

Dr. Ying Zhang

Assistant Professor, Oklahoma State University, Stillwater, OK 74078, U.S.

Ph. D. in Electrical Engineering

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Highlights

- 8 years of full-time academic experience since 2014 and 3 years since Ph.D. degree.
- Expertise in active distribution networks and microgrid applications, modern power system operation and planning, distributed energy resources and storage, cyber-physical power systems, and AI and big data application in smart grid.
- Published 30 peer-review papers (12 Q1/Q2 journal papers, 9 IEEE Trans. papers), including one Global 1% ESI highly cited paper ([Google Scholar](#)).
- Member in IEEE, IEEE Task Force on Performance Evaluation of Distribution System State Estimation, IEEE PES Power System Operation, Planning and Economics Committee, IEEE PES AMPS Distribution System Analysis Subcommittee, IEEE Work Group on Distribution Management System, IEEE Work Group on Data-Driven Modeling, Monitoring, and Control in Distribution Networks.

APPOINTMENTS

Assistant Professor, Oklahoma State University Jan. 2024 - Present

Department of Electrical and Computer Engineering, Stillwater, OK, U.S.

Assistant Professor, Montana State University Aug. 2022 - Dec. 2023

Department of Electrical and Computer Engineering, Bozeman, MT, U.S.

Postdoctoral Research Associate, Brookhaven National Laboratory Aug. 2020 - Aug. 2022

Department of Interdisciplinary Science, Upton, NY, U.S.

Graduate Research Assistant, Southern Methodist University Aug. 2017 - Aug. 2020

Department of Electrical and Computer Engineering, Dallas, TX, U.S.

SERVICES

- **Associate Editor**, IET Generation, Transmission & Distribution 11/2023 - Present
- **Vice Chair** of Awards Subcommittee, IEEE PES Power System Operation, Planning and Economics (PSOPE) Committee 10/2023 - Present
- **Guest Editor** for Applied Sciences on Special Issue “Research Progress on Cyber-Physical Distribution System” 01/2023-01/2024
- **Member** in MSU ECE Admission Committee
- **Advisor** in MSU Capstone Senior Project
- **Reviewer** for 150 papers in peer-review journals/conferences (15 Journals and 3 Conferences):

IEEE Trans. Power Systems
IEEE Trans. Smart Grid
IEEE Trans. Sustainable Energy

Applied Energy
Modern Power Systems and Clean Energy
IET Generation, Transmission & Distribution

IEEE Trans. Neural Networks and Learning Systems
IEEE Trans. Industrial Informatics
IEEE Trans. Dependable and Secure Computing
IEEE Trans. Vehicular Technology
IEEE Open Access Journal of Power and Energy
IEEE Power Engineering Letters

CESS Journal of Power and Energy Systems
IET Smart Grid
Sustainable Computing, Informatics and Systems
IEEE PES General Meeting
IEEE PES ISGT NA Conference
IEEE Energy Conversion Congress and Exposition

PUBLICATIONS (h-index:11 i10-index:11)

