learning Machine” *IEEE PES Workshop at Nanyang Polytechnic*, Singapore, 15 December, 2015.
- [P08] W. Li and **T. Logenthiran**, “Intelligent Multi-Agent System for Smart Home Energy Management” *IEEE PES Workshop at Nanyang Polytechnic*, Singapore, 15 December, 2015.
- [P07] 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.
- [P06] C. P. S. Chew and **T. Logenthiran**, “Synergize @ SIT – NUIS,” *Energy Market Authority (EMA) ’s Energy Industry Forum*, Singapore, 11 June, 2015.
- [P05] **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.
- [P04] **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.
- [P03] **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.
- [P02] **T. Logenthiran** and D. Srinivasan, "Multi-Agent Coordination/Management for DER in MicroGrid," *IEEE PES Graduate Student Workshop*, Singapore, 24 September, 2008.
- [P01] 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.

5. PROFESSIONAL ACTIVITIES

Professional Memberships

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

Professional Roles

- Organizing Committee Member, The World Summit and Expo on Smart Grid, Solar Energy and Sustainable Power Systems (SMARTGRIDS), 2027
- Publicity Chair, IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids (IEEE SmartGridComm), 2026
- Publicity Chair, IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids (IEEE SmartGridComm), 2025
- Member at Large, IEEE PES Seattle Chapter, since 2025
- Local Organizing Committee Member, IEEE PES General Meeting, 2024
- Faculty Advisor, IEEE PES Student Branch Chapter, University of Washington Tacoma, since 2024
- Director of Communication, IEEE PES Seattle Chapter, 2022–2024
- Webmaster, IEEE PES Seattle Chapter, 2020–2022
- Publicity Chair, IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids (IEEE SmartGridComm), 2022
- Publicity Chair and Technical Committee Member, International Conference on Design, Mechanical and Electrical Engineering (DMEE), 2020–2022
- Executive Committee Member and University of Washington Tacoma Representative, IEEE PES Seattle Chapter, since 2019
- International Advisory Committee and Technical Program Committee Member, IEEE PES Conference on Innovative Smart Grid Technologies (ISGT) – Asia, 2019
- Committee Member, IEEE International Conference on Power Electronics and Drive Systems (PEDS), 2019
- Technical Co-Chair and Organizing Team Member, IEEE International Conference on Sustainable Energy Technology (ICSET), 2019
- Steering Committee and Technical Program Chair, IEEE International Conference on Power and Energy Applications (ICPEA), 2019
- International Advisory Committee and Technical Program Committee Member, IEEE PES GTD Asia, 2019
- Publicity Chair and Technical Committee Member, International Conference on Design, Mechanical and Electrical Engineering (DMEE), 2019
- Chairman, IEEE PES Singapore Chapter, 2018
- Registration Chair and Organizing Team Member, IEEE PES ISGT – Asia, 2018

- Special Session Chair, “Impacts of Renewable Energy and Distributed Generation” and “Machine Learning Techniques for Smart Grids,” IEEE PES ISGT – Asia, 2018
- Webmaster, IEEE PES ISGT – Asia, 2018
- Steering Committee and Technical Program Chair, IEEE International Conference on Green Energy and Applications (ICGEA), 2018
- Webmaster, IEEE PES Singapore Chapter, 2018
- Technical Committee Member, 8th IEEE India International Conference on Power Electronics (IICPE), 2018
- 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, 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

6. PROFESSIONAL DEVELOPMENT COURSES AND INVITED TALKS

Professional Development Courses/Workshops

- [1] A Workshop for Faculty and Researchers – *Speed Granting: Networking for Research Success* – SET Research Showcase, University of Washington, United States of America, 2026
- [2] IEEE PES Power System Basic Course for Non-Power Engineering Professionals – *Smart Grid Technologies*, Singapore, 2018
- [3] Continuing Professional Development Course – *Post-Mortem Studies of Electrical Power Systems*, Singapore, 2017
- [4] Continuing Professional Development Course – *Smart Grids: From Concept to Reality* (Topic: *Active Network Management*), Singapore, 2017
- [5] IEEE PES Power System Basic Course for Non-Power Engineering Professionals – *Smart Grid*, Singapore, 2016

