ZHENYU ZHAO

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EDUCATION

Temple University, Philadelphia, PA, USA — Jan 2021 – Dec 2024
Ph.D. in Computer and Information Science (in 2021 Spring)
Ph.D. in Electrical and Computer Engineering

George Washington University, Washington D.C., USA — Aug 2018 – May 2020
Master of Science in Electrical Engineering

Wuhan University of Technology, Wuhan, China — Aug 2014 – May 2018
Bachelor of Engineering in Automation

WORK EXPERIENCE

Research Assiociate — Nov 2024 - Present
University of Birmingham — *Birmingham, England*

Grid Software Intern — Jun 2024 - Aug 2024
Siemens — *Minnetonka, MN*

- TNA upgrade project

Intern — Jun 2023 - Apr 2024
PJM Interconnection — *Audubon, PA*

- Studied the Energy Management System (EMS) and analyzed the historical trend of buses
- Wrote Python script translating all transmission information into PI data label, retrieved data building achieved dataset
- Conducted research on nodal load disaggregation with known proxy solar index

RESEARCH AND TEACHING EXPERIENCE

Graduate Research Assistant — Jan 2021 - Nov 2024
Temple University — *Philadelphia, PA*

- Conducted experiment of intrusion detection for IoT devices project based on time interval
- Collaborated with `PJM Interconnection` on nodal load disaggregation project. Proposed disaggregation model based on the nodal and zonal relation
- Collaborated 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 — Jan 2021 - Dec 2021
Temple University — *Philadelphia, PA*

- 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

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

Journal Papers

- **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
- **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, 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.