➤ JOURNAL PAPERS

- [1] **Y. Zhang**, M. Yue, J. Wang, and S. Yoo. Cooperative multi-agent actor-attention-critic deep reinforcement learning for adaptive grid voltage emergency control, IEEE Transactions on Neural Networks and Learning Systems, 2023, accepted. (Q1)
- [2] S. Chung and **Y. Zhang**. Artificial Intelligence Applications in Electric Distribution Systems: Post-Pandemic Progress and Prospect. Applied Sciences, vol. 13, no. 12, 2023. (Q2)
- [3] **Y. Zhang**, M. Yue, and J. Wang, Off-policy deep reinforcement learning with automatic entropy adjustment for adaptive grid emergency control, Electric Power Systems Research, vol. 217, 2022. (Q1)
- [4] Y. Chen, Y. Y, and **Y. Zhang**, A Robust State Estimation Method Based on SOCP for Integrated Electricity-Heat System, IEEE Transactions on Smart Grid, vol. 12, no. 1, pp. 810-820, Jan. 2021. (ESI Highly Cited Paper , Q1)
- [5] **Y. Zhang**, X. Wang, J. Wang, and Y. Zhang, Deep reinforcement learning based volt-VAR optimization in smart distribution systems, IEEE Transactions on Smart Grid, vol.12, no.1, pp. 361-371, Jan. 2021. (Q1)
- [6] **Y. Zhang**, J. Wang, and B. Chen, Detecting false data injection attacks in smart grids: a semi-supervised deep learning approach, IEEE Transactions on Smart Grid, vol.12, no.1, pp. 623-634, Jan. 2021. (Q1)
- [7] **Y. Zhang** and J. Wang, Towards highly efficient state estimation with nonlinear measurements in distribution systems, IEEE Transactions on Power Systems, vol. 35, no. 3, pp. 2471-2474, May 2020. (Q1)
- [8] **Y. Zhang**, J. Wang, and M. Khodayar, Graph-based faulted line identification using micro-PMU data in distribution systems, IEEE Transactions on Smart Grid, vol. 11, no. 5, pp. 3982-3992, Sept. 2020. (Q1)
- [9] **Y. Zhang**, J. Wang, and Z. Li, Interval state estimation with uncertainty of distributed generation and line parameters in unbalanced distribution systems, IEEE Transactions on Power Systems, vol. 35, no. 1, pp. 762-772, Jan. 2020. (Q1)
- [10] **Y. Zhang**, J. Wang, and J. Liu, Attack identification and correction for PMU GPS spoofing in unbalanced distribution systems, IEEE Transactions on Smart Grid, vol. 11, no. 1, pp. 762-773, Jan. 2020. (Q1)
- [11] M. Cui, M. Khodayar, C. Chen, X. Wang, **Y. Zhang**, Deep learning based time-varying parameter identification for system-wide load modeling, IEEE Transactions on Smart Grid, vol. 10, no. 6, pp. 6102-6114, Nov. 2019. (Q1)
- [12] **Y. Zhang**, J. Wang, and Z. Li, Uncertainty modeling of distributed energy resources: techniques

and challenges, Current Sustainable/Renewable Energy Report, vol. 6, no. 2, pp. 42–51, Jun. 2019. (Q1)

- [13] **Y. Zhang**, J. Liang, Z. Yun, and X. Dong, A new fault-location algorithm for series-compensated double-circuit transmission lines based on the distributed parameter model, IEEE Transactions on Power Delivery. vol. 32, no. 6, pp. 2398-2407, Dec. 2017. (Q1)

➤ **SELECTED CONFERENCE PAPERS**

- [14] **Y. Zhang**, J. Zhao, D. Shi, and S. Chung, Deep Reinforcement Learning-Enabled Adaptive Forecasting-Aided State Estimation in Distribution Systems with Multi-Source Multi-Rate Data. 2024 IEEE PES Innovative Smart Grid Technologies Conference (IEEE PES ISGT NA), accepted.
- [15] **Y. Zhang** and M. Yue, Cooperative Multi-Agent Deep Reinforcement Learning for Adaptive Decentralized Emergency Voltage Control. 2024 IEEE PES Innovative Smart Grid Technologies Conference (IEEE PES ISGT NA), accepted.
- [16] T. Zhao, **Y. Zhang**, and M. Yue, Scalable Deep Reinforcement Learning-based Volt-VAR Optimization in Distribution Systems: A Mean-field Approach. 2022 IEEE Power & Energy Society General Meeting, Denver, CO, pp.1-5.
- [17] **Y. Zhang**, Y. Chen, J. Wang, and M. Yue, Decentralized Coordinated State Estimation in Integrated Transmission and Distribution Systems. 2022 IEEE PES Innovative Smart Grid Technologies Conference (IEEE PES ISGT NA), New Orleans, LA, pp.1-5.
- [18] **Y. Zhang**, M. Yue, and J. Wang, Adaptive Load Shedding for Grid Emergency Control via Deep Reinforcement Learning. 2021 IEEE PES General Meeting, Washington, D.C., pp. 1-5.
- [19] **Y. Zhang**, J. Wang, and Z. Li, Interval state estimation with measurement and network parameter uncertainty in unbalanced distribution systems. 2019 IEEE PES General Meeting, Atlanta, GA, pp. 1-5.
- [20] **Y. Zhang**, J. Liang, and P. Wang, Mutual impedance parameter modeling and accurate location algorithm of angled space crossed transmission lines, 2016 China International Conference on Electricity Distribution (CICED), Xi'an, 2016, pp. 1-6.