Technical/Invited Talks

- [1] Panel Member – *High-Quality Research, Diverse Research Approaches, and Best Practices for Conducting Impactful Research*, SET Research Scholarship, Faculty Retreat 2024
- [2] Technical Talk – *Emerging Topics in Power System Research, Solutions and Research Findings*, University of Washington, Tacoma, 2019
- [3] Keynote Speaker – *Research Methodologies and Industrial Practices on Power System Network Resiliency*, IEEE International Conference on Green Energy and Applications (ICGEA), 2018

- [4] Technical Talk – *Applications of Computational Intelligent Techniques for Emerging Challenges in Future Power Systems*, University of Washington, Tacoma, 2018
- [5] Plenary Speaker – *Micro Grid, Storage and LVDC*, IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC), 2017
- [6] Technical Talk – *Emerging Topics in Modern Power Systems*, University of Jaffna, Sri Lanka, 2017
- [7] Technical Presentation – *Applications of Computational Intelligence (CI) Techniques for Smart Grid Development*, Berlin, Germany, 2011
- [8] Technical Talk – *LREA for Solving Short-Term Generation Scheduling Problems in Cooperative and Competitive Energy Environments*, National University of Singapore, 2011
- [9] Technical Talk – *Multi-Agent System for Coordination of DER in a Microgrid*, National University of Singapore, 2009

7. CERTIFICATIONS

- **Hybrid and Online Teaching (HOT) Certification**, University of Washington, United States of America, 2026
- **Certification** on evidence-based training modules on “*Inclusive Syllabus Design*”, “*Wise Feedback*”, and “*Cultivating Inclusive Learning Environments*”, 2026
- **Chartered Engineer (CEng)**, Institution of Engineering and Technology (IET), United Kingdom, 2020
- **Postgraduate Certificate in Advanced Studies in Academic Practice (Part-time)**, Newcastle University, United Kingdom, 2014 - 2016
- **Diploma in Computer Software Engineering (Part-time)**, Tec Sri Lanka, Sri Lanka, 2002 -2003
- **Professional Engineer (PE)**, National Council of Examiners for Engineering and Surveying (NCEES), United States of America – *In Progress (Expected Year 2027)*

8. AWARDS AND SCHOLARSHIPS

Teaching Awards

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

Research Awards

- *Outstanding Mobile Application Design Award* for Smart Metering of Multi-Utilities (with Derek Ng, Iris Ng, Anurag Sharma, and Wai Lok Woo), 2017 – Energy Market Authority (EMA), Public Utilities Board (PUB), and SP Group, Singapore
- *First Prize Winner*, Siemens Smart Grid Innovation Contest, Berlin, Germany, 2011 – “Multi-Agent System for Operation of a Smart Grid” and “Autonomous Distributed Power System Restoration”
- *Third Prize*, Best Research Poster Presentation, 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*, Ministry of Education, Sri Lanka, January 2001 – February 2005

Competitive Conference Support Grants

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

9. REFERENCES

- [1] Professor Dipti Srinivasan, PhD
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National University Singapore, Singapore
Email: dipti@nus.edu.sg; Telephone: +65 6516 6544
Work Relationship: PhD Advisor
- [2] Professor Daniel Kirschen, PhD
Donald W. and Ruth Mary Close Professor
Department of Electrical and Computer Engineering,
University of Washington, United States
Email: kirschen@ece.uw.edu; Telephone: +1 206 543 2174
Work Relationship: Colleague at the University of Washington
- [3] Professor Henry Louie, PhD
Professor of Electrical Engineering
Department of Electrical and Computer Engineering,
Seattle University, Washington, United States
Email: louieh@seattleu.edu; Telephone: +1 206 296 5970
Work Relationship: Colleague at the Seattle University
- [4] Professor Wai Lok Woo, PhD
Chair in Machine Learning
Department of Mathematics, Physics and Electrical Engineering,
Northumbria University, United Kingdom
Email: wailok.woo@northumbria.ac.uk; Telephone: +44 191 232 6002
Work Relationship: Former Director of Operations at Newcastle University
- [5] Mr Max Emrick, PE
Executive Member of IEEE PES Seattle Chapter,
Seattle, Wahington, USA
Email: memrick@ieee.org; Telephone: +1 206 999 8003
Work Relationship: Former Chairman of IEEE PES Seattle Chapter
- [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