

Personal Details

16/05/2025

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 Birth 28/07/1990 in Frankfurt am Main, Germany
 Address Den Haag, Netherlands

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 Proficient languages: German and English

Qualifications

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| 2017-2020 | PhD Applied Machine Learning for Energy Systems Management (distinction: top thesis out of 50) <i>Imperial College London, UK</i> | |
| 2014-2016 | MSc Process Engineering (Grade: 1.5) <i>RWTH Aachen University, Germany</i> | |
| 2011-2016 | BSc Electrical Engineering (Grade: 2.6, top 5% in 2012) <i>RWTH Aachen University, Germany</i> | } only top <1% of students study simultaneous two degrees |
| 2010-2014 | BSc Mechanical Engineering (Grade: 1.9, top 5%) <i>RWTH Aachen University, Germany</i> | |

Experience

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| Since 12/2020 | Associate Professor, Delft University of Technology (TU Delft), Netherlands Co-Director, Delft AI Lab for Electric Sustainable Energy <ul style="list-style-type: none"> Developing a new research line on Artificial Intelligence for Energy Systems Leading a team of PhDs and Postdoctoral researchers |
| Since 09/2023 | Principal Scientist, Center for Energy, Austrian Institute of Technology <ul style="list-style-type: none"> Developing a team on computational methods for grid operation, planning, including techniques from Artificial Intelligence and Quantum Computing, responsible for a program with 6 PhDs + 1 Postdoc |
| Since 10/2021 | Member Board of Directors, Student Energy, NGO, Canada <ul style="list-style-type: none"> Overseeing operations and the strategy of this charity with 20 FTEs, 1M budget, 50k registered students and several programs for skill-building and development of youth, https://studentenergy.org/ |
| 2017-2021 | Research Associate & PhD Student, Imperial College London, UK <ul style="list-style-type: none"> Fully funded scholarship from RTE, the French TSO, and EPSRC, UK Conference Chair of International Student Energy Summit 2019 - flagship event of Canadian charity Student Energy, London, UK www.StudentEnergySummit2019.com <ul style="list-style-type: none"> Globally largest student-run sustainable energy conference (700 delegates from 100 countries) Over 50 top-tier C-level energy leaders spoke at our 4-days conference My role: led a 30-person team and 70 volunteers, project manager, fundraised budget of £500k, managed international advisory board, oversaw marketing, program, logistics, moderation, etc. |
| 2016 | Graduate student researcher at Massachusetts Institute of Technology, USA <ul style="list-style-type: none"> 6 months master thesis on control systems in chemical engineering |
| 2015-2016 | Student researcher at E.ON Energy Research Centre and RWTH Aachen University, Germany |
| 2013-2014 | Exchange student and researcher at Carnegie Mellon University, USA <ul style="list-style-type: none"> 9 months of studies and bachelor thesis "Demand side management of air separation plants" |
| 2016 2015 2012 2011 | Industrial placements (3 months full-time each), Germany, China <ul style="list-style-type: none"> Business development with CEO for medium-sized SME in energy industry, <i>Ene't, Hückelhoven, Germany</i> Project engineering intern "Explore Together" program, <i>BASF, Shanghai, China</i> Production engineering intern, <i>ThyssenKrupp Steel Europe, Germany</i> Essential engineering intern, <i>INEOS, Cologne, Germany</i> |

Awards and Recognitions (based on merit)

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| 2024 | The Best Technical Brochure Award IEEE PES Subcommittee AMPS (IEEE PES-TR104 in the below list) |
| 2024 | The Outstanding Reviewer IEEE Transactions on Sustainable Energy, IEEE PES |
| 2022 | The Best Paper of IEEE Journal of Modern Power Systems and Clean Energy (J14 in the below list) |
| 2021 | The Eryl Cadwallader Davies Prize 2020-2021, Electrical Engineering, Imperial College The top "Outstanding PhD Thesis" out of 50 PhD theses in the academic year. |
| 2019 | The John Lever Memorial Award 2019 (£3k), Faculty of Engineering, Imperial College "contributed significantly to teaching, outreach, public engagement, enterprise or student experience." |
| 2018 | The John & Frances Jones Prize 2017-2018, Imperial College London <ul style="list-style-type: none"> "the postgraduate student who 'made the best all-round contribution to College life, taking into account academic achievement, social and extra-curricular activities, for the academic year in question'" |

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| 2017 | The Best Paper Award , 6th International Conference on Smart Cities and Green ICT, Portugal |
| 2015 | The Research Ambassador Award (£2k) for highly qualified master's students, RWTH Aachen |
| 2012-2016 | The Germany Scholarship (£11k) for academic achievements by Evonik Foundation, Bilfinger Berger |
| 2013-2014 | The Dean's List Award for academic achievements, Carnegie Mellon University, USA |
| 2013-2014 | The International Study and Education Partnerships Grant (worth £60k) to study in the USA by the German Academic Exchange Service (DAAD) |

Journal Publications (* in review, ** in preparation)

