Dr. Reza Razzaghi
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Electrical and Computer Systems Engineering
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Employment

Senior Research Fellow
As per link
Electrical and Computer Systems Engineering
MONASH UNIVERSITY
1 Nov 2017 → present

Biography

I am a Senior Lecturer and an ARC DECRA Fellow in the Electrical and Computer Systems Engineering department at Monash University. I received my PhD degree from the École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland, in 2016.
I lead the Distributed and Intelligent Power Systems (DIPS) research group at Monash University. My team works on three main research areas

Distributed and renewable energy resources

Energy data analytics

Electromagnetic transients and power system protection
Check out the DIPS webpage for more information:
https://www.monash.edu/dips

Qualifications

8 Dec 2011 → 21 Mar 2016 PhD

Prizes

2019 Richard B. Shulz Best Transactions Paper Award of IEEE Transactions on Electromagnetic Compatibility
Razzaghi, Reza (Recipient), 2019

Basil Papadias best paper award at IEEE PowerTech conference, France.
Razzaghi, Reza (Recipient), 2013

Best paper award at ASAIEM 2017 conference in Bangalore, India.
Razzaghi, Reza (Recipient), 2017

Dean's Award for Technological Innovation in Learning and Teaching
Razzaghi, Reza (Recipient), 2021

Finalist EPFL doctorate Award 2017
Razzaghi, Reza (Recipient), 2017

Press / Media

Detecting short circuits by going back in time
Reza Razzaghi
10/10/17

1 item of Media coverage

Going back in time to locate short circuits in power grids
Reza Razzaghi
16/11/15
1 item of Media coverage

Research output

A framework for prosumer-centric peer-to-peer energy trading using network-secure export–import limits
Hoque, M. M., Khorasany, M., Azim, M. I., Razzaghi, R. & Jalili, M., 1 May 2024, In: Applied Energy. 361, 13 p., 122906.

Maximizing social welfare of prosumers in neighborhood battery-enabled distribution networks
Najafi-Ghalelou, A., Khorasany, M. & Razzaghi, R., 1 Apr 2024, In: Applied Energy. 359, 15 p., 122622.

Dynamic operating envelope-based local energy market for prosumers with electric vehicles
Hoque, M. M., Khorasany, M., Azim, I., Razzaghi, R. & Jalili, M., Mar 2024, In: IEEE Transactions on Smart Grid. 15, 2, p. 1712-1724 13 p.

Dynamic operating envelope-enabled P2P trading to maximise financial returns of prosumers
Azim, M. I., Lankeshwara, G., Tushar, W., Sharma, R., Alam, M. R., Saha, T. K., Khorasany, M. & Razzaghi, R., Mar 2024 , In: IEEE Transactions on Smart Grid. 15, 2, p. 1978-1990 13 p.

Management of prosumers using dynamic export limits and shared Community Energy Storage
Zabihinia Gerdroodbari, Y., Khorasany, M., Razzaghi, R. & Heidari, R., 1 Feb 2024, In: Applied Energy. 355, 10 p., 122222.

Topology identification of distribution networks with partial smart meter coverage
Pengwah, A. B., Gerdroobari, Y. Z., Razzaghi, R. & Andrew, L. L. H., 16 Jan 2024, (Accepted/In press) In: IEEE Transactions on Power Delivery. 10 p.

Activating demand side flexibility market in a fully decentralized P2P transactive energy trading framework using ADMM algorithm
Aminlou, A., Mohammadi-Ivatloo, B., Zare, K., Razzaghi, R. & Anvari-Moghaddam, A., Jan 2024, In: Sustainable Cities and Society. 100, 12 p., 105021.

Interconnected Modern Multi-Energy Networks and Intelligent Transportation Systems: Towards a Green Economy and Sustainable Development
Daneshvar, M., Mohammadi-Ivatloo, B., Anvari-Moghaddam, A. & Razzaghi, R., 2024, New York NY USA: John Wiley & Sons. 480 p.

