

# S. Ali Pourmousavi Kani

## Curriculum Vitae

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📍 School of Electrical & Mechanical Engineering, Adelaide University, SA 5005, Australia.  
🏠 alipourmousavi.com  
☎ +61 8 313 8311  
✉ a.pourm@adelaide.edu.au  
🐦 @AliPourmousavi  
🌐 @alipourmousavi

### Education and Qualifications

2014 Ph.D. Montana State University, USA.  
2008 M.Sc. (First Class Hons) Amirkabir University of Technology, Iran  
2005 B.Sc. (First Class Hons) University of Mazandaran, Iran

### Current Research Interests

My research is at the intersection of power system engineering, optimisation, artificial intelligence and time series analysis. Currently, we are focused on mine electrification, flexibility aggregation at the distribution level and hybrid energy system design/operation.

### Employment history

2024– **Co-founder and board of directors**, [OptiGrid Pty Ltd](#).  
2026– **Senior Lecturer**, School of Electrical & Mechanical Engineering, Adelaide University.  
2023–2025 **Senior Lecturer**, School of Electrical & Mechanical Engineering, The University of Adelaide.  
2019–2022 **Lecturer**, School of Electrical & Electronic Engineering, The University of Adelaide.  
2017–2019 **Research Fellow**, School of Information Technology & Electrical Engineering, The University of Queensland.  
2017–2017 **Postdoc**, Department of Applied Mathematics & Computer Science, Technical University of Denmark (DTU).  
2014–2016 **Researcher**, Energy Management Department, NEC Laboratories America Inc.  
2014–2014 **Power System Engineering Specialist**, Market Engineering Support group, California ISO.  
2011–2011 **Summer Research Intern**, Energy Management Department, NEC Laboratories America Inc.

### Honours, awards and team's achievements

2025 Trong Nam Dinh (PhD student), school of Electrical and Mechanical Engineering Award for Excellence in HDR (Research Achievement).  
2025 Shah Islam (PhD student), Hans-Jurgen and Marianne Ohff Research Grant for travel.  
2024 Dr Hiran Assimi (postdoc), Helmholtz Visiting Researcher Grant promoted by the Helmholtz Information and Data Science Academy (HIDA) in Germany.  
2024 OptiGrid Pty Ltd has been accepted into the [EnergyLab](#) climate solution accelerator program.  
2023 Sahand Karimi-Arpanahi (PhD student) reached the University of Adelaide 3MT final for the second time.  
2023 Sahand Karimi-Arpanahi (PhD student) will represent South Australia in the final Falling Walls Labs competition in Australia.  
2022 Best Paper Award with Yuan Yao, *the 32<sup>nd</sup> Australasian Universities Power Engineering Conference*, Australia.  
2022 SA Power Networks Best Paper Award with Sahand Karimi-Arpanahi, *the 32<sup>nd</sup> Australasian Universities Power Engineering Conference*, Australia.  
2022 Sahand Karimi-Arpanahi (PhD student) reached the University of Adelaide 3MT final.  
2021 5<sup>th</sup> place in the third IEEE-CIS Forecast+Optimise competition with Rui Yuan, Trong Nam Dinh and Yogesh Pipada Sunil Kumar, *The University of Adelaide*, Australia.  
2019 Invited Visiting Researcher, *Technical University of Denmark (DTU)*, Denmark.  
2019 Outstanding Reviewer, *for the IEEE Transactions on Power Systems*.  
2015 two Spot Recognition Awards, *Energy Management Department at NEC Laboratories America Inc.*  
2014 Don Pierre Graduate Student Publication Award, *Montana State University, USA*.  
2011 Don Pierre Graduate Student Publication Award, *Montana State University, USA*.

## Public Engagement

Diari ARA News	Talked to journalist <a href="#">Aleix Graell</a> about SA transition to renewable energy, the article published in Barcelona-based news outlet <a href="#">Diari ARA</a> – <i>Wednesday, 22<sup>th</sup> of January 2025.</i>
The Conversation	<a href="#">Wrote an article</a> with Rui Yuan to bring attention to the vulnerability of consumers' smart meter data based on <a href="#">our groundbreaking paper</a> – <i>Monday, 18<sup>th</sup> of March 2024.</i>
ABC Radio Darwin	Talked to Adam from ABC NT on the NT 35MW 1-hour battery (Darwin Late Breakfast with Jo Laverty and Adam Steer) – <i>Monday, 4<sup>th</sup> of March 2024.</i>
ABC South East	Talked to Sam Bradbrook battery energy parks work and why they're important to our renewable energy future ( <a href="#">ABC News Article</a> ) – <i>Friday, 24<sup>th</sup> of November 2023.</i>
FiveAA	Talked to Matthew Pantelis in the morning show <a href="#">our recent paper</a> on the predictability of renewable generation that costs plant owners and consumers millions of dollars every year – <i>Monday, 27<sup>th</sup> of March 2023.</i>
ABC Port Pirie	Talked about <a href="#">our recent paper</a> on the predictability of renewable generation that costs plant owners and consumers millions of dollars every year – <i>Friday, 24<sup>th</sup> of March 2023.</i>