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- J34 Ali Rajaei, Olayiwola Arowolo, Jochen L. Cremer, "Learning-Accelerated ADMM for Stochastic Power System Scheduling", *IEEE Transactions on Sustainable Energy*, 2025
 - J33 Mert Karaçelebi, Jochen L. Cremer "Online Neural Dynamics Forecasting for Power System Security", *International Journal of Electrical Power & Energy Systems* 2025
 - J32 Olayiwola Arowolo, Jochen Stiasny, Jochen Cremer, "Exploring the Extrapolation Performance of Machine Learning Models for Power System Time Domain Simulations", *12th Bulk Power System Dynamics and Control Symposium and Sustainable Energy, Grids and Networks Journal*, 2025
 - J31 Mert Karaçelebi, Jochen L. Cremer, "Predicting Power System Frequency with Neural Ordinary Differential Equations", *12th Bulk Power System Dynamics and Control Symposium and Sustainable Energy, Grids and Networks Journal*, 2025
 - J30 Geert Jan Meppelink, Ali Rajaei, Jochen L. Cremer, "A Hybrid Curriculum Learning and Tree Search Approach for Network Topology Control" *Electric Power System Research*, 2025
 - J29 Jochen L. Cremer, "Polynomial Line Outage Distribution Factors for Estimating Expected Congestion and Security", *IEEE Transactions on Power Systems*, 2024
 - J28 Demetris Chrysostomou, Jose Rueda Torres, Jochen L. Cremer "Tensor Convolution-Based Aggregated Flexibility Estimation in Active Distribution Systems", *IEEE Transactions on Smart Grid*, 2024
 - J27 Jingwei Dong, Haiwei Xie, Yucheng Liao, Jochen Cremer, and Peyman Mohajerin Esfahani, "Real-Time Ground Fault Detection for Inverter-Based Microgrid Systems", *IEEE Transactions on Control Systems*, 2024
 - J26 Haiwei Xie, Jochen L. Cremer "Game-Theoretic Learning for Power System Dynamic Ancillary Service Provisions", *IEEE Control Systems Letters*, 2024
 - J25 Bastien Giraud, Ali Rajaei, Jochen L. Cremer "Constraint-Driven Deep Learning for N-k Security Constrained Optimal Power Flow", *Electric Power System Research and 2024 IEEE Power System Computation Conference*
 - J24 Nikolina Čović, Jochen L. Cremer, Hrvoje Pandžić, "Learning a reward function for user-preferred appliance scheduling" *Electric Power System Research and 2024 IEEE Power System Computation Conference* <https://arxiv.org/pdf/2310.07389.pdf>
 - J23 Charles Renshaw-Whitman, Viktor Zobernig, Jochen L. Cremer, Laurens de Vries, "Non-stationarity in multiagent reinforcement learning in electricity market simulation", *Electric Power System Research and 2024 IEEE Power System Computation Conference*
 - J22 Al-Amin Bugaje, Jochen L. Cremer, Goran Strbac "Generating Quality Datasets for Real-Time Security Assessment: Balancing Historically Relevant and Rare Feasible Operating Condition" *International Journal of Electrical Power & Energy Systems*, 2023
 - J21 B. Habib, E. Isufi, W. v. Breda, A. Jongepier and Jochen L. Cremer, "Deep Statistical Solver for Distribution System State Estimation," *IEEE Transactions on Power Systems*, 2023, doi: 10.1109/TPWRS.2023.3290358.
 - J20 Dariush Wahdany, Carlo Schmitt, Jochen L. Cremer, "More than Accuracy: End-To-End Wind Power Forecasting that Optimises the Energy System", *Electric Power System Research*, 2023
 - J19 Nidarshan Veera Kumar, Jochen L. Cremer, Marjan Popov, "Dynamic Incremental Learning for real-time disturbance event classification", *International Journal of Electrical Power & Energy Systems*, 2023, (108988)
 - J18 Al-Amin Bugaje, Jochen L. Cremer, Goran Strbac, "Real-time Transmission Switching with Neural Networks" *IET Generation, Transmission & Distribution*, 2022
 - J17 Al-Amin Bugaje, Jochen L. Cremer, Goran Strbac, "Split-based Sequential Sampling for Realtime Security Assessment", *International Journal of Electrical Power & Energy Systems*, 2022
 - J16 Federica Bellizio, Jochen L. Cremer, Goran Strbac, "Transient Stable Corrective Control Using Neural Lyapunov Learning", *IEEE Transactions of Power Systems*, 2022
 - J15 Antoine Marot, Benjamin Donnot, Karim Chaouache, Adrian Kelly, Qiuhua Huang, Ramij-Raja Hossain, and Jochen L. Cremer. "Learning to run a power network with trust." arXiv preprint arXiv:2110.12908. *Electric Power Systems Research*, 2022
 - J14 Antoine Marot, Adrian Kelly, Matija Naglic, Vincent Barbesant, Jochen Cremer, Alexandru Stefanov and Jan Viebahn, "Perspectives on Future Power System Control Centers for Energy Transition", *IEEE Journal of Modern Power Systems and Clean Energy*, 2022
 - J13 Federica Bellizio, Wangkun Zu, Dawei Qiu, Yujian Ye, Dimitrios Papadaskapoulos, Jochen L. Cremer, Fei Teng, Goran Strbac, "Transition to Digitalized Paradigms for Security Control and Decentralized Electricity Market", *IEEE Proceedings, Special Issue "The Evolution of Smart Grids"*, 2022
 - J12 Federica Bellizio, Al-Amin B. Bugaje, Jochen L. Cremer, Goran Strbac, "Verifying Machine Learning Conclusions for Securing Low Inertia Systems", *Sustainable Energy, Grids and Networks*, 2022
 - J11 Felix Rafael Segundo Sevilla, Yanli Liu, Emilio Barocio, Petr Korba, Manuel Andrade, Federica Bellizio, Jorrit Bos, Balarko Chaudhuri, Hector Chavez, Jochen Cremer, Robert Eriksson, Camille Hamon, Miguel Herrera, Marnick Huijsman, Michael

- Ingram, Danny Klaar, Venkat Krishnan, Jorge Mola, Marcos Netto, Mario Paolone, Panagiotis Papadopoulos, Miguel Ramirez, Jose Rueda, Walter Sattinger, Vladimir Terzija, Simon Tindemans, Alberto Trigueros, Yajun Wang, Junbo Zhao. "State-of-the-art of data collection, analytics, and future needs of transmission utilities worldwide to account for the continuous growth of sensing data". *International Journal of Electrical Power & Energy Systems*, 2021: 107772.
- J10 F. Bellizio, J. L. Cremer, G. Strbac, "Machine-learned security assessment for changing system topologies." *International Journal of Electrical Power & Energy Systems* 134. 2022: 107380.
- J9 F. Bellizio, J. L. Cremer, M. Sun, G. Strbac, "A causality based feature selection approach for data-driven dynamic security assessment." *Electric Power Systems Research* 201. 2021: 107537.
- J8 A. Bugaje, J. L. Cremer, M. Sun, G. Strbac, "Selecting decision trees for power system security assessment", *Energy and AI*, 2021: 100110.
- J7 T. Zhang, M. Sun, J. L. Cremer, N. Zhang, G. Strbac, C. Kang, "A Confidence-Aware Machine-Learned Framework for Dynamic Security Assessment", *IEEE Transactions on Power Systems*, 2021
- J6 J. L. Cremer, G. Strbac, "A Machine-learning based Probabilistic Perspective on Dynamic Security Assessment" *International Journal of Electrical Power & Energy System*, 2020
- J5 J. L. Cremer, I. Konstantelos, G. Strbac, "From Optimization-based Machine Learning to Interpretable Security Rules for Operation", *IEEE Transactions on Power Systems*, 2019
- J4 M. Pau, J. L. Cremer, F. Ponci, A. Monti, "Day-Ahead Scheduling of Electric Heat Pumps for Peak Shaving in Distribution Grids". In: *Smart Cities, Green Technologies, and Intelligent Transport Systems. Communications in Computer and Information Science, Springer Journal*, 2018
- J3 J. L. Cremer, I. Konstantelos, S. H. Tindemans, G. Strbac, "Data-driven Power System Operation: Exploring the Balance between Cost and Risk", *IEEE Transactions on Power Systems*, 2018
- J2 M. Sun, J. L. Cremer, G. Strbac, "A novel data-driven scenario generation framework for transmission expansion planning with high renewable energy penetration", *Applied Energy*, 2018
- J1 Q. Zhang, J. L. Cremer, I. E. Grossmann, A. Sundaramoorthy, J. M. Pinto, "Risk-based integrated production scheduling and electricity procurement for continuous power-intensive processes", in *Computers & Chemical Engineering*, 2015