Techno-Economic-Environmental Assessment of Green Transportation Systems
Azim, I., Khorasany, M. & Razzaghi, R., 2024, *Techno-Economic-Environmental Assessment of Green Transportation Systems.* Daneshvar, M., Mohammadi-Ivatloo, B., Anvari-Moghaddam, A. & Razzaghi, R. (eds.). 1st ed. New Jersey NY USA: Wiley-IEEE Press, 20 p.

A method to control distributed energy resources in distribution networks using smart meter data
Zabihinia Gerdroodbari, Y., Pengwah, A. B., Razzaghi, R., Heidari, R. & Andrew, L. L. H., Nov 2023, In: International Journal of Electrical Power and Energy Systems. 153, 9 p., 109293.

Model-less non-technical loss detection using smart meter data
Pengwah, A. B., Razzaghi, R. & Andrew, L. L. H., Oct 2023, In: IEEE Transactions on Power Delivery. 38, 5, p. 3469-3479 11 p.

Real-time reduced model of active distribution networks for grid support applications
Prasad, M., Rather, Z. H., Razzaghi, R. & Doolla, S., Oct 2023, In: IEEE Transactions on Power Delivery. 38, 5, p. 3531-3540 10 p.

An improved algorithm for topology identification of distribution networks using smart meter data and its application for fault detection
Flynn, D., Pengwah, A. B., Razzaghi, R. & Andrew, L. L. H., Sept 2023, In: IEEE Transactions on Smart Grid. 14, 5, p. 3850-3861 12 p.

Electric vehicles destination charging: an overview of charging tariffs, business models and coordination strategies
Yong, J. Y., Tan, W. S., Khorasany, M. & Razzaghi, R., Sept 2023, In: Renewable and Sustainable Energy Reviews. 184, 25 p., 113534.

Stochastic two-stage coordination of electric vehicles in distribution networks: A multi-follower bi-level approach
Najafi-Ghalelou, A., Khorasany, M. & Razzaghi, R., 15 Aug 2023, In: Journal of Cleaner Production. 414, 14 p., 137610.

Network-aware coordination of aggregated electric vehicles considering charge-discharge flexibility
Hoque, M. M., Khorasany, M., Razzaghi, R., Jalili, M. & Wang, H., May 2023, In: IEEE Transactions on Smart Grid. 14, 3, p. 2125-2139 15 p.

Autonomous power balance in hybrid AC/DC microgrids
Nabatirad, M., Razzaghi, R. & Bahrani, B., Mar 2023, In: International Journal of Electrical Power and Energy Systems. 146, 9 p., 108752.

A cooperative game approach for optimal resiliency-oriented scheduling of transactive multiple microgrids
Salyani, P., Nourollahi, R., Zare, K. & Razzaghi, R., Feb 2023, In: Sustainable Cities and Society. 89, 14 p., 104358.

<italic>H</italic>∞-based control design for grid-forming inverters with enhanced damping and virtual inertia
Rathnayake, D. B., Me, S. P., Razzaghi, R. & Bahrani, B., 2023, In: IEEE Journal of Emerging and Selected Topics in Power Electronics. 11, 2, p. 2311-2325 15 p.

Assessment of backup generator connection barriers to Australian Medium Voltage Networks
Gu, M., Wanninayaka, C., Ahmed, M., Hasan, K. N., Meegahapola, L., Jalili, M., Wilkinson, R., McGrath, B., Yu, X. & Razzaghi, R., 2023, *2023 IEEE International Conference on Energy Technologies for Future Grids (ETFG).* Islam, R. (ed.). Piscataway NJ USA: IEEE, Institute of Electrical and Electronics Engineers, 6 p.

Network-agnostic voltage-to-power sensitivities of a real-time reduced active distribution network
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A review of time reversal-based methods applied to fault location in power networks
Wang, Z., He, S., Razzaghi, R., Paolone, M., Xie, Y. & Rachidi, F., 26 Dec 2022, In: Frontiers in Energy Research. 10, 1060938.