## Research/Consulting Grants

Competitive	Project: Two National Industry PhD funded to develop new price prediction and battery operation for NEM Sponsor: <a href="#">Australian Department of Education, The University of Adelaide, OptiGrid Pty Ltd</a> Amount: \$367K Role: Project leader Duration: February 2025 – September 2029
Consultancy	Project: The development of EV charging infrastructure (EV-CI) regulatory framework and adoption of standards for Namibia Sponsor: <a href="#">VoltGate Engineering &amp; Electricity Control Board of Namibia</a> Amount: \$12K Role: CI Duration: 2024
Consultancy	Project: Risk reduction study Sponsor: <a href="#">Sovereign Propulsion Systems PTY LTD</a> Amount: \$5K Role: Co-CI Duration: 2022
Consultancy	Project: Price, cooling and heating demand prediction tools Sponsor: <a href="#">Center Denmark</a> Amount: \$15K Role: Project leader Duration: July 2021 – December 2021
Competitive	Project: Assessment, design and operation of battery-supported electric mining vehicles and machinery Sponsor: <a href="#">Future Battery Industry CRC</a> Amount: \$1.15M Role: Project leader Duration: August 2021 – February 2024
Competitive	Project: Flexibility Aggregator Simulation Platform (FRESNO) Sponsor: <a href="#">The University of Adelaide Industry PhD</a> and <a href="#">Watts, Denmark</a> Amount: \$550K Role: Project leader Duration: 2021 – 2025
Consultancy	Project: Distributed energy resources sizing validation for ARENA grant Sponsor: <a href="#">Riverina County Water Council, NSW, Australia</a> Amount: \$28K Role: Chief Investigator Duration: November 2020 – March 2021

Internal	Project: Research Infrastructure Grant – Real-time simulator Sponsor: <i>School of Electrical and Electronic Engineering, the University of Adelaide</i> Amount: \$36K Role: Project leader Duration: 2019
Startup	Project: Startup PhD Scholarship Grant Sponsor: <i>School of Electrical and Electronic Engineering, the University of Adelaide</i> Amount: \$82K Role: Project leader Duration: 2019

## Professional Activities

2022	Technical program chair, 32 <sup>nd</sup> Australasian Universities Power Engineering Conference (AUPEC2022), Adelaide, Australia.
2020–2023	Member of the international advisory board, Flexible Energy Denmark (FED), Innovation Fund Denmark.
2020–2022	Member of the management committee, <a href="#">Centre of Energy Technology</a> , The University of Adelaide.
2020	Member of the technical committee, 10 <sup>th</sup> IEEE PES Innovative Smart Grid Technologies Conference – Asia, Perth, Australia.
2019–2023	Associate Editor, IEEE Access.
2019	Member of the technical committee, 8 <sup>th</sup> International Conference on Renewable Power Generation, Shanghai, China.

## Publications

I have (co-)authored 90 papers, chapters or books on statistical topics. A list of these appears on pages 3–8.

### Book Chapters

1. SA Pourmousavi, F Shahnian, MI Azim, MA Shoeb, and GM Shafiullah, “Microgrid control overview,” in *Variability, Scalability and Stability of Microgrids*, SM Muyeen, SM Islam, and F Blaabjerg, Eds. Institution of Engineering and Technology, 2020, ch. 2, pp. 15–71. [https://digital-library.theiet.org/content/books/10.1049/pbpo139e\\_ch2](https://digital-library.theiet.org/content/books/10.1049/pbpo139e_ch2).

### Patents

1. A Hooshmand, SA Pourmousavi, R Sharma, and S Mohan, *Optimal battery sizing for behind-the-meter applications considering participation in demand response programs and demand charge reduction*, **US Patent 10,497,072 B2**, 2019. <https://patents.google.com/patent/US10497072B2/en>.
2. SA Pourmousavi, B Asghari, and R Sharma, *Resilient battery charging strategies to reduce battery degradation and self-discharging*, **US Patent 10,298,042 B2**, 2019. <https://patents.google.com/patent/US10298042B2/en>.
3. SA Pourmousavi, R Sharma, and B Asghari, *Innovative framework combining cycling and calendar aging models*, **US Patent 10,422,835**, 2019. <https://patents.google.com/patent/US10422835B2/en>.
4. R Sharma, B Asghari, and SA Pourmousavi, *Method for real-time power management of a grid-tied microgrid to extend storage lifetime and reduce cost of energy*, **US Patent 9,020,649**, 2015. <https://patents.google.com/patent/US9020649B2/en>.

