Jiaqi Wu

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Education

Arizona State University — Aug. 2021 – Expected in 2025
Doctor of Philosophy, Electrical Engineering — *Tempe, Arizona, United States*

Arizona State University — Aug. 2019 – May 2021
Master of Science, Electrical Engineering — *Tempe, Arizona, United States*

Shandong University — Sept. 2013 – June 2017
Bachelor of Science, Electrical Engineering — *Jinan, Shandong, China*

Xi'an Jiaotong University — Sept. 2014 – June 2015
Exchange Program with Shandong University — *Xi'an, Shaanxi, China*

Experience

Research Assistant — Aug. 2021 – Present
Arizona State University — *Tempe, Arizona, United States*

- Assist in technical projects and data collection.
- Conduct independent research.
- Prepare slides and reports as needed.

Teaching Assistant — Aug. 2021 – May 2022
Arizona State University — *Tempe, Arizona, United States*

- Head TA for EEE 360: Energy Systems and Power Electronics
- EEE 360 is the core course for power area undergraduate students.

Graduate Service Assistant — Dec. 2020 – Aug. 2021
Arizona State University — *Tempe, Arizona, United States*

- Assist in data collection.
- Prepare slides and reports as needed.

Undergraduate Service Assistant — Mar. 2013 – June 2014 | Sep. 2015 – June 2016
Shandong University — *Jinan, Shandong, China*

- Resolve faculty and student inquiries.
- Facilitate faculty-student communication.

Publications

1. **Jiaqi Wu**, Jingyi Yuan, Yang Weng, and Raja Ayyanar, "Spatial-Temporal Deep Learning for Hosting Capacity Analysis in Distribution Grids," in *IEEE Transactions on Smart Grid*, vol. 14, no. 1, pp. 354-364, Jan. 2023, doi: 10.1109/TSG.2022.3196943.

2. **Jiaqi Wu**, Jingyi Yuan, Yang Weng, and Raja Ayyanar, "Learn Dynamic Hosting Capacity Based on Voltage Sensitivity Analysis," *2023 IEEE Power & Energy Society General Meeting (PESGM)*, Orlando, FL, USA, 2023, pp. 1-5, doi: 10.1109/PESGM52003.2023.10252543.

Honors & Awards

University Graduate Fellowship — Arizona State University, 2021
Electrical Engineering Department Scholarship — Arizona State University, 2021-2022
Excellent Graduation Thesis of School of Electrical Engineering — Shandong University, May 2017
Third Prize — China National Undergraduate Electronics Design Contest, Dec. 2015
Second Campus Scholarship — Shandong University, 2014

Projects

U.S. Department of Energy Solar Energy Technologies Office (SETO) Aug. 2020 – Mar. 2023

- **Funding Program:** **A**dvanced **S**ystems **I**ntegration for **S**olar **T**echnologies (ASSIST)
- **Project Name:** Enhancing Grid Reliability and Resilience through Novel DER Control, Total Situational Awareness, and Integrated Distribution-Transmission Representation
- **Award Number:** DE-EE0008773
- Develop spatial-temporal long short-term memory (ST-LSTM) dynamic hosting capacity analysis tool and integrate it to the a cloud-based end-to-end solar energy optimization platform (e-SEOP).

U.S. Department of Energy Solar Energy Technologies Office (SETO) Aug. 2021 – Aug. 2022

- **Funding Program:** **S**olar **E**nergy **T**echnologies **O**ffice Fiscal Year 2020 (SETO 2020)
- **Project Name:** Artificial Intelligence for Robust Integration of AMI and PMU Data to Significantly Boost Renewable Penetration
- **Award Number:** DE-EE0009355
- Artificial intelligence for robust integration of advanced metering infrastructure (AMI) and phasor measurement unit (PMU) data to significantly boost renewable penetration using generative adversarial networks (GAN).

Oncor Electric Delivery July 2023 – Present

- **Project Name:** Distribution Grid Topology Identification
- Design the shape-aware search algorithm for connection refinement.

Air Force Office of Scientific Research (AFOSR) Nov. 2023 – Present

- **Funding Program:** YIP Finalist Award with the Same YIP Award
- **Project Name:** Digital Twin Deep Neural Networks for Next-Generation DDDAS Monitoring and Control
- Design the physics regularization for input convex neural network (ICNN) and conducted voltage regulation experiments.

Skills

Programming Languages: Python, MATLAB
Libraries: PyTorch, pandas, NumPy, Matplotlib
Software: OpenDSS, MATPOWER, CYME, PLECS, OPAL-RT

Courses

EEE 572: **Advanced Power Electronics (A)**
EEE 577: **Power Energy Operations and Planning (A)**
EEE 579: **Power Transmission and Distribution (A+)**
CSE 575: **Statistical Machine Learning (A)**
EEE 511: **Artificial Neural Computation (A)**
EEE 598: **Game-Theory: Models, Algorithms and Applications (A+)**
EEE 598: **Reinforcement Learning in Robotics (A)**
EEE 598: **Power System Reliability (A)**
EEE 598: **Renewable Electric Energy Systems (A+)**