A new MILP model of switch placement in distribution networks with consideration of substation overloading during load transfer
Salyani, P., Nourollahi, R., Zare, K. & Razzaghi, R., Dec 2022, In: Sustainable Energy, Grids and Networks. 32, 12 p., 100944.

Decentralized energy management and voltage regulation in islanded DC microgrids
Nabatirad, M., Razzaghi, R. & Bahrani, B., Dec 2022, In: IEEE Systems Journal. 16, 4, p. 5835-5844 10 p.

Effects of household battery systems on LV residential feeder voltage management
Ahmed, M., Ganeshan, A., Moradi Amani, A., Khafaf, N. AL., Nutkani, I. U. N., Vahidnia, A., Jalili, M., Hasan, K. N., Datta, M., Razzaghi, R., Mcgrath, B. & Meegahapola, L. G., Dec 2022, In: IEEE Transactions on Power Delivery. 37, 6, p. 5325-5336 12 p.

Mechanism design for decentralized peer-to-peer energy trading considering heterogeneous preferences
Talari, S., Khorasany, M., Razzaghi, R., Ketter, W. & Gazafroudi, A. S., Dec 2022, In: Sustainable Cities and Society. 87, 12 p., 104182.

Risk-constrained scheduling of energy hubs: a stochastic-robust optimization approach
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Topology identification of radial distribution networks using smart meter data
Pengwah, A. B., Fang, L., Razzaghi, R. & Andrew, L. L. H., Dec 2022, In: IEEE Systems Journal. 16, 4, p. 5708-5719 12 p.

Dynamic *PQ* Operating Envelopes for prosumers in distribution networks
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Peer-to-peer decentralized energy trading in industrial town considering central shared energy storage using alternating direction method of multipliers algorithm
Aminlou, A., Mohammadi-Ivatloo, B., Zare, K., Razzaghi, R. & Anvari-Moghaddam, A., 7 Sept 2022, In: IET Renewable Power Generation. 16, 12, p. 2579-2589 11 p.

Improving voltage regulation and unbalance in distribution networks using peer-to-peer data sharing between single-phase PV inverters
Zabihiniagerdroodbari, Y., Razzaghi, R. & Shahnia, F., Aug 2022, In: IEEE Transactions on Power Delivery. 37, 4, p. 2629-2639 11 p.

A framework for participation of prosumers in peer-to-peer energy trading and flexibility markets
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Generalized virtual synchronous generator control design for renewable power systems
Rathnayake, D., Razzaghi, R. & Bahrani, B., Apr 2022, In: IEEE Transactions on Sustainable Energy. 13, 2, p. 1021-1036 16 p.

A two-stage hybrid robust-stochastic day-ahead scheduling of transactive microgrids considering the possibility of main grid disconnection
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Transactive coordination of electric vehicles with voltage control in distribution networks
Hoque, M. M., Khorasany, M., Razzaghi, R., Wang, H. & Jalili, M., Jan 2022, In: IEEE Transactions on Sustainable Energy. 13, 1, p. 391-402 13 p.

Data-driven control of distributed energy resources using smart meters data
Gerdroodbari, Y. Z., Pengwah, A. B. & Razzaghi, R., 2022, *2022 IEEE PES 14th Asia-Pacific Power and Energy Engineering Conference, APPEEC 2022.* Islam, S., Rakibuzzaman Shah, M., Muyeen, S., Hosseinzadeh, N., Hasan, K., Haque, E., Taufiqul Arif, M. & Gargoom, A. (eds.). Piscataway NJ USA: IEEE, Institute of Electrical and Electronics Engineers, 5 p. (Asia-Pacific Power and Energy Engineering Conference, APPEEC; vol. 2022-November).

Propagation time estimation of transmission lines using time domain reflectometry
Pengwah, A. B., Razzaghi, R. & Andrew, L. L. H., 2022, *2022 IEEE PES 14th Asia-Pacific Power and Energy Engineering Conference, APPEEC 2022*. Islam, S., Rakibuzzaman Shah, M., Muyeen, S., Hosseinzadeh, N., Hasan, K., Haque, E., Taufiqul Arif, M. & Gargoom, A. (eds.). Piscataway NJ USA: IEEE, Institute of Electrical and Electronics Engineers, 6 p. (Asia-Pacific Power and Energy Engineering Conference, APPEEC; vol. 2022-November).

