

ZHENYU ZHAO

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EDUCATION

Temple University , Philadelphia, PA, USA Ph.D. in Computer and Information Science (in 2021 Spring) Ph.D. in Electrical and Computer Engineering	Jan 2021 – Dec 2024
George Washington University , Washington D.C., USA Master of Science in Electrical Engineering	Aug 2018 – May 2020
Wuhan University of Technology , Wuhan, China Bachelor of Engineering in Automation	Aug 2014 – May 2018

WORK EXPERIENCE

Research Associate University of Birmingham	Nov 2024 - Present <i>Birmingham, England</i>
Grid Software Intern Siemens	Jun 2024 - Aug 2024 <i>Minnetonka, MN</i>
<ul style="list-style-type: none">TNA upgrade project	
Intern PJM Interconnection	Jun 2023 - Apr 2024 <i>Audubon, PA</i>
<ul style="list-style-type: none">Studied the Energy Management System (EMS) and analyzed the historical trend of busesWrote Python script translating all transmission information into PI data label, retrieved data building achieved datasetConducted research on nodal load disaggregation with known proxy solar index	

RESEARCH AND TEACHING EXPERIENCE

Graduate Research Assistant Temple University	Jan 2021 - Nov 2024 <i>Philadelphia, PA</i>
<ul style="list-style-type: none">Conducted experiment of intrusion detection for IoT devices project based on time intervalCollaborated with PJM Interconnection on nodal load disaggregation project. Proposed disaggregation model based on the nodal and zonal relationCollaborated with Plug Power, building a prognostic health monitoring for hydrogen fuel cell systems. Processed data from different devices, proposed binary classification model based on LSTM, conducted training, outcome analysis, and tuning	
Graduate Teaching Assistant Temple University	Jan 2021 - Dec 2021 <i>Philadelphia, PA</i>
<ul style="list-style-type: none">Lecturing and grading for CIS 1051 (Introduction to Python) lab, CIS 3319 (Wireless Network and Security) lab, and CIS 3329 (Network Architectures) lab	

ACADEMIC SERVICES

- Reviewer for: IET Smart Grid, IEEE Transactions on Transportation Electrification, IEEE VPPC, IEEE CDC
- Student volunteer and recipient of student travel grant at IEEE ITEC 2023, Detroit, MI
- Student volunteer at IECON 2018, Washington D.C.

SKILLS

- Quantitative analysis, machine learning, data analysis
- Programming language: python, SQL, FORTRAN

RESEARCH AREA

- AI adoption in power systems
- Transmission scale load disaggregation and prediction
- Deep learning based health monitoring for hydrogen fuel cells

PUBLICATIONS

Journal Papers

- **Z. Zhao**, D. Moscovitz, L. Du, S. Wang, and X. Fan, “Deep Factorization Machine Model for Disaggregation of Transmission Load Profiles with High Penetration of Behind-The-Meter Solar”, IEEE Transactions on Industry Applications, in press
- **Z. Zhao**, D. Moscovitz, Z. Huang, and L. Du, “Long-Term Transmission-scale Behind-The-Meter Solar Prediction with Time-series Dense Encoder”, IEEE Transactions on Power Systems, under review
- D. Moscovitz, **Z. Zhao**, L. Du, and X. Fan, “Semi-Supervised, Non-Intrusive Disaggregation of Nodal Load Profiles with Significant Behind-the-Meter Solar Generation,” in IEEE Transactions on Power Systems, doi: 10.1109/TPWRS.2023.3334995.
- S. Ziyabari, **Z. Zhao**, L. Du, and SK. Biswas, “Multi-Branch ResNet-Transformer for Short-Term Spatio-Temporal Solar Irradiance Forecasting,” in IEEE Transactions on Industry Applications, doi: 10.1109/TIA.2023.3285202.

Conference Papers

- **Z. Zhao**, M. Chen, L. Du, D. Moscovitz And X. Fan, “GNN-Based Autoformer For Imputing Missing Data in Transmission Grid Load Profiles Considering Seasonal Patterns,” 2025 IEEE Power & Energy Society General Meeting (PESGM), under review
- M. Chen, **Z. Zhao**, L. Du, and Y. Chen “GNN-based Community Level EV Charging Profile Identification and Disaggregation,” IEEE ITEC 2025, under review
- D. Moscovitz, **Z. Zhao**, L. Du, and X. Fan, “Bilevel Nodal Behind-the-meter Solar Disaggregation Under Unexpected Extreme Weather Conditions,” 2024 IEEE Power & Energy Society General Meeting (PESGM), Seattle, WA, USA, 2024, pp. 1-5, doi: 10.1109/PESGM51994.2024.10689080.
- C. Fu, X. Du, Q. Zeng, **Z. Zhao**, F. Zuo, and J. Di, “Seeing Is Believing: Extracting Semantic Information from Video for Verifying IoT Events,” in WISEC 2024
- **Z. Zhao**, D. Moscovitz, L. Du, and X. Fan “Factorization Machine Learning for Disaggregation of Transmission Load Profiles with High Penetration of Behind-the-Meter Solar,” IEEE Energy Conversion Congress & Expo. (ECCE 2023), Nashville, TN, October 29- Nov 2, 2023
- **Z. Zhao**, Y. Chen, and L. Du, “Modeling and Classification of EV Charging Profiles Utilizing Topological Data Analysis”, IEEE Transportation Electrification Conf. & Expo, (ITEC 2023), Detroit, MI, June 19-21, 2023
- C. Jiang, C. Fu, **Z. Zhao**, and X. Du, “Effective anomaly detection in smart home by integrating event time intervals.” Procedia Computer Science 210 (2022): 53-60
- **Z. Zhao**, D. Moscovitz, S. Wang, X. Fan, and L. Du, “Semi-Supervised Disaggregation of Daily Load Profiles at Transmission Buses with Significant Behind-the-Meter Solar Generations,” IEEE Energy Conversion Congress & Expo. (ECCE 2022), Detroit, MI, October 9-13, 2022