

## Jiajie Luo

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### Voluntary Work Experience

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| <b>Secretary</b>   | <b>CIGRE UK Technical Committee</b>     | 10/2022 - present |
| <ul style="list-style-type: none"><li>• Produce technical documentation.</li><li>• Organise Technical Committee events and meetings.</li><li>• Manage Technical Committee Knowledge Management System (KMS).</li></ul>   |   |                   |
| <b>Secretary</b>   | <b>CIGRE B4/C4.93 JWG Grid Forming</b>  | 07/2022 - present |
| <ul style="list-style-type: none"><li>• Coordinate over 60 JWG experts worldwide from industry and academy.</li><li>• Contribute to JWG technical brochure.</li></ul>  |   |                   |
| <b>Vice Chair</b>  | <b>CIGRE UK Next Generation Network</b> | 11/2022 - present |
| <ul style="list-style-type: none"><li>• Provide support to the NGN Chair and other Steering Committee members, in particular delivering events and charring meetings.</li><li>• Coordinate information for NGN Members and handle general NGN queries.</li></ul> |   |                   |
| <b>Secretary and Treasurer</b>   | <b>CIGRE UK Next Generation Network</b> | 10/2021 – 11/2022 |
| <ul style="list-style-type: none"><li>• Managed NGN budget and forecast.</li><li>• Coordinated between NGN teams and steering committee.</li></ul>   |   |                   |

### Professional Work Experience

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| <b>Advanced Software and Control Engineer</b>   | <b>Siemens Gamesa, UK</b>        | 08/2023 - present |
| <b>Software and Control Engineer</b>  |                                  | 03/2019 - 07/2023 |
| <ul style="list-style-type: none"><li>• Design software and control features for wind turbine converter, ensuring satisfactory generator and grid connection performance.</li><li>• Diagnose and conduct root cause analysis on wind farm site issues.</li><li>• Maintain and update the Functional Description document for converter control.</li></ul> |                                  |                   |
| <b>Product Engineer</b>   | <b>3D Engine Ltd, Birmingham</b> | 04/2016 – 12/2018 |
| <ul style="list-style-type: none"><li>• Developed and tested the control and communication system of 3D scanner</li><li>• Product documents writing and GUI development.</li><li>• Communicated with the hardware sector in the Oxford branch.</li></ul>  |                                  |                   |
| <b>Research Assistant</b>   | <b>University of Birmingham</b>  | 07/2018 – 03/2019 |
| <ul style="list-style-type: none"><li>• State Grid GEIRI Europe Project: Control Strategy of Multiple Applications of Virtual Synchronous Machines.</li><li>• R&amp;D on Virtual Inertia Control and analysed its impact on existing grid stability.</li><li>• Reviewed peer papers from IET and IEEE.</li></ul>  |                                  |                   |
| <b>Teaching Assistant</b>   | <b>University of Birmingham</b>  | 9/2015 - 03/2019  |
| <ul style="list-style-type: none"><li>• Supervised BEng and MSc projects on various converter control, HVDC and power electronics topics.</li><li>• Assisted in tutorials, labs, presentation evaluation and assignment/thesis marking.</li></ul>   |                                  |                   |

### Education

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**PhD in Electrical and Electronic Engineering**    **University of Birmingham**    09/2015 – 06/2019

- Developed novel control methods for power electronic converters and wind generators, including modulation of semiconductor devices.
- Modelled and simulated (MATLAB/Simulink, PSCAD, RTDS) power systems with converters and wind generations and studied steady state and transient performance.
- Analysed costs and evaluated technologies in offshore wind farm projects and developed strategies for offshore wind power generation and grid connection.
- Optimised power system stability when Virtual Synchronous Machine controlled converters and energy storage are connected.
- Scholarship from School of Engineering, University of Birmingham.

**BEng in Electrical and Electronic Engineering**    **University of Birmingham**    09/2013 – 06/2015

- First Class degree. Ranked top 5 in the department.
- Final year project: Optimised Energy Management of Smart Grid with Electric Vehicles and Wind Energy Generations.
- Key modules: Power Electronics Applications; Object-orientation Program Designing; Electrical Power Transmission and Distribution; Electric Drive and Control Systems; Data Mining; Digital Systems and Embedded Computing.

**BEng in Electrical and Electronic Engineering**    Wuhan, China    09/2011 – 08/2013

**Huazhong University of Science and Technology**

- Member of Mechanical Innovation Base: Robotic components design, drawing and software modelling (CAD, Solidworks).
- Academic Excellence Scholarship.

## Publications

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- J. Luo, K. Lin, J. Li, Y. Xue and X. P. Zhang, **Cost Analysis and Comparison between Modular Multilevel Converter and Modular Multilevel Matrix Converter for Offshore Wind Power Transmission**, 15<sup>th</sup> IET Int. Conf. on AC DC Power Transmission, 2019.
- J. Luo, X. P. Zhang, Y. Xue, K. Gu and F. Wu, **Small Signal Model of Modular Multilevel Matrix Converter for Fractional Frequency Transmission System**, IEEE Access, 2019.
- J. Luo, X. P. Zhang and Y. Xue, **Harmonics Analysis of Modular Multilevel Matrix Converter for Fractional Frequency Transmission System**, IEEE Trans. on Power Delivery, 2020.
- K. Gu, F. Wu, X. P. Zhang, P. Ju, H. Zhou, J. Luo, and J. Li, **SSR Analysis of DFIG-Based Wind Farm With VSM Control Strategy**, IEEE Access, 2019.

## Skills

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- **Event organising skills**  
CIGRE NGN UK-France joint webinar 2022  
2018 UK-China Future Energy Systems Development Forum.  
2018 IEC TC115 Joint Working Group Meeting.
- **Leadership skills**  
Vice chair of CIGRE UK NGN.  
Team lead of Public Relations Department, Student Union of Huazhong University of Science and Technology.