Conference Publications (* in review, ** in preparation)

- C19 Jesse J. Heckman, Florian de Koning, Luc Nies, Jochen L. Cremer, "FlexFinder: Facilitating the Contracting Process for Medium Voltage Grid Customers Using Large Language Models", *CIGRE 2025, Geneva, Switzerland*
- C18 Luca Hofstadler, Catalin Gavriluta, Jochen Stiasny, and Jochen Cremer, "Exploratory Analysis on the Impact of Grid Tariffs in Transmission Expansion Planning", *Kiel, Germany, IEEE PES Powertech 2025*
- C17 Thomas Lautenbacher, Ali Rajaei, Davide Barbieri, Jan Viebahn, Jochen L. Cremer, "Multi-Objective Reinforcement Learning for Power Grid Topology Control", *Kiel, Germany, IEEE PES Powertech 2025*
- C16 Catarina Santos Neves, Nikolina Čović, Jochen Cremer, "Learning to control a battery through reinforcement: balancing lifetime and profit", *Kiel, Germany, IEEE PES Powertech 2025*
- C15 Oscar Lopez Romero, Jan Poland, Jochen L. Cremer. "Deep Diffusion on Sky Images for Probabilistic Ultra-Short-Term PV Forecasting", *Kiel, Germany, IEEE PES Powertech 2025*
- C14 Viktor Zobernig, Sarah Fanta, Stefan Strömer, Regina Hemm, Jochen L. Cremer, Laurens J. de Vries, "Exploring Market Designs for Enhanced Flexibility Procurement with Deep Reinforcement Learning", *The International Conference on European Energy Markets, Lisboa, Portugal 2025*
- C13 Runyao Yu, Jiaqi Wang, Yongsheng Han, Chi Zhang, Teddy Szemberg O'Connor, Jochen L. Cremer, "Few-Shot Transfer Learning for Battery Cycle Life", *IEEE ISGT Europe 2024*
- C12 J. L. Cremer, A. Kelly, R. Jorge Bessa, M. Subasic, P. Papadopoulos, S. Young, A. Sagar, A. Marot, "A Pioneering Roadmap for ML-Driven Algorithmic Advancements in Electrical Networks", *IEEE ISGT Europe 2024*
- C11 F. R. Segundo Sevilla, Y. Liu, E. Barocio, P. Korba, A. Zamora, D. Dotta, F. Bellizio, H. Chavez, H. Jóhannsson, J. Cepeda, J. Cremer, J. Zhao, M. Arrieta, M. Paolone, M. Ramirez, P. Papadopoulos, and Y. Susuki, "Spatio-temporal Data-Driven and Machine Learning based Applications for Transmission Systems" *IEEE PES General Meeting 2024*
- C10 A. Neagu, D. Chakravorty, J. L. Cremer, "Automatic Detection of Subsynchronous Oscillations" *CIGRE Annual meeting 2024*
- C9 Demetris Chrysostomou, Jose Rueda Torres, Jochen L. Cremer "Operational Flexibility for Active Distribution Networks with low observability", *IEEE Powertech 2023, Belgrade, Serbia*
- C8 Rushil Vohra, Ali Rajaei, Jochen L. Cremer "End-to-End Learning with Multiple Modalities for System-Optimised Renewables Nowcasting", *IEEE Powertech 2023, Belgrade, Serbia*
- C7 Jasper van Tilburg, Luciano Cavalcante Siebert, Jochen L. Cremer, "MARL-iDR: Multi-Agent Reinforcement Learning for Incentive-based Residential Demand Response" *IEEE Powertech 2023, Belgrade, Serbia*
- C6 Haiwei Xie, Federica Bellizio, Jochen L. Cremer, Goran Strbac, "Regularised Learning with Physical Equations for Uncertain Power System Dynamics", *IEEE Powertech 2023, Belgrade, Serbia*
- C5 J. L. Cremer, I. Konstantelos, G. Strbac, "Optimized Operation Rules for Imbalanced Classes", *IEEE PES General Meeting of Power Systems, Atlanta, USA, 08/2019*
- C4 J. L. Cremer, I. Konstantelos, S. H. Tindemans, G. Strbac, "Sample-Derived Disjunctive Rules for Secure Power System Operation", in *IEEE International Conference on Probabilistic Methods Applied to Power Systems, Boise, USA, 06/2018*
- C3 M. Pau, J. L. Cremer, F. Ponci, A. Monti, "Impact of Customers Flexibility in Heat Pumps Scheduling for Demand Side Management", in *IEEE International Conference on Environment and Electrical Engineering, Italy, 06/2017*
- C2 J. L. Cremer, M. Pau, F. Ponci, A. Monti, "Optimal scheduling of heat pumps for power peak shaving and customers thermal comfort", in *International Conference on Smart Cities and Green ICT Systems, Portugal, 04/2017*

- C1 Q. Zhang, J. L. Cremer, I. E. Grossmann, A. Sundaramoorthy, J. M. Pinto. “Electric Energy Procurement for Large Industrial Consumers Under Uncertainty in Electricity Price and Product Demand”, *AIChE, Annual Meeting, USA*, 11/2014

