

Baihan Liu

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Education

- PhD. Student** *École Polytechnique Fédérale de Lausanne, EPFL* **Lausanne, Switzerland** 10/2025 - now
- MSc.in Electrical Engineering** *Technical University of Denmark* **Lyngby, Denmark** 09/2023 - 09/2024
GPA: 10.8/12
Relevant Courses: Optimization in modern power system, Integration of Wind Power in the Power System, Offshore Wind Grid Connection and HVDC Transmission, Wind, Solar, and Energy Storage Electrical Drive Trains.
- B.E.in Electrical Engineering** *Northeast Electric Power University* **Jilin, China** 09/2019 - 06/2023
GPA: 85.9/100
Relevant Courses: Power Electronics Technology, Power System Analysis, Electrical Machinery, Control Theory, Power System Protection.

Relevant Project Experience

- Stability Investigation of Denmark's 100% Power Electronics Based Energy Islands** **Master** 09/2023 - 01/2024
- The control, modeling, and general stability analysis methods of Modular Multilevel Converter are studied.
 - **PSCAD** is used to verify the conclusions.
- GaN-based synchronous rectification for multi-megahertz applications** **Master** 02/2024 - 06/2024
- Design techniques for high-speed PCBs were studied (with the rectifier designed to operate at 6.78 MHz)
 - A dead time calculator is developed for high-frequency synchronous rectifiers
- Study on the voltage support capability of BESS for offshore wind farms** **Master** 10/2024 - 12/2024
- **DIgSILENT PowerFactory** used to simulate
 - A **Python** script is developed to automate simulations, enabling large-scale case studies.
- Research on Assessment Methods for Frequency Support Capability of Grid-Connected Doubly Fed Induction Generator** **Bachelor** 08/2022 - 01/2023
- The virtual inertia control and rotor speed recovery of doubly fed wind turbines are studied.
 - The model is verified in the **DIgSILENT PowerFactory**
 - **Python** is used to interact with **PowerFactory**, facilitating data extraction and analysis.

Skills

- **Power flow calculation:** PowerFactory, Matlab (PSAT)
- **EMT tools:** PSCAD, Matlab/Simulink
- **HIL Simulation:** PLECS/RT-Box
- **Programming:** Python, Matlab
- **Hardware Design:** Altium Designer, Multisim, Verilog

Languages

- **English** [Fluent]
- **Chinese** [Native]