### Journal Papers

1. SN Hashemian, H Assimi, H Ranjbar, SA Pourmousavi, and WL Soong, Coordinated sizing of battery and charging systems for underground mining electric trucks, *International Journal of Electrical Power Energy Systems*, **175**, 111652, 2026. DOI: [10.1016/j.ijepes.2026.111652](https://doi.org/10.1016/j.ijepes.2026.111652).
2. SMM Islam, H Ranjbar, SA Pourmousavi, and WL Soong, An accurate and computationally efficient lithium-ion battery operation and degradation framework for planning and sizing studies in renewable energy systems, *Journal of Energy Storage*, **150**, 120575, 2026. DOI: [10.1016/j.est.2026.120575](https://doi.org/10.1016/j.est.2026.120575).
3. H Wang, SA Pourmousavi, WL Soong, and X Zhang, A novel mixed-integer linear programming formulation of vanadium redox flow battery for energy management system applications considering dynamic nonlinearities, *Journal of Energy Storage*, **152**, 120577, 2026. DOI: [10.1016/j.est.2026.120577](https://doi.org/10.1016/j.est.2026.120577).

4. R Yuan, SA Pourmousavi, WL Soong, and JAR Liisberg, Dynamic and memory-efficient shape-based methodologies for user type identification in smart grid applications, *IEEE Transactions on Industrial Informatics*, **22**, (2), 1281–1291, 2026. DOI: [10.1109/TII.2025.3625552](https://doi.org/10.1109/TII.2025.3625552).
5. NT Dinh, S Karimi-Arpanahi, SA Pourmousavi, M Guo, J Lemos-Vinasco, and JA Liisberg, On the financial consequences of simplified battery sizing models without considering operational details, *Journal of Energy Storage*, **129**, 117104, 2025. DOI: [10.1016/j.est.2025.117104](https://doi.org/10.1016/j.est.2025.117104).
6. H Ranjbar, H Assimi, SMM Islam, SA Pourmousavi, and WL Soong, Optimal planning of renewable-based mining microgrids: A comparative study of multi-objective evolutionary algorithms, *Optimization Letters*, 2025. DOI: [10.1007/s11590-025-02214-4](https://doi.org/10.1007/s11590-025-02214-4).
7. H Ranjbar, H Assimi, S Pourmousavi, and WL Soong, Frequency-constrained autonomous microgrid planning for mining industry applications, *Applied Energy*, **396**, 126201, 2025. DOI: [10.1016/j.apenergy.2025.126201](https://doi.org/10.1016/j.apenergy.2025.126201).
8. H Wang, SA Pourmousavi, WL Soong, X Zhang, AN Nikoloski, and N Ertugrul, A comprehensive and practical framework for advanced battery management system of vanadium redox flow batteries, *Journal of Energy Storage*, **123**, 116560, 2025. DOI: [10.1016/j.est.2025.116560](https://doi.org/10.1016/j.est.2025.116560).
9. H Wang, SA Pourmousavi, WL Soong, X Zhang, and R Yuan, Accurate battery models matter: Improving battery performance assessment using a novel energy management architecture, *Journal of Power Sources*, **631**, 236216, 2025. DOI: [10.1016/j.jpowsour.2025.236216](https://doi.org/10.1016/j.jpowsour.2025.236216).
10. H Assimi, SN Hashemian Ataabadi, SMM Islam, WL Soong, and SA Pourmousavi, Toward underground mobile fleet electrification: Three essential steps to make a real change, *IEEE Electrification Magazine*, **12**, (1), 16–26, 2024. DOI: [10.1109/MELE.2023.3348255](https://doi.org/10.1109/MELE.2023.3348255).
11. C Cornell, NT Dinh, and SA Pourmousavi, A probabilistic forecast methodology for volatile electricity prices in the Australian national electricity market, *International Journal of Forecasting*, 2024. DOI: [10.1016/j.ijforecast.2023.12.003](https://doi.org/10.1016/j.ijforecast.2023.12.003).
12. NT Dinh, S Karimi-Arpanahi, R Yuan, SA Pourmousavi, M Guo, JA Liisberg, and J Lemos-Vinasco, Modelling irrational behaviour of residential end users using non-stationary gaussian processes, *IEEE Transactions on Smart Grid*, 2024. DOI: [10.1109/TSG.2024.3382771](https://doi.org/10.1109/TSG.2024.3382771).
13. S Ghimire, RC Deo, D Casillas-Pérez, S Salcedo-Sanz, SA Pourmousavi, and UR Acharya, Probabilistic-based electricity demand forecasting with hybrid convolutional neural network-extreme learning machine model, *Engineering Applications of Artificial Intelligence*, **132**, 107918, 2024. DOI: [10.1016/j.engappai.2024.107918](https://doi.org/10.1016/j.engappai.2024.107918).
14. S Ghimire, RC Deo, SA Pourmousavi, D Casillas-Pérez, and S Salcedo-Sanz, Point-based and probabilistic electricity demand prediction with a neural facebook prophet and kernel density estimation model, *Engineering Applications of Artificial Intelligence*, **135**, 108702, 2024. DOI: [10.1016/j.engappai.2024.108702](https://doi.org/10.1016/j.engappai.2024.108702).
15. M Maadani, H Ranjbar, and SA Pourmousavi, Industrial internet of things in mine electrification: Necessity or luxury? *IEEE Electrification Magazine*, **12**, (1), 45–55, 2024. DOI: [10.1109/MELE.2023.3348350](https://doi.org/10.1109/MELE.2023.3348350).
16. H Wang, SA Pourmousavi, Y Li, WL Soong, X Zhang, and B Xiong, A new zero-dimensional dynamic model to study the capacity loss mechanism of vanadium redox flow batteries, *Journal of Power Sources*, **603**, 234428, 2024. DOI: [10.1016/j.jpowsour.2024.234428](https://doi.org/10.1016/j.jpowsour.2024.234428).
17. R Yuan, SA Pourmousavi, WL Soong, AJ Black, JA Liisberg, and J Lemos-Vinasco, Unleashing the benefits of smart grids by overcoming the challenges associated with low-resolution data, *Cell Reports Physical Science*, **5**, 101830, 2024. DOI: [10.1016/j.xcrp.2024.101830](https://doi.org/10.1016/j.xcrp.2024.101830).
18. M Banaei, F D'Ettorre, R Ebrahimi, SA Pourmousavi, EM Blomgren, and H Madsen, A stochastic methodology to exploit maximum flexibility of swimming pool heating systems, *International Journal of Electrical Power & Energy Systems*, **145**, 108643, 2023. DOI: [10.1016/j.ijepes.2022.108643](https://doi.org/10.1016/j.ijepes.2022.108643).
19. RC Deo, AM Ahmed, D Casillas-Pérez, SA Pourmousavi, G Segal, Y Yu, and S Salcedo-Sanz, Cloud cover bias correction in numerical weather models for solar energy monitoring and forecasting systems with kernel ridge regression, *Renewable Energy*, **203**, 113–130, 2023. DOI: [10.1016/j.renene.2022.12.048](https://doi.org/10.1016/j.renene.2022.12.048).
20. NT Dinh, S Karimi-Arpanahi, SA Pourmousavi, M Guo, and JAR Liisberg, Cost-effective community battery sizing and operation within a local market framework, *IEEE Transactions on Energy Markets, Policy and Regulation*, 1–13, 2023. DOI: [10.1109/TEMPR.2023.3324798](https://doi.org/10.1109/TEMPR.2023.3324798).
21. S Karimi-Arpanahi, SA Pourmousavi, and N Mahdavi, Quantifying the predictability of renewable energy data for improving power systems decision-making, *Patterns*, 100708, 2023. DOI: [10.1016/j.patter.2023.100708](https://doi.org/10.1016/j.patter.2023.100708).
22. MB Tookanlou, SA Pourmousavi, and M Marzband, A three-layer joint distributionally robust chance-constrained framework for optimal day-ahead scheduling of e-mobility ecosystem, *Applied Energy*, **331**, 120402, 2023. DOI: [10.1016/j.apenergy.2022.120402](https://doi.org/10.1016/j.apenergy.2022.120402).