Book chapter

- Ch4 Christoph Brosinsky, Mert Karaçelebi, Jochen Cremer, “Purpose-driven Surrogate Models Using Machine Learning and Digital Twins: Monitoring and control for dynamic security.” in *Monitoring & control of electrical power systems using machine learning techniques*, Elsevier, 2023

Technical reports

- 11/2024 CIGRE TB 946, “The impact of the growing use of machine learning/artificial intelligence in the operation and control of power networks from an operational perspective” by CIGRE WG C2.42
- 11/2022 IEEE PES-TR104, “Application of spatio-temporal data-driven and machine learning algorithms for security assessment taskforce”, by IEEE AMPS taskforce on Application of Big Data Analytics on Transmission Systems for Dynamic Security Assessment, **prize for best technical brochure at IEEE PES**
- 07/2022 IEEE PES-TR100, “Present situation on data acquisition, handling, and analytics of operators of the transmission system in different countries and their future needs to cope with the continuous growth of data”, by IEEE AMPS taskforce on Application of Big Data Analytics on Transmission Systems for Dynamic Security Assessment
- 04/2021 CIGRE TB 833 - Operating strategies and preparedness for system operational resilience by CIGRE WG C2.25
- 04/2021 Jochen Cremer, Federica Bellizio, Ioannis Konstantelos, Goran Strbac Pauline Gambier-Morel, Patrick Panciatici, “Data-Driven Security Rules for Realtime System Prediction and Control” Energy Futures Lab, Imperial College London, <https://www.imperial.ac.uk/energy-futures-lab/reports/data-driven-security-rules-for-real-time-system-prediction-and-control/>

Funding

- 11/2024 HORIZON-CL3-2024-INFRA-01-03 FORTRESS Fault Operation Responsive Technologies for Real-time Enhanced Security interconnected Systems (PI TU Delft 600k Euro, **rejected**)
- 11/2024 EU H2020 MSCA Doctoral Networks 2023 Curie Training Network HiPPO “High Performance Computing Methods, Tools, and Infrastructure for the Analysis and Simulation of Future Electrical Power Systems” (HORIZON-MSCA-2023-DN-01-01) (CO-I 500k, **rejected**)
- 01/2024 AI Testing and Experimentation Facility for the energy sector – bringing technology to the market AI-EFFECT (HORIZON-CL5-2024-D3-01-11) (CO-I 600k Euro **accepted**)
- 01/2024 Monitoring cable ageing and identifying faults with advanced sensing and AI-Assisted Solutions to improve reliability of high-power cable systems (MISSION, HORIZON-CL5-2024-D3-01) (CO-I 600k Euro **reserve list**)
- 09/2023 Public-private partnership allowance for R&D with Stedin (PI 500k Euro, **accepted**)
- 08/2023 EU H2020 Sustainable, secure and competitive energy supply (HORIZON-CL5-2022-D3-02) (CO-I 500k, **rejected**)
- 09/2022 NWO LTP Robust Programme, Lab Manager for Alliander ICAI AI for Energy Grids Lab (CO-I, 2.5M Euro, **accepted**)
- 05/2022 EU H2020 FLEX4VALUE (Co-I, 350k Euro, **rejected**)
- 04/2022 AIT research programme for 6 PhDs (PI, 300k Euro +1M Euro indirect funds at AIT, **accepted**)
- 04/2022 NWO Veni Talent Program, personal grant for top 5-10% (PI, 280k Euro, **accepted**)
- 12/2021 EU H2020 HVDC HIGHWAY (CO-I, 200k Euro, **rejected**)
- 01/2021 Delft AI Lab programme, Delft AI Energy Lab (PI for 1M Euro, **accepted**)
- 08/2020 UKRI Futures Leaders (PI for personal grant 1.2M Euro, **rejected in interview stage**)

Invited keynotes and panel talks at scientific events

- 06/2025 **Tutorial** at ACM E-Energy 2025, *Rotterdam, Netherlands*
- 05/2025 **Speaker** at DTU Summer School, *DTU, Copenhagen, Denmark*
- 04/2025 **cresROADS** presentation at CRESYM General Assembly, *Brussels, Belgium*
- 01/2025 **1-day course** on “AI in Power System Reliability Monitoring” at Smart and Green Energy Systems and Business Models hosted by *Tallinn University, Estonia*, <https://www.sustainalab.nl/event/grid-congestion-reshaping-future-energy-systems/>
- 12/2024 **Speaker** “Grid congestion: Reshaping Future Energy Systems”, *Sustainalab Universiteit van Amsterdam, The Netherlands*
- 11/2024 **Tutorial** of IEEE CIGRE C2.42, AI-day for grid operations, **Paris, France**
- 11/2024 **Speaker** at Energietage, *Vienna, Austria*
- 10/2024 **Tutorial**, IEEE PES & Power Africa Conference, *Johannesburg, South Africa*
- 10/2024 **Panel speaker** “ML/AI applications in power systems: Drivers and barriers” *IEEE ISGT Europe, Dubrovnik, Croatia*
- 09/2024 **Speaker** “AI for NetZero” webinar series, <https://www.youtube.com/watch?v=xpwHfjdZfgk>
- 09/2024 **Speaker** at summer school „Inverter-Based Power Systems”, *Imperial College London, UK*
- 07/2024 **Panellist** Dynamic Modeling of Multi-Energy Systems, *IEEE PES General Meeting, Seattle, USA*
- 07/2024 **Panellist** Convergence of AI- and Physics based Approaches in Power System Analysis, Optimization, and Control, *IEEE PES General Meeting, Seattle, USA*
- 06/2024 **Invited speaker** “Reinforcement Learning for Energy Community Management” in special session RL for energy networks” at the workshop on Reinforcement Learning for Stochastic Networks (RL4SN), *Toulouse, France*