Hierarchical approach for coordinating energy and flexibility trading in local energy markets
Gazafroudi, A. S., Khorasany, M., Razzaghi, R., Laaksonen, H. & Shafie-khah, M., 15 Nov 2021, In: Applied Energy. 302, 11 p., 117575.

Network-constrained rail transportation and power system scheduling with mobile battery energy storage under a multi-objective two-stage stochastic programming
Mirzaei, M. A., Hemmati, M., Zare, K., Mohammadi-Ivatloo, B., Abapour, M., Marzband, M., Razzaghi, R. & Anvari-Moghaddam, A., 25 Oct 2021, In: International Journal of Energy Research. 45, 13, p. 18827-18845

An adaptive cumulative sum based method for unblocking distance relays in TCSC compensated transmission lines
Asle Mohammad Alizadeh, B., Esmaeili Tayeb, M., Razzaghi, R. & Mohammadi-Ivatloo, B., Oct 2021, In: International Journal of Electrical Power and Energy Systems. 131, 8 p., 107095.

Decentralized control strategy to improve fairness in active power curtailment of PV inverters in low-voltage distribution networks
Zabihinia Gerdroodbari, Y., Razzaghi, R. & Shahnia, F., Oct 2021, In: IEEE Transactions on Sustainable Energy. 12, 4, p. 2282 - 2292 11 p.

Two-stage mechanism design for energy trading of strategic agents in energy communities
Khorasany, M., Razzaghi, R. & Shokri Gazafroudi, A., 1 Aug 2021, In: Applied Energy. 295, 10 p., 117036.

Transactive energy framework for optimal energy management of multi-carrier energy hubs under local electrical, thermal, and cooling market constraints
Khorasany, M., Najafi-Ghalelou, A., Razzaghi, R. & Mohammadi-Ivatloo, B., Jul 2021, In: International Journal of Electrical Power and Energy Systems. 129, 12 p., 106803.

Frequency response of motor drive loads in microgrids
Ryan, D. J., Torresan, H. D., Razzaghi, R. & Bahrani, B., Jun 2021, In: IEEE Transactions on Energy Conversion. 36, 2, p. 1197-1206 10 p.

Optimal stochastic scheduling of reconfigurable active distribution networks hosting hybrid renewable energy systems
Zare Oskouei, M., Mohammadi-Ivatloo, B., Abapour, M. & Razzaghi, R., Jun 2021, In: IET Smart Grid. 4, 3, p. 297-306 10 p.

Lightweight blockchain framework for location-aware peer-to-peer energy trading
Khorasany, M., Dorri, A., Razzaghi, R. & Jurdak, R., May 2021, In: International Journal of Electrical Power and Energy Systems. 127, 12 p., 106610.

Optimization of economic efficiency in distribution grids using distribution locational marginal pricing
Liyanapathirane, U., Khorasany, M. & Razzaghi, R., 16 Apr 2021, In: IEEE Access. 9, p. 60123-60135 13 p.

A framework for joint scheduling and power trading of prosumers in transactive markets
Khorasany, M., Najafi-Ghalelou, A. & Razzaghi, R., Apr 2021, In: IEEE Transactions on Sustainable Energy. 12, 2, p. 955-965 11 p.

Decentralized voltage regulation and energy management of integrated DC Microgrids into AC power systems
Nabatirad, M., Razzaghi, R. & Bahrani, B., Apr 2021, In: IEEE Journal of Emerging and Selected Topics in Power Electronics. 9, 2, p. 1269-1279 11 p.

Grid-supporting battery energy storage systems in islanded microgrids: a data-driven control approach
Ryan, D. J., Razzaghi, R., Torresan, H. D., Karimi, A. & Bahrani, B., Apr 2021, In: IEEE Transactions on Sustainable Energy. 12, 2, p. 834-846 13 p.