23. H Wang, SA Pourmousavi, WL Soong, X Zhang, and N Ertugrul, Battery and energy management system for vanadium redox flow battery: A critical review and recommendations, *Journal of Energy Storage*, **58**, 106384, 2023. DOI: [10.1016/j.est.2022.106384](https://doi.org/10.1016/j.est.2022.106384).
24. H Wang, WL Soong, SA Pourmousavi, X Zhang, N Ertugrul, and B Xiong, Thermal dynamics assessment of vanadium redox flow batteries and thermal management by active temperature control, *Journal of Power Sources*, **570**, 233027, 2023. DOI: [10.1016/j.jpowsour.2023.233027](https://doi.org/10.1016/j.jpowsour.2023.233027).
25. R Yuan, SA Pourmousavi, WL Soong, G Nguyen, and JA Liisberg, Irmac: Interpretable refined motifs in binary classification for smart grid applications, *Engineering Applications of Artificial Intelligence*, **117**, 105588, 2023. DOI: [10.1016/j.engappai.2022.105588](https://doi.org/10.1016/j.engappai.2022.105588).
26. F D'Ettorre, M Banaei, R Ebrahimi, SA Pourmousavi, E Blomgren, J Kowalski, Z Bohdanowicz, B Łopaciuk-Goncaryk, C Biele, and H Madsen, Exploiting demand-side flexibility: State-of-the-art, open issues and social perspective, *Renewable and Sustainable Energy Reviews*, **165**, 112605, 2022. DOI: [10.1016/j.rser.2022.112605](https://doi.org/10.1016/j.rser.2022.112605).
27. S Karimi-Arpanahi, M Jooshaki, SA Pourmousavi, and M Lehtonen, Leveraging the flexibility of electric vehicle parking lots in distribution networks with high renewable penetration, *International Journal of Electrical Power & Energy Systems*, **142**, 108366, 2022. DOI: [10.1016/j.ijepes.2022.108366](https://doi.org/10.1016/j.ijepes.2022.108366).
28. U Akram, M Nadarajah, R Shah, and SA Pourmousavi, Sizing hess as inertial and primary frequency reserve in low inertia power system, *IET Renewable Power Generation*, **15**, (1), 99–113, 2021. DOI: [10.1049/rpg2.12008](https://doi.org/10.1049/rpg2.12008).
29. MB Tookanlou, SA Pourmousavi, and M Marzband, A comprehensive day-ahead scheduling strategy for electric vehicles operation, *International Journal of Electrical Power & Energy Systems*, **131**, 106912, 2021. DOI: [10.1016/j.ijepes.2021.106912](https://doi.org/10.1016/j.ijepes.2021.106912).
30. MB Tookanlou, SA Pourmousavi, and M Marzband, An optimal day-ahead scheduling framework for e-mobility ecosystem operation with drivers' preferences, *IEEE Transactions on Power Systems*, **36**, (6), 5245–5257, 2021. DOI: [10.1109/TPWRS.2021.3068689](https://doi.org/10.1109/TPWRS.2021.3068689).
31. MM Hasan, SA Pourmousavi, AJ Ardakani, and TK Saha, A data-driven approach to estimate battery cell temperature using a nonlinear autoregressive exogenous neural network model, *Journal of Energy Storage*, **32**, 101879, 2020. DOI: [10.1016/j.est.2020.101879](https://doi.org/10.1016/j.est.2020.101879).
32. MA Mirzaei, M Nazari-Heris, B Mohammadi-Ivatloo, K Zare, M Marzband, and SA Pourmousavi, Robust flexible unit commitment in network-constrained multicarrier energy systems, *IEEE Systems Journal*, 2020. DOI: [10.1109/JSYST.2020.3012338](https://doi.org/10.1109/JSYST.2020.3012338).
33. SA Pourmousavi, P Wild, and TK Saha, Improving predictability of renewable generation through optimal battery sizing, *IEEE Transactions on Sustainable Energy*, **11**, (1), 37–47, 2020. DOI: [10.1109/TSTE.2018.2883424](https://doi.org/10.1109/TSTE.2018.2883424).
34. G De Zotti, SA Pourmousavi, JM Morales, H Madsen, and NK Poulsen, Consumers' flexibility estimation at the tso level for balancing services, *IEEE Transactions on Power Systems*, **34**, (3), 1918–1930, 2019. DOI: [10.1109/TPWRS.2018.2885933](https://doi.org/10.1109/TPWRS.2018.2885933).
35. G De Zotti, SA Pourmousavi, JM Morales, H Madsen, and NK Poulsen, A control-based method to meet tso and dso ancillary services needs by flexible end-users, *IEEE Transactions on Power Systems*, **35**, (3), 1868–1880, 2019. DOI: [10.1109/TPWRS.2019.2951623](https://doi.org/10.1109/TPWRS.2019.2951623).
36. G De Zotti, SA Pourmousavi, H Madsen, and NK Poulsen, Ancillary services 4.0: A top-to-bottom control-based approach for solving ancillary services problems in smart grids, *IEEE Access*, **6**, 11694–11706, 2018. DOI: [10.1109/ACCESS.2018.2805330](https://doi.org/10.1109/ACCESS.2018.2805330).
37. M Marzband, M Javadi, SA Pourmousavi, and G Lightbody, An advanced retail electricity market for active distribution systems and home microgrid interoperability based on game theory, *Electric Power Systems Research*, **157**, 187–199, 2018. DOI: [10.1016/j.epsr.2017.12.024](https://doi.org/10.1016/j.epsr.2017.12.024).
38. SA Pourmousavi and TK Saha, Evaluation of the battery operation in ramp-rate control mode within a PV plant: A case study, *Solar Energy*, **166**, 242–254, 2018. DOI: [10.1016/j.solener.2018.03.035](https://doi.org/10.1016/j.solener.2018.03.035).
39. RA Kordkheili, SA Pourmousavi, M Savaghebi, JM Guerrero, and MH Nehrir, Assessing the potential of plug-in electric vehicles in active distribution networks, *Energies*, **9**, (1), 34, 2016. DOI: [10.3390/en9010034](https://doi.org/10.3390/en9010034).
40. SA Pourmousavi, MH Nehrir, and RK Sharma, Multi-timescale power management for islanded microgrids including storage and demand response, *IEEE Transactions on Smart Grid*, **6**, (3), 1185–1195, 2015. DOI: [10.1109/TSG.2014.2387068](https://doi.org/10.1109/TSG.2014.2387068).
41. SA Pourmousavi and MH Nehrir, Introducing dynamic demand response in the LFC model, *IEEE Transactions on Power Systems*, **29**, (4), 1562–1572, 2014. DOI: [10.1109/TPWRS.2013.2296696](https://doi.org/10.1109/TPWRS.2013.2296696).
42. SA Pourmousavi, SN Patrick, and MH Nehrir, Real-time demand response through aggregate electric water heaters for load shifting and balancing wind generation, *IEEE Transactions on Smart Grid*, **5**, (2), 769–778, 2014. DOI: [10.1109/TSG.2013.2290084](https://doi.org/10.1109/TSG.2013.2290084).

