# Yuxiong Huang

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## EDUCATION

2017– PhD in Electrical Engineering, Xi'an Jiaotong University, China

2013–2017 BSc in Electrical Engineering, Xi'an Jiaotong University, China

## RESEARCH AREA

My work is mainly related to the application of mathematical modeling and machine learning methods to the energy sector, especially the reliability and resilience analysis of smart distribution grids. I am trying to use machine learning techniques (especially deep learning and reinforcement learning) to improve the efficiency and feasibility of reliability/resilience evaluation of complex systems under uncertainty.

## PUBLICATIONS

### PEER-REVIEWED

2020 Li G, **Huang Y**, Bie Z, Ding T. Machine-learning-based reliability evaluation framework for power distribution networks. *IET Generation, Transmission & Distribution*. doi:10.1049/iet-gtd.2019.1520.

2019 Li G, **Huang Y**, Bie Z, AN J, Sun S, Qiu Q, Gao X, Peng Y, Lei Y. Review and prospect of operational reliability evaluation of integrated energy system. *Electric Power Automation Equipment*. doi:10.16081/j.epae.201908040.

2018 Li G, **Huang Y**, Bie Z. Reliability evaluation of smart distribution systems considering load rebound characteristics. *IEEE Transactions on Sustainable Energy*. doi:10.1109/TSTE.2018.2810220.

2017 **Huang Y**, Li G, Bie Z, Kou Y, Jiang J. Reliability evaluation of distributed integrated energy systems. *Smart Power*. doi:10.3969/j.issn.1673-7598.2017.07.008.

### PEER-REVIEWED CONFERENCE PROCEEDINGS

2019 **Huang Y**, Li G, Wang J. Perceptron learning model based reliability evaluation method of medium voltage electrical distribution networks. *Proceeding of ICAE2019: The 11th International Conference on Applied Energy*.

2018 Bian Y, Bie Z, **Huang Y**, Bie Z. Interaction strategy of user side storage devices for the day-ahead dispatch of distributed integrated energy systems. *2018 China International Conference on Electricity Distribution (CICED)*. doi:10.1109/CICED.2018.8592364.

2017 **Huang Y**, Li G. Reliability evaluation of distributed integrated energy systems via Markov chain Monte Carlo. *2017 IEEE Conference on Energy Internet and Energy System Integration (EI2)*. doi:10.1109/EI2.2017.8245412.

### MANUSCRIPTS UNDER REVIEW

2021 **Huang Y**, Li G, Bian Y, Qian T, Bie Z. Resilience-oriented microgrids formation using deep reinforcement learning. *submitted to IEEE Transactions on Smart Grid*.

2021 Bian Y, Chen C, **Huang Y**, Catalão J P S, Bie Z. Optimal restoration for resilient distribution systems coordinated with damage assessment. *submitted to IEEE Transactions on Power Systems*.

2021 **Huang Y**, Li G, Zhang L, Bie Z. Dynamic load restoration of resilient power distribution system with microgrids: a deep reinforcement learning method. *submitted to Automation of Electric Power Systems*.

## AWARDS & HONOURS

2020 Second Prize of Excellent Paper Award of Shaanxi Society for Electrical Engineering.

2018 National Scholarship for Postgraduate students. Award ID: 2018.14283. Amount: 20,000 CNY.

2018 National Second Prize of "HUAWEI Cup" The 15th China Post-Graduate Mathematical Contest in Modelling. Award ID: B2018200628.

2016 UHV (Ultra High Voltage) Scholarship. Amount: 10,000 CNY.

2016 National Second Prize of The 9th National University Student Social Practice and Science Contest on Energy Saving & Emission Reduction. Award ID: 2016A-B-019.

## PROJECTS

I participate in the following projects as a PhD student.

2019– Researches on model-data hybrid driven operational reliability evaluation of integrated energy systems. National Natural Science Foundation of China (Grant No.51977168). 01/2020-12/2023.

2017–2019 Researches on the model and algorithm of reliability evaluation for integrated energy system. National Natural Science Foundation of China (Grant No.51607136). 01/2017-12/2019.

2017–2021 Basic theory for the planning, operation and markets of Energy Internet. National Key Research and Development Program of China (Grant No.2016YFB0901900). 06/2016-06/2020.

## TECHNICAL SKILLS

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|---|---|
| Languages | Chinese, English |
| Programming | Python, C/C++, Matlab, LaTeX |
| Tools | TensorFlow, PyTorch, CVX, Gorubi, OpenDSS |