- 05/2024 **Invited speaker** Webinar at IEEE PES Chapter Spain, Women in Power, Universitat Politècnica de Catalunya, *Barcelona, Spain*
- 05/2024 **Invited speaker in technical session** “Advancing Power System Reliability with System-based Deep Learning”, Electrimacs conference, *Castellon, Spain*
- 05/2024 **Invited speaker**, Symposium “Rise of AI | Opportunity or threat?”, Dutchpower, *Amsterdam, Netherlands*
- 03/2024 **EPSRC Supergen Energy networks Hub Risk and Resilience Day** “Constraint-Driven Deep Learning for N-k Security Constrained Optimal Power Flow”, *Newcastle University, UK*
- 02/2024 **3rd Champéry Power Conference** “Weakly-supervised Graph Neural Networks for Distribution System State Estimation”, *Champéry, Switzerland*
- 11/2023 **Keynote speaker**, 33rd Workshop Computational Intelligence, *HTW Berlin, Germany*
- 11/2023 **Keynote speaker** “AI-based Monitoring for Sustainable Energy Systems”, Stichting Pipeliner - Symposium '23, *Gemeente Rotterdam, Netherlands*
- 08/2023 **Speaker** “Weakly supervised learning for power grid state estimation.” in session “Physics-based and data-driven modelling for digital twin.” 10th international conference on industrial and applied mathematics, *Tokyo, Japan*
- 07/2023 **Panellist** “AI to predict power blackouts” in panel session “Application of Big Data and AI/ML in monitoring, operations, planning and protection”, *IEEE PES General Meeting, Orlando, USA*
- 07/2023 **Panellist** “Graph Neural Networks for Distribution State Estimation” in panel session “Machine Learning and Modern Heuristic Optimization for Planning and Operation of Active Distribution Networks”, *IEEE PES General Meeting, Orlando, USA*
- 06/2023 **Panellist**, Panel Young Professionals Panel Session on Future Power System Workforce, *IEEE PES PowerTech, Belgrade, Serbia*
- 06/2023 **Panellist**, Panel Contemporary and emergent methods for planning and analysis of distribution networks, title “Graph Neural Networks for Distribution State Estimation”, *IEEE PES PowerTech, Belgrade, Serbia*
- 03/2023 **Round table discussion** “AI and ML for smart grids”, Smart Grid Tech Week, invited by Utilidata, Smart Grid Forums, *Amsterdam, Netherlands*
- 02/2023 **Invited speaker** “AI for Energy – Exploring activities and opportunities in the Netherlands” at a DOE - organized workshop on AI for Energy Innovation held in conjunction with 37th AAAI Conference on Artificial Intelligence, Washington DC, *US*
- 10/2022 **Plenary panellist in supersession on Stability, Dynamics, and Control of Emerging Renewable-Rich Power Systems**, *IEEE ISGT Europe, Novi Sad Serbia*
- 10/2022 **Plenary panellist in supersession on AI for active power networks**, *IEEE ISGT Europe, Novi Sad Serbia*
- 09/2022 **Keynote address** “AI for Distributed Energy Systems”, *Intelligent Systems Conference IntelliSys 2022, Amsterdam, Netherlands* <https://www.youtube.com/watch?v=80x3ebPWtLA> **100 attendees**
- 07/2022 **Plenary panellist**, “Machine Learning for Security Assessments in Low Inertia Grids”, *supersession on AI applications in Power Grid, IEEE PES General Meeting, Denver USA*
- 07/2022 **Panellist** “Multi-Agent Reinforcement Learning for Incentivized Flexibility from Residents”, in session *Advanced Applications of Modern Optimization and Artificial Intelligence Methods on Active Distribution Networks. IEEE PES General Meeting, Denver USA*
- 07/2022 **Panellist** “Learning to run a power network with trust”, in session *Enhancing power system operation through online analytics, IEEE PES General Meeting, Denver USA*
- 05/2022 **Panellist** “On Dynamics and Artificial Intelligence for Power Systems”, in session *Synchrophasor and Monitoring data handling: A perspective of ongoing TSOs approach, IEEE International Conference on Smart Grid Synchronized Measurements and Analytics, Split Croatia*
- 05/2022 **Panellist** “Artificial Intelligence Methods for DSA” in session *PMU- and AI-based analysis for a resilient operation of future power systems, IEEE International Conference on Smart Grid Synchronized Measurements and Analytics, Split Croatia*
- 10/2021 **Lightning talk**, World Summit AI, *Amsterdam, NL* <https://youtu.be/rkpWCiYNJcs> **50 attendees**
- 09/2021 **Keynote address** “AI: Real-Time Operations or Full Automation?”, *ISA Knowledge Days, Virtually, Columbia* **300 attendees**
- 08/2021 **Panellist** “Operational Resilience”, CIGRE Annual Meeting, Online, Paris
- 12/2019 **Presentation, IEEE Big Data & Analytics Webinar** <https://www.youtube.com/watch?v=X8VBSOE5is&t=1>
- 11/2019 **Panellist**, *IEEE Sustainable Power and Energy Conference, Beijing, China*, **100 attendees**
- 10/2019 **Keynote address** “A Student Perspective on Climate Change”, *AAPG Energy Transition Forum, Edinburgh, UK* **300 attendees** <https://www.youtube.com/watch?v=HGAY34cgdAo&t=1s>
- 08/2019 **Panellist**, “Data Analytic Tools for Security Assessment of Bulk Power Systems”, *IEEE PES General meeting, Atlanta USA*

Invited seminar talks

- 05/2025 Guest Lecture, *University of Liege, Liege, Belgium*
- 11/2024 Graph & Data Seminar, *Delft University of Technology, The Netherlands*
- 10/2024 Swiss Federal Laboratories for Materials Science and Technology, Urban Energy System, *Online, Zurich, Switzerland*
- 04/2024 Zagreb University of Technology “Power System State Estimation with Deep Learning”, *Zagreb, Croatia*
- 04/2024 Hitachi Energy Corporate Research, *Zurich, Switzerland*
- 04/2024 EU Joint Research Centre, *Ispira, Italy*
- 04/2024 ie3 Seminar, Dortmund University of Technology, *Dortmund, Germany*