43. SA Pourmousavi and MH Nehrir, Real-time central demand response for primary frequency regulation in microgrids, *IEEE Transactions on Smart Grid*, **3**, (4), 1988–1996, 2012. DOI: [10.1109/TSG.2012.2201964](https://doi.org/10.1109/TSG.2012.2201964).
44. SA Pourmousavi and MM Ardehali, Very short-term wind speed prediction: A new artificial neural network–Markov chain model, *Energy Conversion and Management*, **52**, (1), 738–745, 2011. DOI: [10.1016/j.enconman.2010.07.053](https://doi.org/10.1016/j.enconman.2010.07.053).
45. SA Pourmousavi, GH Riahy, and D Mazhari, An innovative hybrid algorithm for very short-term wind speed prediction using linear prediction and Markov chain approach, *International journal of green energy*, **8**, (2), 147–162, 2011. DOI: [10.1080/15435075.2010.548887](https://doi.org/10.1080/15435075.2010.548887).
46. SA Pourmousavi, MH Nehrir, CM Colson, and C Wang, Real-time energy management of a stand-alone hybrid wind-microturbine energy system using particle swarm optimization, *IEEE Transactions on Sustainable Energy*, **1**, (3), 193–201, 2010. DOI: [10.1109/TSTE.2010.2061881](https://doi.org/10.1109/TSTE.2010.2061881).