Emerging technologies for the energy systems of the future
Anvari-Moghaddam, A., Vahidinasab, V., Mohammadi-Ivatloo, B., Razzaghi, R. & Mohammadi, F., 27 Mar 2021, In: Inventions. 6, 2, 3 p., 23.

A closed time-reversal cavity for electromagnetic waves in transmission line networks
Wang, Z., Rachidi, F., Paolone, M., Rubinstein, M. & Razzaghi, R., Mar 2021, In: IEEE Transactions on Antennas and Propagation. 69, 3, p. 1621-1630 10 p., 9181441.

A novel non-unit protection scheme for HVDC transmission lines based on multi-resolution morphology gradient
Raghpoor, V., Mehrabi-Kooshki, M. & Razzaghi, R., Mar 2021, In: IET Generation, Transmission & Distribution. 15, 5, p. 894-911 18 p.

High impedance single-phase faults diagnosis in transmission lines via deep reinforcement learning of transfer functions
Teimourzadeh, H., Moradzadeh, A., Shoaran, M., Mohammadi-Ivatloo, B. & Razzaghi, R., 18 Jan 2021, In: IEEE Access. 9, p. 15796-15809 14 p.

Fault diagnosis for electrical systems and power networks: a review
Furse, C. M., Kafal, M., Razzaghi, R. & Shin, Y. J., 15 Jan 2021, In: IEEE Sensors Journal. 21, 2, p. 888-906 19 p.

Harmonic and interharmonic phasor estimation using Matrix Pencil Method for phasor measurement units
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Furse, C., Kafal, M., Razzaghi, R. & Shin, Y-J., 15 Jan 2021, In: IEEE Sensors Journal. 21, 2, p. 886-887 2 p., 9298494.

Iterative double auction for local energy trading in microgrids: the Monash microgrid case study
Manukulasuriya, S., Saw, D. W. K., Khorasany, M. & Razzaghi, R., 2021, *2021 IEEE PES Innovative Smart Grid Technologies – Asia (ISGT Asia 2021).* Mashima, D. (ed.). Piscataway NJ USA: IEEE, Institute of Electrical and Electronics Engineers, p. 622-627 6 p. (2021 IEEE PES Innovative Smart Grid Technologies - Asia, ISGT Asia 2021).

Microgrids and local markets
Khorasany, M. & Razzaghi, R., 2021, *Microgrids: Advances in Operation, Control, and Protection.* Anvari-Moghaddam, A., Abdi, H., Mohammadi-Ivatloo, B. & Hatziargyriou, N. (eds.). 1st ed. Cham Switzerland: Springer, p. 151-177 27 p. (Power Systems).

Paving the path for two-sided energy markets: an overview of different approaches
Khorasany, M., Razzaghi, R., Dorri, A., Jurdak, R. & Siano, P., 25 Nov 2020, In: IEEE Access. 8, p. 223708-223722 15 p.

A bi-level framework for optimal energy management of electrical energy storage units in power systems
Nazari-Heris, M., Mohammadi-Ivatloo, B., Anvari-Moghaddam, A. & Razzaghi, R., 17 Nov 2020, In: IEEE Access. 8, p. 216141-216150 10 p.

Energy-efficient speed control of electric vehicles: linear matrix inequality approach
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Fault detection during power swing in thyristor-controlled series capacitor-compensated transmission lines
Alizadeh, B. A. M., Khederzadeh, M. & Razzaghi, R., Oct 2020, In: Electric Power Systems Research. 187, 14 p., 106481.

A new method for peer matching and negotiation of prosumers in peer-to-peer energy markets
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Arm-sensorless sub-module voltage estimation and balancing of modular multilevel converters
Didarul Islam, M., Razzaghi, R. & Bahrani, B., 1 Apr 2020, In: IEEE Transactions on Power Delivery. 35, 2, p. 957-967 11 p.

