

# KAIJIA HUANG

Student in MSc Sustainable Energy in Technical University of Denmark | tel: 53890790 | s192125@student.dtu.dk

## SUMMARY

- 6 years electrical design experience in nuclear power industry.
- Strongly interest in renewable energy grid integration, power system stability and control.
- Self-motivated, problem-solving and collaborative student with excellent communication skills.
- Professional skilled in electrical engineering, experienced programming in Matlab and Python.

## INTEREST AREA OF RESEARCH

- Power system dynamics, stability and control, when integrating large scale of renewable sources.
- Applying variate of simulation techniques in terms of studying power system robustness.
- Power system relevant data mining and machine learning application.

## EDUCATION

- MSc, Sustainable Energy- Study Line in Wind Energy, Technical University of Denmark, 2019-2021
- MSc, Power System Engineering, The University of Manchester, 2013
- BEng, Electrical and Electronic Engineering, Cardiff University, 2012
- Bachelor, Electrical Engineering and Automation, Nourth China Electric Power University, 2012

## EMPLOYMENT EXPERIENCE

**China Nuclear Power Engineering co.ltd** Oct 2013 to July 2019

- Expertise in designing, troubleshooting, updating the electrical power systems for HPR1000 nuclear power plants. Prepare engineering documents.
- Conduct detail design of cable works, load lists, switchboards, junction cabinets and control scheme, diesel generator sets, transformer and protective devices, layout plan, etc.
- Reviewing, clarifying and negotiating technical documents from vendors and fabricators.
- Managing interfaces with shareholders, vendors, the other disciplines and project managers.
- Support sales team, site engineers to ensure the project delivery quality and time of launching.

## TECHNICAL SKILLS

- **Electrical Engineering:** Power system analysis and simulation; Wind power grid integration
- **IT:** Matlab/Simulink, RSCAD, WASP, PowerFactory, Python, Beginner Machine Learning
- **Electronic Lab:** Breadboard circuit assembling, soldering, handling oscilloscopes, Labview, etc.
- **Wind Energy:** Modelling wind-wave impacted aerodynamics and structure dynamics of wind turbine and its foundation.

## RESEARCH EXPERIENCE

**Technical University of Denmark** MSc Coursework  
*Sept 2019 to present*

- Power system modelling with renewable source with Matlab/Simulink, and DigSILENT - PowerFactory (Start at Sept 2020).
- Use RSCAD and RTDS hardware to preform power system dynamic study and hardware-in-the-loop test.
- Model wind-wave climate and its aerodynamics on wind turbine structure with Matlab.

**China Nuclear Power Engineering co.ltd** 2017

- Nuclear island junction boxes design optimisation
- Nuclear island electrical equipment seismic fragility assessment (joint Simpson Gumpertz & Heger)

**The University of Manchester** MSc Thesis  
*Identification of Probabilistic Distribution of Electromechanical Modes.* 2013  
Supervised by Prof. Jovica V. Milanović.

- Comparison study on numerical and analytical methods on probabilistic power system eigenmodes estimation.
- Small signal stability analysis with Matlab and 'Matpower' package.
- Processing simulation data; mathematical model regression.

**Cardiff University** Bachelor Project  
*Comparative study of I-V measurements based on current source technique and voltage source technique.* 2012  
Supervised by Prof. Gao Min

- Conducting measurement in electronic lab
- Design and craft a device to hold a thermal-electric specimen.
- Analysing and visualising measurement data.

## PUBLICATIONS

---

- R. Preece, **K. Huang** and J. V. Milanović, "Probabilistic Small-Disturbance Stability Assessment of Uncertain Power Systems Using Efficient Estimation Methods," in IEEE Transactions on Power Systems, vol. 29, no. 5, pp. 2509-2517, Sept. 2014  
**Main Contribution:** Comparison study on the Monte Carlo (MC), Two Point Estimate method, Gram Charlier method and Probability Collocation Method (PCM) in terms of efficiency and compatibility.
- R. Preece, **K. Huang** and J. V. Milanović, "Comparison of point estimate and cumulant techniques for efficient estimation of critical oscillatory modes," 2014 IEEE PES General Meeting | Conference & Exposition, National Harbor, MD, 2014, pp. 1-5