## Conference Papers

1. NT Dinh, SA Pourmousavi, JAR Liisberg, and J Lemos-Vinasco, A decentralised privacy-preserving solution for home battery concurrent charging mitigation, in *2025 IEEE International Conference on Energy Technologies for Future Grids (ETFG)*, 2025, pp.1–6. DOI: [10.1109/ETFG61999.2025.11401121](https://doi.org/10.1109/ETFG61999.2025.11401121).
2. R Yuan, H Ranjbar, SA Pourmousavi, WL Soong, AJ Black, JAR Liisberg, and J Lemos-Vinasco, A new measure to quantify the similarity of load profile time-series, in *2025 IEEE International Conference on Energy Technologies for Future Grids (ETFG)*, 2025, pp.1–6. DOI: [10.1109/ETFG61999.2025.11402655](https://doi.org/10.1109/ETFG61999.2025.11402655).
3. SMM Islam, H Ranjbar, SA Pourmousavi, and WL Soong, Sustainable and cost-effective microgrid sizing methodology for mining operations considering reliability and energy not-served, in *2024 IEEE PES Innovative Smart Grid Technologies Europe (ISGT EUROPE)*, 2024, pp.1–6. DOI: [10.1109/ISGTEUROPE62998.2024.10863189](https://doi.org/10.1109/ISGTEUROPE62998.2024.10863189).
4. S Karimi-Arpanahi, AP Kani, and N Mahdavi, Battery scheduling optimisation in energy and ancillary services markets: Quantifying unrealised revenue in the australian nem, in *Proceedings of the 15th ACM International Conference on Future and Sustainable Energy Systems*, 2024, pp.226–236. DOI: [10.1145/3632775.3661960](https://doi.org/10.1145/3632775.3661960).
5. NT Dinh, SA Pourmousavi, S Karimi-Arpanahi, YPS Kumar, M Guo, D Abbott, and JAR Liisberg, Optimal sizing and scheduling of community battery storage within a local market, ser. e-Energy '22, Virtual Event: Association for Computing Machinery, 2022, pp.34–46. DOI: [10.1145/3538637.3538837](https://doi.org/10.1145/3538637.3538837).
6. S Karimi-Arpanahi and SA Pourmousavi, Efficient anomaly detection method for rooftop pv systems using big data and permutation entropy, in *2022 32nd Australasian Universities Power Engineering Conference (AUPEC)*, 2022, pp.1–6. DOI: [10.1109/AUPEC58309.2022.10215664](https://doi.org/10.1109/AUPEC58309.2022.10215664).
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## Invited Talks