Transactive energy market for energy management in microgrids: the Monash Microgrid case study
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Electromagnetic time reversal similarity characteristics and its application to locating faults in power networks
Wang, Z., Razzaghi, R., Paolone, M. & Rachidi, F., 2020, In: IEEE Transactions on Power Delivery. 35, 4, p. 1735-1748 14 p.

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Nabatirad, M., Bahrani, B. & Razzaghi, R., 4 Jul 2019, *Proceedings - 2019 IEEE International Conference on Industrial Technology (ICIT).* Luque, A., Gomes, L., Han, Q-L. & Sokolowski, P. (eds.). Piscataway NJ USA: IEEE, Institute of Electrical and Electronics Engineers, p. 1692-1697 6 p.

Deterioration of frequency response in low inertia networks due to governor dead-bands
Rathnayake, D. B., Razzaghi, R. & Bahrani, B., 4 Jul 2019, *Proceedings - 2019 IEEE International Conference on Industrial Technology (ICIT).* Luque, A., Gomes, L., Han, Q-L. & Sokolowski, P. (eds.). Piscataway NJ USA: IEEE, Institute of Electrical and Electronics Engineers, p. 1698-1703 6 p.

A review on the application of the time reversal theory to wire network and power system diagnosis
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Identifying flexible pool pumps suitable for distributed demand response schemes
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Optimized renewable energy use in green cloud data centers
xU, M., N. Toosi, A., Bahrani, B., Razzaghi, R. & Singh, M., 2019, *Service-Oriented Computing: 17th International Conference, ICSOC 2019 Toulouse, France, October 28–31, 2019 Proceedings.* Yangui, S., Bouassida Rodriguez, I., Drira, K. & Tari, Z. (eds.). Cham Switzerland: Springer, p. 314-330 17 p. (Lecture Notes in Computer Science ; vol. 11895).

Swiss competence center on energy research FURIES - overview and contributions in the area of power electronics and SmartGrids
Favre-Perrod, P., Biela, J., Carpita, M., Christe, A., Czyz, P., Dujic, D., Franck, C., Guillod, T., Kolar, J. W., Krismer, F., Milovanovic, S., Paolone, M., Rachidi, F., Razzaghi, R., Schultz, T., Tsolaridis, G., Utvic, M. & Wang, Z., 2019, *2019 21st European Conference on Power Electronics and Applications (EPE '19 ECCE Europe).* Lataire, P. (ed.). Piscataway NY USA: IEEE, Institute of Electrical and Electronics Engineers, p. 4387-4396 10 p.

Two-stage stochastic model for optimal scheduling of reconfigurable active distribution networks with renewable energy
Oskouei, M. Z., Mohammadi-Ivatloo, B., Abapour, M. & Razzaghi, R., 2019, *2019 9th International Conference on Power and Energy Systems (ICPES).* Su, X. (ed.). Piscataway NJ USA: IEEE, Institute of Electrical and Electronics Engineers, p. 1-5 5 p. (2019 9th International Conference on Power and Energy Systems, ICPES 2019).

Locating lightning strikes and flashovers along overhead power transmission lines using electromagnetic time reversal
Razzaghi, R., Scatena, M., Sheshyekani, K., Paolone, M., Rachidi, F. & Antonini, G., 1 Jul 2018, In: Electric Power Systems Research. 160, p. 282-291 10 p.

A white rabbit Synchronized PMU
Razzaghi, R., Derviškadić, A. & Paolone, M., 16 Jan 2018, *2017 IEEE PES Innovative Smart Grid Technologies Conference Europe (ISGT-Europe 2017).* Spertino, F. (ed.). Piscataway NJ USA: IEEE, Institute of Electrical and Electronics Engineers, p. 513-518 6 p.

Electromagnetic time reversal applied to fault location: on the properties of back-injected signals
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Using electromagnetic time reversal to locate faults in transmission lines: Definition and application of the "mirrored minimum energy" property
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Electromagnetic time reversal applied to fault location in power networks
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