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| 08/2023 | Invited visit University of Kyoto, <i>Kyoto, Japan</i> |
| 11/2022 | The Polytechnic University of Madrid, <i>Madrid, Spain</i> |
| 07/2022 | Hitachi Energy Corporate Research, <i>Mannheim, Germany</i> |
| 03/2022 | Lunch Lecture, TU Delft Energy Club, <i>Delft, Netherlands</i> |
| 03/2022 | The e-refinery annual workshop, TU Delft, <i>Netherlands</i> |
| 12/2021 | UK Digital Catapult: Accelerating UK-NL AI Collaboration towards Net Zero, <i>London, UK</i> |
| 10/2021 | Eindhoven University, Cyber-Physical Systems Center Eindhoven, <i>Eindhoven, Netherlands</i> , |
| 09/2021 | RTE, French TSO, R&D Department, <i>Paris, France</i> |
| 05/2021 | Groningen University, “Smart Grids Symposium”, Student Energy Chapter, <i>Groningen, Netherlands</i> |
| 05/2021 | AI for Energy and Sustainability Think Tank, TU Delft, <i>Delft, Netherlands</i> , |
| 04/2021 | „AI for the energy system“, Karlsruhe Institute of Technology, Institute of Applied Informatics, <i>Karlsruhe, Germany</i> |
| 02/2021 | “Supervised Learning to Prevent Blackouts in Power Systems”, ETH Zurich, Chair of Intelligent Maintenance Systems https://www.youtube.com/watch?v=mB5Adxw1idc |
| 11/2020 | AI Initiative Talk, TU Delft, <i>Delft, Netherlands</i> |
| 12/2019 | IEEE Big Data & Analytics Webinar https://www.youtube.com/watch?v=X8VBSOE5is&t=1 |
| 10/2019 | Energy Futures Lab Seminar series, Imperial College London, <i>London, UK</i> |

Other publicity

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| 05/2024 | Article “KI In Energietechnik”, Österreichischer Verband für Elektrotechnik e+i Magazin |
| 11/2023 | Blog post “Roadmap of Innovating with AI for Distribution Grids”, https://www.linkedin.com/pulse/roadmap-innovating-ai-distribution-grids-jochen-cremer-zugme |
| 10/2023 | Article, “Nvidia: AI solves problems of overcrowded power grid”, Telegraaf NL https://www.telegraaf.nl/financieel/815514148/nvidia-ai-lost-problemen-van-overvol-stroomnet-op |
| 10/2022 | Blog post “Discussing the opportunities and challenges for AI-based algorithms in distribution grids” https://www.linkedin.com/pulse/discussing-opportunities-challenges-ai-based-grids-jochen-cremer/ |
| 04/2022 | Article “In the future, power disruptions may follow in quick succession“, https://www.delta.tudelft.nl/article/future-power-disruptions-may-follow-quick-succession |
| 11/2021 | NLAIC video contribution to “AI for Energy Transition” https://www.youtube.com/watch?v=bZaFpHjH1VQ |
| 10/2019 | Blog post “Machine-Learning, distributed data and the grid”, Energy Futures Lab, London https://energyfutureslab.blog/2019/10/17/machine-learning-distributed-data-and-the-grid/ |

Leading and organising technical discussions

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| 09/2024 | Co-Organiser 14. (Hybrid) Symposium Communications for Energy System (COMFOREN), Vienna |
| 05/2024 | Organiser workshop for industry, “AI use cases for distribution networks”, Alliander |
| 03/2024 | Moderator Symposium “Wide area monitoring, and data-driven aspects for the future power system” Inauguration of Prof. Marjan Popov, Delft |
| 10/2023 | Moderator panel “Roadmap of Innovating with AI for Distribution Grids”, IEEE PES ISGT Europe 2023, Grenoble France |
| 09/2023 | Chair and organiser 7 th International DynPower Workshop, TU Delft |
| 06/2023 | Co-Chair technical session “Monitoring and control”, IEEE PES PowerTech Belgrade |
| 03/2023 | Organiser workshop “GNNs and RL for Energy System Planning and Operation”, Austrian Institute of Technology, Vienna, Austria |
| 10/2022 | Panel chair “Data analytics, machine learning, and artificial intelligence in smart grids”, IEEE European Conference on Innovative Smart Grid Technologies, Novi Sad, Serbia |
| 08/2022 | Panel chair “Advanced Applications of Modern Optimization and Artificial Intelligence Methods on Active Distribution Networks”, IEEE PES General Meeting, Denver, USA |
| 08/2022 | Panel chair “Data collection and future needs to account for the continuous growth of sensing data in control rooms”, IEEE PES General Meeting, Denver, USA |
| Since 04/2021 | Organizer, AI for E&S Think Tank Seminar Series, (bi-)weekly TU Delft, Rotterdam, Leiden University |
| 10/2021 | Panel moderator “Action-orientated innovations from the private sector” World Summit AI, <i>Amsterdam</i> |
| 12/2019 | Workshop, “Entrepreneurship, Climate Change, Impact”, <i>University of Leeds, UK</i> , |
| 07/2019 | Chair and moderator of the 3-day conference, International Student Energy Summit 2019 , London, UK 700 attendees |

Education

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| From 2025 | Lecturer in 4 ECTS course “Introduction to Machine Learning”, BSc Electrical Engineering, (~80 students) |
| Since 2024 | Profile coordinator “Digital Energy Technology”, MSc Sustainable Energy Technologies |
| Since 2024 | Responsible lecturer, course SET MSc “Machine Learning Workflows for Energy Systems” (~20 students) |
| 2024 | Professional training, 3-day workshop “AI for Electrical Systems” for industry Alliander & Stedin |

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| 2023 | Organiser, “Learning to Run a Power Network Challenge Delft” https://codalab.lisn.upsaclay.fr/competitions/12420 , National-wide PhD, Postdoc, and early-career training |
| 2023 | Organiser 3-day workshop “AI for Intelligent Energy Systems”, TU Delft |
| Since 2023 | Guest lecture in EE3065TU, Reliability of Sustainable Power Systems |
| Since 2022 | Guest lecture “AI for Intelligent Electricity Systems” in SET3065 TU Delft |
| Since 2022 | Coordinator and lecturer of EE 4C12 “Machine Learning for Electrical Engineering”, EE MSc course, TU Delft (~100 students) |
| 2022 | Lecture “Machine Learning for Energy Systems” in professional 1-year course X!Lead, TU Delft |
| 2021 | Coordinator, developer, lecturer of EE 4720 “Machine Learning for Power System Applications”, EE MSc course, TU Delft |
| 2021 | Tutor for Electronics Lab EPO1 “Booming Bass”, TU Delft |
| 2021 | Developer and lecturer of a module for MOOC “Intelligent and Integrated Energy Systems“, PowerWeb Institute, TU Delft |
| 2018 | Electronics Lab, Graduate Student Assistant, Imperial College London |
| 2017 | Mathematics 1-2, Graduate Student Assistant, Imperial College London |

Professional certifications

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| 11/2022 | University Teaching Qualification: supervision, course development, teaching and assessment, TU Delft |
| 2021 | Personal Development Program, TU Delft |