- June 2023 *Tools to Determine the Best Solution for Mining Vehicle Electrification*  
Invited to the Energy and Mines Australia Summit to talk about our Mine Operational Vehicle Electrification (MOVE) project in Perth, WA.
- Mar. 2021 *Demand Response: An Electric Vehicle's Perspective*  
Invited by the Flexible Energy Denmark (FED) in the Annual International Advisory Board meeting for project review (online) – Talked about the importance of EVs as a source of flexibility in the future and the significance of considering EV drivers' preferences and pricing.
- Dec. 2020 *Application of AI & ML in power systems engineering*  
Invited by NOJA Power in the weekly presentation on the cutting-edge research and development in the area of power system (online) – Explained AI and ML for power system and their application in electric vehicle V2G and G2V operation and pricing.
- Feb. 2019 *Technical challenges of accommodating EVs and PHEVs in the future grid*  
Invited by the International Workshop on “Addressing Challenging Issues of Grids with High Penetration of Grid Connected Inverters: Towards Future and Smart Grids” – Reviewed the status of EVs and PHEVs in Australia and future projection, different standard on chargers and connection, opportunities and challenges.
- Dec. 2017 *Energy Storage Application in Active Distribution Networks: Concept, Implementation, and Analysis*  
Invited by the Amirkabir University of Technology (AUT), Iran, on behalf of the Iran National Elites Foundation (INEF) – Reviewed the status of small-scale PV and battery systems in Australia, and the potential applications of energy storage in the future distribution networks.
- Oct. 2017 *Big Data Tools and Procedures in Power Systems Research*  
Invited by the IEEE Queensland Student Chapter, Australia – Introduced the application of Data Scientific procedures and tools in power systems research with live demos.

## Supervision

Current PhD Students

[Sepehr Karimi](#), Adelaide University

Project: National Industry PhD – developing end-to-end learning model for BESS market participation

Role: Principal Supervisor

Supervisory Team: A/Prof Wen Soong, Dr Owen Lamont

Duration: 2023 – 2027

[Tamsa.](#), Adelaide University

Project: FBICRC Mine Electrification – developing data-driven algorithms for electric haul trucks

Role: Co-Supervisor

Supervisory Team: A/Prof Wen Soong, Dr Hiran Assimi

Duration: 2023 – 2027

[Shah Islam](#), Adelaide University

Project: FBICRC Mine Electrification – developing algorithms for energy infrastructure design  
 Role: Principal Supervisor  
 Supervisory Team: A/Prof Wen Soong, Dr Hossein Ranjbar  
 Duration: 2022 – 2026

[Behnam Hashemian](#), Adelaide University  
 Project: FBICRC Mine Electrification – developing algorithms for charging scheduling of electric haul trucks  
 Role: Co-Supervisor  
 Supervisory Team: A/Prof Wen Soong  
 Duration: 2022 – 2026

[Yogesh Pipada Sunil Kumar](#), The University of Adelaide  
 Project: FRESNO A – developing decision-making tools for aggregator operation in the electricity market  
 Role: Principal Supervisor  
 Supervisory Team: A/Prof Nesimi Ertugrul, A/Prof Markus Wagner, and Dr Jon Liisberg from Watts, Denmark  
 Duration: 2021 – 2025

[Sahand Karimi-Arpanahi](#), The University of Adelaide  
 Project: Predictability measurement and storage system sizing and operation  
 Role: Principal Supervisor  
 Supervisory Team: A/Prof Nesimi Ertugrul  
 Duration: 2020 – 2024

[Trong Nam Dinh](#), The University of Adelaide  
 Project: FRESNO C – developing advanced game-theoretic model of prosumers  
 Role: Principal Supervisor  
 Supervisory Team: Prof Derek Abbott, Dr Mingyu Guo, and Dr Jon Liisberg from Watts, Denmark  
 Duration: 2021 – 2025  
 Current Position: Principal Data Scientist at OptiGrid Pty Ltd, Australia

[Dr Hossein Ranjbar](#), The University of Adelaide  
 Project: FBICRC Mining Operational Vehicles Electrification (MOVE)  
 PhD: Sharif University of Technology  
 Duration: 2023 – 2025

[Rui Yuan](#), The University of Adelaide  
 Project: FRESNO B – developing probabilistic models of consumers reaction to price signals  
 Role: Principal Supervisor  
 Supervisory Team: Dr Andrew Black, A/Prof Wen Soong, and Dr Jon Liisberg from Watts, Denmark  
 Duration: 2021 – 2025  
 Current Position: Load forecaster at AGL, Australia

[Hao Wang](#), The University of Adelaide  
 Project: FBICRC Microgrid Battery Deployment – developing Redox Flow battery model and energy management system  
 Role: Principal Supervisor  
 Supervisory Team: A/Prof Nesimi Ertugrul, and A/Prof Wen Soong  
 Duration: 2021 – 2025  
 Current Position: Postdoc at NTU, Singapore

[Dr Hirad Assimi](#), The University of Adelaide  
 Project: FBICRC Mining Operational Vehicles Electrification (MOVE)  
 PhD: The University of Adelaide  
 Duration: 2021 – 2025

[Emma Blomgren](#), Technical University of Denmark, Denmark  
 Project: developing market mechanisms for multi-carrier energy systems in Flexible Energy Denmark (FED) project

