YUFAN ZHANG

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PROFESSIONAL EMPLOYMENT

University of California San Diego 2023 - present
Postdoctoral Researcher
Department of Electrical and Computer Engineering

EDUCATION

Shanghai Jiao Tong University 2017 - 2022
Ph.D. in Electrical Engineering

Technical University of Denmark
Joint training Ph.D. student

Chongqing University 2013 - 2017
Bachelor in Electrical Engineering

RESEARCH INTERESTS

Energy Forecasting
Interaction between Power and Traffic Networks
Machine Learning Applications in Power Systems
Decision Making under Uncertainty

PUBLICATIONS

Ongoing works
1. **Y. Zhang**, H. Wen, Y. Bian, and Y. Shi, "Deriving loss function for value-oriented renewable point forecasting".

Preprints
4. **Y. Zhang**, M. Jia, H. Wen, and Y. Shi, "Value-oriented renewable energy forecasting for coordinated energy dispatch problems at two stages,"arXiv preprint arXiv:2309.00803, 2023.
3. **Y. Zhang**, S. Dey, and Y. Shi, "Optimal vehicle charging in bilevel power-traffic networks via charging demand function," arXiv preprint arXiv:2304.11284, 2023.
2. **Y. Zhang**, H. Wen, T. Feng, and Y. Chen, "Targeted demand response: Formulation, lmp implications, and fast algorithms," arXiv preprint arXiv:2211.14806, 2022.
1. X. He, H. Wen, **Y. Zhang**, and Y. Chen, "Enabling fast unit commitment constraint screening via learning cost model," arXiv preprint arXiv:2212.00483, 2022.

Journal Papers
12. **Y. Zhang**, H. Wen, and Q. Wu, "A contextual bandit approach for value-oriented prediction interval forecasting," IEEE Transactions on Smart Grid, 2023.
11. **Y. Zhang**, Q. Wu, Q. Ai and J. P. S. Catalão, "Closed-Loop aggregated baseline load estimation using contextual bandit with policy gradient," IEEE Transactions on Smart Grid, vol. 13, no. 1, pp. 243-254, 2022.
10. **Y. Zhang**, H. Wen, Q. Wu and Q. Ai, "Optimal adaptive prediction intervals for electricity load forecasting in distribution systems via reinforcement learning," IEEE Transactions on Smart Grid.
9. **Y. Zhang**, Q. Ai, F. Xiao, R. Hao, and T. Lu, "Typical wind power scenario generation for multiple wind farms using conditional improved wasserstein generative adversarial network," International Journal of Electrical Power & Energy Systems, vol. 114, p. 105388, 2020.
8. **Y. Zhang**, Q. Ai, H. Wang, Z. Li, and X. Zhou, "Energy theft detection in an edge data center using threshold-based abnormality detector," International Journal of Electrical Power & Energy Systems, vol. 121, p. 106162, 2020.
7. **Y. Zhang**, Q. Ai, H. Wang, Z. Li, and K. Huang, "Bi-level distributed day-ahead schedule for islanded multi-microgrids in a carbon trading market," Electric Power Systems Research, vol. 186, p. 106412, 2020.

6. **Y. Zhang**, Q. Ai, and Z. Li, Grouping of dynamic electricity consumption behaviour: An f-divergence based hierarchical clustering model," IET Generation, Transmission & Distribution, vol. 15, no. 22, pp. 3164–3175, 2021
5. **Y. Zhang**, Q. Ai, and Z. Li, "Admm-based distributed response quantity estimation: a probabilistic perspective," IET Generation, Transmission & Distribution, vol. 14, no. 26, pp. 6594–6602, 2020.
4. **Y. Zhang**, Q. Ai, and Z. Li, "Intelligent demand response resource trading using deep reinforcement learning," CSEE Journal of Power and Energy Systems, 2021
3. **Y. Zhang**, Q. Ai, Z. Li, S. Yin, K. Huang, M. Yousif, and T. Lu, "Data augmentation strategy for small sample short-term load forecasting of distribution transformer," International Transactions on Electrical Energy Systems, vol. 30, no. 7, p. e12209, 2020.
2. **Y. Zhang**, Q. Ai, and Z. Li, "Improving aggregated baseline load estimation by gaussian mixture model," Energy Reports, vol. 6, pp. 1221–1225, 2020.
1. S. Yin, Q. Ai, Z. Li, **Y. Zhang**, and T. Lu, "Energy management for aggregate prosumers in a virtual power plant: A robust stackelberg game approach," International Journal of Electrical Power & Energy Systems, vol. 117, p. 105605, 2020.

Conferences Papers
1. **Y. Zhang**, Yuquan Liu, Zhiwen Yu, Wen Xiong, Li Wang, Qian Ai, Zhaoyu Li, Kaiyi Huang, Ran Hao, and Ziqing Jiang, "Improving Aggregated Load Forecasting Using Evidence Accumulation k-Shape Clustering," 2020 IEEE Power & Energy Society General Meeting (PESGM), Montreal, QC, Canada, 2020.

HONORS & AWARDS

Top Articles in Outstanding S&T Journals of China	2022
Frontrunner 5000 Paper, China Association for Science and Technology	2022
SJTU Outstanding PHD Graduate, Shanghai Jiao Tong University	2022
Outstanding Doctoral Graduate Development Scholarship, Shanghai Jiao Tong University	2022
Outstanding PHD Student Scholarship, Shanghai Jiao Tong University	2020
Best Conference Paper of IEEE Power & Energy Society General Meeting, PESGM	2020
Sieyuan Electrics Co. Scholarship, Shanghai Jiao Tong University	2019
Outstanding Undergraduate of Chongqing University, Chongqing University	2017
Undergraduate National Scholarship, Chinese Ministry of Education	2016
China Yangtze Power Co. Scholarship, China Yangtze Power Co.	2014
Freshmen Scholarship of Chongqing University, Chongqing University	2013
Excellent Student Scholarship of Chongqing University (Top 10%), Chongqing University	2013 - 2016

PROFESSIONAL SERVICES

Journal Reviewers: IEEE Transactions on Industrial Informatics, IEEE Transactions on Smart Grid, IET Renewable Power Generation, Acta Automatica Sinica, International journal of energy research, Applied Energy, Energy Reports, Sustainable Energy, Grids and Networks

INVITED TALKS

6. *Optimal Vehicle Charging in Bilevel Power-Traffic Networks via Charging Demand Function,* INFORMS Annual Meeting, October, 2023.
5. *Demand response model identification and forecasting with differentiable optimization neural network (OptNet): A gradient-based approach*, Power & Energy Society General Meeting, July, 2023.
4. *Closed-loop aggregated load estimation*, Power & Energy Society General Meeting, July, 2023.
3. *Optimal Vehicle Charging in Bilevel Power-Traffic Networks via Charging Demand Function*, Columbia University, April 2023.
2. *Value-oriented forecasting for power systems*, University of California San Diego, California, February 2023.
1. *Improving Aggregated Load Forecasting Using Evidence Accumulation k-Shape Clustering*, Power & Energy Society General Meeting, August, 2020.