Working groups

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| Since 2024 | Verein Deutscher Elektrotechnik (VDE), Energietechnische Gesellschaft, Gremien „KI in der Netzleittechnik“ |
| Since 2022 | IEEE PES WG, “Application of Big Data Analytic on Transmission System Dynamic Security Assessment”, Pillar lead of a sub-group “Data-Driven methods for Low-Inertia Systems”, coordinating a technical report |
| Since 2023 | Linux Energy Foundation, working group on AI for Energy |
| Since 2022 | CIGRE WG 2.42, “The impact of the growing use of ML/AI in operation and control of Power Networks from an Operational perspective”, NL representative |
| Since 2021 | NL AI Coalition WG Energy and Sustainability |
| 2019-2022 | IEEE PES taskforce, “Application of Big Data Analytic on Transmission System Dynamic Security Assessment”, Active founding member, UK representative |
| 2017-2021 | CIGRE WG 2.25 “Operational Resilience”, UK representative and task-leader |
| 2019 | Climate Entrepreneurs Club, I founded this new club in London to ideate solutions to the local effects of climate change. The club is still active www.climateentrepreneurs.uk and hosts skill development and brainstorming sessions. |
| 2018 | IEEE student branch, I build the team to organize seminars and industrial visits at Imperial College London |

Editorial and reviewer service

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| 2025 | Associate Editor, <i>IEEE Transactions on Power Systems</i> |
| 2026 | Technical program committee, 24th Power System Computing Conference, Cyprus |
| 2025 | Technical program committee, 16th ACM International Conference on Future and Sustainable Energy Systems (ACM e-Energy), Rotterdam |
| 2025 | Guest editor for a special issue on “VSI:Stability Analysis of transmission system” <i>International Journal of Electrical Power Engineering</i> |
| 2024 | Technical program committee, 12th DACH+ Energy Informatics Conference, Lugano, Switzerland |
| 2024 | Technical program committee, 15th ACM International Conference on Future and Sustainable Energy Systems (ACM e-Energy), Singapore |
| 2024 | Guest editor for a special issue on “Big Data Analytics: Moving towards applications to maintain the secure operation of carbon-neutral power grids” <i>IEEE Open Access Journal of Power and Energy</i> , IF 2.8 |
| 2023 | Guest editor for a special issue on “explainable AI for smart grid” for <i>IEEE Journal of Emerging and Selected Topics in Industrial Electronics</i> , IF 4.5 |
| 2022 | Technical program committee IEEE ISGT Europe, Novi Sad, Serbia |
| 2021 | Guest editor for a special issue on “Applications of machine learning and statistical methods for dynamic security assessment on transmission systems”, <i>Sustainable Energy, Grids and Networks</i> , IF 2.5 |
| Since 2018 | Reviewer of around 100+ IEEE Transactions on Power Systems, IEEE Transactions on Smart Grid, IEEE Transactions on Sustainable Energy, IEEE Transactions on Energy Markets, Policy, and Regulation, International Journal of Electrical Power & Energy Systems, Electrical Power Systems Research |

Peer representation & community support

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| Since 2023 | Faculty advisor to IEEE PES Student Branch Chapter Delft University of Technology |
| 2018-2020 | Elected department PhD representative of 250 PhD and 100 masters. Led a group of 6 reps, initiated the exchange and monthly seminars and improved the academic environment with the management of the department |
| 2019 | Established & chaired IEEE PES Student Branch at Imperial College London |

Research projects

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| Since 2024 | AI-EFFECT, HORIZON-CL5-2024-D3-01-11, AI Testing and Experimentation Facility for the energy sector – bringing technology to the market |
| Since 2023 | Graph-based AI Monitoring Tools for Complex-Energy Systems, public-private partnership project, Topsector ICT |
| Since 2022 | Austrian Institute of Technology, Principal Scientist Program, Principal Investigator |
| Since 2022 | NWO LTP Robust Project “Trustworthy Artificial Intelligence” Co-Investigator TU Delft |
| Since 2022 | NWO Veni Project “physics-informed AI to predict power blackouts”, Principal Investigator |
| Since 2021 | MEGAMIND: Measuring, Gathering, Mining and Integrating Data for Self-management in the Edge of the Electricity System, NWO Perspective Program, a supervisor from TU Delft |
| 2017-2020 | Industrial R&D project, RTE, French transmission system operator |
| 2016 | EU H2020 project FLEXMETER, work package “Energy management of heat pumps for the benefit of distribution system operators”, at E.ON Energy Research Centre, Aachen |
| 2015 | Industrial project with BASF, “Design of micro chemical reactors considering energy and mass balances” at Process Systems Engineering Group |

Postdoctoral researchers

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| Since 2025 | Sakshi Sharma, “Data Synthetistion for Machine Learning in Power Systems” |
| Since 2024 | Jochen Stiasny, “Learning Surrogate Models for Physical Systems” |

PhD candidates as the main supervisor

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| Since 2025 | Selin Ezgi Özcan, “Machine Learning for Distribution System State Estimation”, TU Delft, Stedin |
| Since 2025 | Daniel Wieser, “Virtual Power Plants for Trading”, TU Delft, Austrian Institute of Technology |
| Since 2025 | Paul Bannmüller “Reinforcement Learning in Topology Reconfigurations”, TU Delft |
| Since 2024 | Betül Mamudi “Machine Learning for State Estimation”, TU Delft, Alliander |
| Since 2024 | Perine Cunat “AI for Modelling Heating and Electricity Networks”, TU Delft, Austrian Institute of Technology |
| Since 2024 | Luca Hofstadler “Quantum Computing for Transmission Systems”, TU Delft, Austrian Institute of Technology |
| Since 2023 | Runyao Yu “Machine Learning for Outliers in Grids Operations and Intraday Energy Markets”, TU Delft, Austrian Institute of Technology |
| Since 2023 | Olayiwola Arowolo “Neural Networks for Electromagnetic Transients”, TU Delft |
| Since 2022 | Basel Morsy “Reinforcement Learning for Topological Reconfigurations”, TU Delft, Austrian Institute of Technology |
| Since 2022 | Viktor Zobernig “Reinforcement Learning for Trading Strategies in Redispatch Markets”, TU Delft, Austrian Institute of Technology |
| Since 2022 | Haiwei Xie, “Control of Dynamic Virtual Power Plants”, TU Delft |
| Since 2021 | Demetris Chrysostomou, “Estimating Flexibility of Distribution Grids at TSO/DSO interface”, TU Delft, MEGAMIND program |
| Since 2021 | Ali Rajaei, “System-theoretic Machine Learning for Congestion Management” TU Delft, TU Delft AI Initiative |
| Since 2021 | Mert Karagelebi, “Neural Networks for Dynamic Security Assessment” TU Delft, TU Delft AI Initiative |
| 2019-2023 | Al-Amin Bugaje, “Data Augmentation for Power System Security Assessment”, Imperial College London, now at Hitachi Energy, Canada |
| 2018-2022 | Federica Bellizio, “Topological Changes in Data-Driven Dynamic Security Assessment for Power System Control”, Imperial College London, now at Swiss Federal Laboratories for Materials Science and Technology |