PROFESSIONAL ACTIVITIES

- **Panelist**, 2023 IEEE PES General Meeting, Orlando, FL, U.S. July. 2023
- **Visiting Scholar**, Cornell University, ECE Department, Ithaca, NY, U.S. Summer 2023
- **Invited Talk**, Oklahoma State University, Stillwater, OK, U.S. May. 2023
- **Invited Talk**, Women in Data Science 2023 @ University of Calgary, Calgary, Canada
March. 2023
- **Invited Talk**, Seminar in IEEE PES TF on Evaluation of Distribution System State Estimation
Step. 2021
- **Invited Talk**, University of Texas at San Antonio, San Antonio, TX, U.S. Jan. 2020
- **Member** in IEEE Task Force on Evaluation of Distribution System State Estimation, IEEE Work Group on Distribution Management System, IEEE Work Group on Data-Driven Modeling, Monitoring, and Control in Distribution Networks

2019-Present

- **Member** in IEEE PES Power System Operation, Planning and Economics (PSOPE) Committee, IEEE PES Distribution Systems Analysis Subcommittee 2022-Present
- **IEEE Member** 2018 -Present

EDUCATION

- **Ph. D. in Electrical Engineering**, Southern Methodist University, Dallas, TX, U.S. 2017-2020
Dissertation: [Model-Based and Data-driven Situational Awareness for Distribution System Monitoring and Control](#)
*This work is appointed for the 2020 Moody Dissertation Fellowship and received the 2023 IEEE PES Outstanding Doctoral Dissertation Award for the 2020-2023 Ph.D. graduates .
- **M.S. in Electrical Engineering** , Shandong University, Jinan, Shandong, China 2014-2017
- **B.S. in Electrical Engineering** , Shandong University, Jinan, Shandong, China 2010-2014

TEACHING

➤ TEACHING INTERESTS

Distribution System Operation and Analysis, Distributed Generation, Advanced Distribution Management System, Electric Circuit Fundamental, Power System Analysis

➤ COURSES TAUGHT

EELE 555	Alternative Energy Distributed Generation Systems	Fall 2022
EELE 455	Alternative Energy Power Generation	Fall 2022
EELE 454	Power System Model and Analysis	Spring 2023
EELE 452/552	Power System Operation and Control	Fall 2023
EELE 488	Electrical Engineer Design I	Fall 2023

HONORS & AWARDS

2020 - 2023 IEEE PES Outstanding Doctoral Dissertation Award
 2022 MSU Faculty Excellence Grants, Bozeman, MT, U.S.
 2020 Frederick E. Terman Award for Graduates, Southern Methodist University, TX, U.S.
 2020 Appointee of Moody Dissertation Fellowship, Southern Methodist University, TX, U.S.
 2013 National Scholarship for Highest Academic Distinction, Ministry of Education of China
 2011 National Scholarship for Highest Academic Distinction, Ministry of Education of China
 2015 The Second Prize in National Mathematical Modeling Contest for Graduates, China
 2017 Excellent Graduate Dissertation, Shandong University, China
 2014 Outstanding Undergraduate in Shandong Province, China
 2011, 2013, 2016 First-class Scholarship for Top 2% Students, Shandong University, China
 2011-2013 Merit Undergraduates, Shandong University, China (Three in a row)