Past Supervision Activities

Role: Co-Supervisor  
 Supervisory Team: Prof Henrik Madsen, Dr Razgar Ebrahimi  
 Duration: 2019 – 2022

[Julian Lemos Vinasco](#), Technical University of Denmark, Denmark  
 Project: developing flexibility aggregation methods considering technical constraints  
 Role: Co-Supervisor  
 Supervisory Team: Prof Henrik Madsen and Dr Jon Lissberg from Watts, Denmark  
 Duration: 2018 – 2022

[Mahsa Bagheri Tookanlou](#), Northumbria University, United Kingdom  
 Project: Electric vehicle scheduling and operation  
 Role: Co-Supervisor  
 Supervisory Team: Dr Mousa Marzband  
 Duration: 2019 – 2022  
 Current Appointment: Power System Consultant at RINA

[Giulia De Zotti](#), Technical University of Denmark, Denmark  
 Project: She developed novel control-based algorithms for ancillary services provision in the future electricity market  
 Role: Co-Supervisor  
 Supervisory Team: A/Prof Juan Miguel Morales Gonzales from University of Malaga, Prof Henrik Madsen and Niels K. Poulsen from DTU, Denmark  
 Duration: 2017 – 2019  
 Current Appointment: Project Lead at Ørsted

[Md Mehedi Hasan](#), The University of Queensland, Australia  
 Project: She developed novel control-based algorithms for ancillary services provision in the future electricity market.  
 Role: MSc co-supervisor  
 Supervisory Team: Prof Tapan K. Saha from UQ  
 Duration: 2017 – 2019  
 Current Appointment: Electrical Engineer at Kordia

## Teaching

- 2020 – [ELEC ENG 2101 Electronic Circuits](#)  
 Course coordinator and instructor  
 Second-year EEE students  
 Number of students: ~100
- 2020 – [ELEC ENG 2105 Electronic Circuits M](#)  
 2023  
 Course coordinator and instructor  
 Second-year Mech Eng students  
 Number of students: ~50
- 2020 – [ELEC ENG 4087-7087 Electricity Market & Power Systems Operation](#)  
 Course developer, coordinator and instructor  
 Fourth-year and PG students  
 Number of students: ~40

## Editorial Activities

- Associate Editor IEEE Access (IF: 4.098), IEEE  
 Editor December 2019 – 2023
- Subject Track Chair The 10<sup>th</sup> IEEE PES Innovative Smart Grid Technologies Conference – Asia  
 Track 23 – 26 November 2020, Perth, Australia  
 Chair Subject Track Chair on Microgrids, Standalone Power Systems, and Virtual Power Plants
- Technical Committee The 8<sup>th</sup> International Conference on Renewable Power Generation  
 24 – 25 October 2019, Shanghai, China

- Member IET Renewable Power Generation (ISSN: 1752-1424, IF: 3.488), IET  
 Guest Special Issue on “Demand Response in Electricity Markets”  
 Editor January 2018  
 Energies (ISSN: 1996-1073, IF: 2.707), MDPI

## Reviewer

- IEEE IEEE Transactions on Power Systems, ISSN: 0885-8950  
 IEEE Transactions on Smart Grid, ISSN: 1949-3053  
 IEEE Transactions on Sustainable Energy, ISSN: 1949-3029
- IET IET Generation, Transmission and Distribution, ISSN: 1751-8695  
 IET Renewable Power Generation, ISSN: 1752-1424
- Elsevier Applied Energy, ISSN: 0306-2619  
 Electric Power Systems Research, ISSN: 0378-7796  
 Sustainable Energy, Grids and Networks, ISSN: 2352-4677
- Taylor & Francis Electric Power Component and Systems, ISSN: 1532-5016  
 International Journal of Green Energy, ISSN: 1543-5083
- John Wiley & Sons International Transactions on Electrical Energy Systems, ISSN: 2050-7038  
 Wind Energy, ISSN: 1099-1824

## Lead Organiser

### The Adelaide Power System Summer School (APSSS) [[Website](#), [Youtube Channel](#)]

- 2020 “Application of Artificial Intelligence (AI) in power systems and smart grids” [[Web page](#)]  
 February 10-14, 2020 | Adelaide, Australia  
 with 37 participants selected from 84 applicants, and 5 lecturers and one industry workshop.  
 Overall evaluation of participants: 95% satisfied, 84% expectation met, 100% recommended.

## Professional Membership

- IEEE Power and Energy System (PES) society  
 Student Member, 2008 – 2014  
 Member, 2014 – 2019  
 Senior Member, 2019 – Present
- IEA The Institute of Engineers Australia,  
 MIEAust, 2017 – 2018
- EESA Electric Energy Society of Australia  
 Member, 2017 – Present

## Community Services

- 2017–2018 Secretary, IEEE Joint Chapter of Power Electronics/Industrial Electronics/ Industry Applications Societies