

Yaze Li

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EDUCATION

•University of Arkansas

PhD, Electrical Engineering

August 2023

Fayetteville, AR

Thesis: Achieving High Renewable Energy Integration in Smart Grids with Machine Learning

•Tsinghua University

BS, Electrical, Electronics and Communication Engineering

July 2017

Beijing, China

SKILLS

- **Programming Languages:** Python, MATLAB, R, C, MySQL
- **Machine Learning Frameworks:** Tensorflow, PyTorch, NumPy, Pandas, Stable Baselines
- **Engineering Tools:** Simulink, PSS/E, TARA, OPAL-RT, LabVIEW, L^AT_EX, AMPL, Jupyter
- **Electrical Engineering Skills:** Power flow, State estimation, Short circuit analysis, SCADA system

EXPERIENCE

•Power system engineer

CF Power Ltd.

August 2024 - Now

Calgary, AB

- Perform steady state transfer limit analysis of renewable energy integration under Ercot contingencies using PSS/E and TARA.

•Graduate Assistant

Cybersecurity Center for Secure Evolvable Energy Delivery Systems (SEEDS), University of Arkansas

August 2017 - July 2023

Fayetteville, AR

- Developed a Coordinate Descent (CD) based dynamic programming (DP) approach for optimizing battery-assisted PV systems, reducing total cost by 29.3% over ten years using MATLAB. [Journal][GitHub]
- Implemented an online scheduling algorithm for battery-assisted PV systems using reinforcement learning (DDPG), achieving a 3.29% annual cost reduction with MATLAB and Stable Baselines. [Journal][GitHub]
- Proposed a DDPG algorithm for scheduling optimal real-time power flow (RT-OPF) in a microgrid equipped with energy storage and power generations, using Matpower in MATLAB and Stable Baselines. [GitHub]
- Developed a new framework and algorithm of truck-based mobile energy couriers (MEC) scheduling in a distribution network with renewable energy sources, using Pandapower and Stable Baselines in Python. [GitHub]

•Graduate Assistant

Center for Infrastructure Trustworthiness in Energy Systems (CITES), University of Arkansas

August 2019 - July 2023

Fayetteville, AR

- Proposed a dynamic watermarking-based active low latency attack detection algorithm for grid-connected PV systems, achieving a detection delay of 50 ms with PFA below 5% in MATLAB. [Journal][GitHub]
- A Deep Q-Network (DQN) based deep reinforcement learning algorithm has been proposed for the low latency detection of cyberattacks, such as FDI and DoS attacks in smart grids, using Power system Toolbox in MATLAB and Stable Baselines. [Journal][GitHub]

SELECTED PUBLICATIONS [GOOGLE SCHOLAR LINK]

- **Y. Li** and J. Wu, “Optimum integration of solar energy with battery energy storage systems,” IEEE Transactions on Engineering Management, 2020. [Journal][GitHub]
- **Y. Li** and J. Wu, “Low latency cyberattack detection in smart grids with deep reinforcement learning,” International Journal of Electrical Power & Energy Systems, vol. 142, p. 108265, 2022. [Journal][GitHub]
- **Y. Li**, J. Wu, and Y. Pan, “Deep reinforcement learning for online scheduling of photovoltaic systems with battery energy storage systems,” Intelligent and Converged Networks, Tsinghua University Press, 2024. [Journal][GitHub]
- **Y. Li**, N. Lin, J. Wu, Y. Pan, and Y. Zhao, “Low Latency Attack Detection with Dynamic Watermarking for Grid-Connected Photovoltaic Systems,” Journal of Emerging and Selected Topics in Industrial Electronics, 2023. [Journal][GitHub]

RESEARCH INTEREST

Power System analysis, Detection and Estimation, Renewable Energy Systems

VISA & EMPLOYMENT AUTHORIZATION

Status: Open work permit. No sponsorship is required.