Shengpu Gao

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39 Zhongxin 1st Rd, Futian District, Shenzhen, China

Education

- **Chongqing University**, Chongqing, China Sep. 2018— Jul. 2021
  M. E. in Electrical Engineering
  Thesis: Wind/Photovoltaic Power Time Series Generation and Scenarios Reduction Methods for Power System Planning
  Supervisor: Prof. Bo Hu & Prof. Kaigui Xie
- **Hefei University of Technology**, Hefei, China Sep. 2014—Jun. 2018
  B. E. in Electrical Engineering (Sep. 2014—Sep. 2015, major in computer science)
  Thesis: Power System Reliability Evaluation Based on Pseudo-sequential Monte Carlo Method
  Ranking: 1/200, GPA: 3.79/4.3

Academic Publications

Journal Publications

- ***Shengpu Gao***, Bo Hu*, Kaigui Xie, Tao Niu, Chunyan Li, Jiahao Yan, "Spectral clustering based demand-oriented representative days selection method for power system expansion planning", *International Journal of Electrical Power & Energy Systems*, vol. 125, p. 106560, Feb. 2021. (JCR Q1, IF = 5.66)
- Yufei Li, Bo Hu*, Tao Niu, ***Shengpu Gao***, Jiahao Yan, Kaigui Xie, Zhouyang Ren, "GMM-HMM-Based Medium- and Long-Term Multi-Wind Farm Correlated Power Output Time Series Generation Method", *IEEE Access*, vol. 9, pp. 90255–90267, 2021. (JCR Q2, IF = 3.48)
- Jianfeng Li*, ***Shengpu Gao***, Yan Li, Junfu Lyu, Zhihong Gao, "Exergy Efficiency Analysis of Heating Steam Pipeline for Cogeneration Power Plant", *Electric Power* (in Chinese), vol. 51, no. 09, pp. 53–58, 2018.

Conference Publications

- ***Shengpu Gao***, Yufei Li, Jun Zhong, "Generation Method for Medium and Long-term Photovoltaic Power Time Series Considering Variable Order Time Series Characteristics", in *IEEE IAS Industrial & Commercial Power System Asia*, Chongqing, China, 2023. (accepted)
- ***Shengpu Gao***, Yunxiang Zhang, "A Deep-Learning Based Method for Real-Time Insulator Detection in Power System", in *5th International Conference on Energy Storage and Intelligent Vehicles*, Beijing, China, 2023, pp.644-651.

Student Scholarships and Awards

Postgraduate Stage	• **Excellent Master's Thesis of School of Electrical Engineering, CQU (top 10%)**	Jun. 2021
	• Excellent postgraduate of CQU	Nov. 2020
	• A-level academic scholarship of CQU	3 times in 2020, 2019, 2018
Undergraduate Stage	• Excellent Graduate of HFUT (top 10%)	Jun. 2018
	• Merit student of HFUT (top 10%)	Twice in 2017, 2016
	• First-class Scholarship of HFUT (top 3%)	3 times in 2017, 2016, 2015
	• Excellent merit student of HFUT (top 1%)	Dec. 2015
	• **National Scholarship (top 1%)**	Nov. 2015

Research Experience

- **Incorporating multiple characteristics and deep reinforcement learning in power restoration task assignment decision** Jun. 2022—Present
  Natural Science Foundation of China under Grants 52007016
  - Investigated deep reinforcement learning in power restoration task assignment decisions and reproduced related algorithms.
- **Technology and application of wind power / photovoltaic power prediction for promoting renewable energy consumption** Sep. 2018—Jul. 2021
  National Key R&D Program of China (2018YFB0904200) & eponymous Complement S&T Program of State Grid Corporation of China (SGLNDKOOKJJS1800266)
  - The spatiotemporal statistical characteristics of renewable energy and the simulation techniques of renewable energy output sequences were investigated.
  - As the student leader, he wrote technical reports, communicated with other sub-project institutes, and organized project technical meetings.
- **Power System Reliability Analysis** Sep. 2018—Jul. 2021
  National Science Fund for Distinguished Young Scholars (No. 51725701)
  - Investigated the defense and recovery strategies of the power systems under the influence of extreme climates, reproduced related top papers, and wrote project technical reports.
- **Research and application of key technology of power system reliability assessment based on big data** Dec. 2019—Dec. 2020
  Science and Technology Project of State Grid Corporation (5100-201999332A-0-0-00)
  - Investigated the clustering techniques for renewable energy data and the algorithms for reliability assessment and wrote project technical reports.

Professional Experience

- **Shenzhen Power Supply Co., Ltd., China Southern Power Grid (CSG)** Jul. 2021—Present
  Occupation: Project manager at Artificial Intelligence Branch, Information Center
  Projects in charge:
  - Research on automated training of image recognition algorithm for power grid inspection
    Science and Technology Project of China Southern Power Grid (090000KK52220006)
  - Object detection models development for transmission and substation inspection
  - Conference speech transcription software development

Skills and Language Proficiency

- English: ➢IELTS: 6.5 ($\geqslant$ 6.0 in every sub-band) ➢ Duolingo: 110
- Programming: ➢ MATLAB: advanced ➢ Python: intermediate ➢ C++: intermediate
- Software: ➢ Gurobi: advanced ➢ Pytorch: intermediate ➢ Matpower: intermediate

Research Interests

- Power System Optimization
- Reliability Assessment
- Renewable Energy Prediction and Simulation
- Integrated Energy System