PhDs evaluated as external reviewer

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| 2025 | “Providing Flexibility Services to the Power System Using Demand Response and Hydrogen Technologies”, Nikolina Čović, Zagreb University, Croatia |
| 2025 | “Predictive Maintenance of Medium Voltage Cable Networks using Machine Learning”, Konrad Sundsgaard, DTU Technical University of Denmark, Denmark |
| 2024 | “Segmentation of the electricity network for smart grid management”, Noureddine Henka, Université Paris-Saclay, France |
| 2024 | "Essential Tools and Strategies for the Participation of Battery Energy Storage Systems in Ancillary Services." Javier Cardo, Universitat Jaume I de Castelló, Spain |
| 2023 | “Advanced methods for enhancing interpretability of AI tools with application to the energy sector”, Konstantinos Parginos, MINES Paris, France |

MSc student supervisions

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| 2025 | “Tap changer level estimation with Graph Neural Networks”, Soham Prajapati, Stedin and TU Delft, supervised by Tamas Keviczky |
| 2025 | “Information theory for dynamic virtual power plants” Wim Verschuren, Haiwei Xie, Mathijs de Weerd, TU Delft |
| 2025 | “Interpretable Intraday Price Prediction Integrating Kolmogorov-Arnold Networks and Large Language Models” Ruochen Wu, Runyao Yu, Peyman Mohajerin Esfahani, AIT, TU Delft |
| 2025 | “Machine Learning for Power Systems”, Yusuwan Chang, TU Delft |
| 2025 | “Evolutionary algorithms for Modelling-to-Generate-Alternatives applied to energy systems”, Max Le Bansch, Perine Cunat, Neil Yorke Smith, AIT, TU Delft |
| 2025 | “ML for Dynamics in Power Systems”, Ananth Rajagopal, TU Delft |

- 2024 “Algorithms for Distribution Grid Expansion”, Sven van der Voort, TU Delft, supervised in collaboration with Algorithmic group, Neil Yorke-Smith
- 2024 “Reinforcement Learning for Congestion Management”, Thomas Lautenbacher, TU Delft and TU Berlin
- 2024 “Incentive-Based Community Management with Network Constraints”, Michal Okon, TU Delft
- 2024 “Stable Diffusion for Energy-system Optimized Solar Nowcasting”, Oscar Lopez, TU Delft and Hitachi Energy
- 2024 “User-centric EV charging cycles to maximise battery lifetime”, Viviana Kleine, TU Delft and Porsche
- 2023 “Reinforcement Learning for Coordinating Energy communities”, Catarina Santos Neves, TU Delft in collaboration with Instituto Superior Técnico, Lisbon, Portugal
- 2023 “Market mechanisms for Frequency Service provided by Dynamic Virtual Power Plants”, Torben Zeller, TU Delft in collaboration with RWTH Aachen University
- 2023 “Quantum Computing for Power Systems” Hjalmar Lindstedt, TU Delft
- 2023 “Market Mechanism Design for Virtual Inertia”, Johnny Zheng, TU Delft
- 2023 “Reinforcement learning for transmission network topology control” Geert-Jan Meppelink, TU Delft, in collaboration with NTNU, Trondheim, Norway
- 2023 “Neural Ordinary Differential Equations for Frequency Dynamics” Nila Krishnakumar, TU Delft
- 2023 “End-to-end learning for N-k SC-OPF” Bastien Giraud, TU Delft, in collaboration with NTNU, Trondheim, Norway
- 2023 “Data-Driven Adaptive Dynamic Equivalents of Active Distribution and Transmission Networks” Alex Neagu, TU Delft
- 2022 “Multi-Modal End-to-End Learning for Real-Time Monitoring of Sustainable Energy Systems”, Rushil Vohra, TU Delft
- 2022 “Meter placement for state estimation in distribution networks”, Sattama Datta, TU Delft, thesis with Alliander, DSO Netherlands
- 2022 “Deep Statistical Solver for Distribution System State Estimation” Benjamin Habib, supervised with Multimedia Computing Group TU Delft thesis with Stedin, DSO Netherlands
- 2021 “Multi-agent reinforcement learning for incentive-based residential demand response”, Jasper van Tilburg, supervised in collaboration with Interactive Intelligence Group TU Delft, now Ciphix, Netherlands, **ranked as top student-led paper at IEEE PowerTech Belgrade 2023 conference** (*prize not awarded as formal requirements not met*).
- 2021 “Detection and Classification of Faults in Small-Scale Residential PV Systems with a Synthetic PV Training Database” Dion de Mooy, supervised in collaboration with PVMD group, TU Delft, now Zonnepark Services, Netherlands,
- 2020 “Application of Machine Learning for assessing grid security performance”, Haiwei Xie, Imperial College London, **awarded best MSc thesis, now PhD student TU Delft**
- 2020 “Application of Machine Learning for assessing grid security performance”, Ailing Guo, Imperial College London, now State Grid, China
- 2019 “Security Analysis of Electrical grids using Machine Learning”, Al-Amin Bugaje, Imperial College London, now PhD student Imperial College London

Academic visitors

- 2024 Thomas Lautenbacher, TU Berlin, Erasmus+ Scholarship
- 2023 Torben Zeller, Erasmus+ Scholarship, graduate researcher, RWTH Aachen University
- 2022 Nikolina Čović, PhD researcher University of Zagreb, Croatia
- 2021 Dariush Wahdany, graduate researcher, RWTH Aachen, IDEA league fellowship, now PhD at Fraunhofer Institute, Berlin