

Yifan Dong

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Profile

- I am a third-year Ph.D. student in Electrical and Computer Engineering with a strong academic background and hands-on experience in optimization for coupled power-transportation system. I am skilled in programming languages such as Python and MATLAB. I am looking for an internship matching with my background.

Education

Purdue University, West Lafayette, IN Aug 2023 – Present
Ph.D. student in Electrical and Computer Engineering

- Research interest: System-level optimization for EV charging, aggregation of distributed energy resources.
- GPA: 3.83/4.0 [Up-to-date transcript]
- Coursework: Computational Method in Optimization, Convex Optimization, Computational Method for Power System Analysis, Optimization for Deep Learning, Algorithm Design, Analysis and Implementation, etc.

North China Electric Power University, Beijing, China Aug 2019 – June 2023
BS in Electrical Engineering and its Automation

- GPA: 4.31/5.0 (Top 1%) [Transcript]
- Coursework: Circuit Theory, Power System Analysis, Power System Economy and Management, Electrical Systems and Power Plants, Automatic Control Theory, etc.

Publications

Yifan Dong, Ge Chen, Junjie Qin, "**Federated Aggregation of Demand Flexibility**", submitted to *IEEE Transactions on Smart Grid*, 2025. [arXiv]

Yifan Dong, Ge Chen, Junjie Qin, S. Sivaranjani, Xiaonan Lu, Dionysios Aliprantis, David Love, "**Real-Time Charging Control for Electric Roadways**", submitted to *IEEE Transactions on Smart Grid*, 2025.

Yifan Dong, Junjie Qin, S. Sivaranjani, Xiaonan Lu, Dionysios Aliprantis, David Love, "**Real-Time Charging Control for Electric Roadways: Formulation and Causal Algorithms**", *2024 IEEE Power & Energy Society General Meeting (PESGM)*.

Experiences

Research Assistant: ASPIRE Research Center

- Project 1: Design of Charging Control Policy for DWPT Systems**
 - Developed a causal charging control algorithm that can be implemented in real-time for electric roadways, where electric vehicles can be wirelessly charged while driving.
 - Tested our algorithm under various of traffic conditions, showing low suboptimality and constraint violation.
 - Tools used: MATLAB, Python, SUMO.
- Project 2: Privacy-Preserving DER Flexibility Aggregation**
 - Design an end-to-end federated framework for demand flexibility aggregation, where private and high-dimensional information remains local to DERs, while only anonymized and low-dimensional data is shared with an aggregator.
 - Tools used: PyTorch, CvxpyLayer.

Teaching Assistant: Purdue University

- ECE 31032: Power Systems Engineering** (Fall 2024)
 - Helped instructing the content including economic dispatch, transformers, transmission lines, power system modeling and power flow analysis.

Presentations

- "**Federated Aggregation of Demand Flexibility**", 2025 ASPIRE Annual Meeting, Logan, UT (forthcoming) [Poster]
- "**Real-Time Charging Control for Electric Roadways**", 2024 ASPIRE Annual Meeting, Logan, UT [Poster]
- "**Real-Time Charging Control for Electric Roadways**", 2024 IEEE PES General Meeting, Seattle, WA [Poster]

Skills

Languages: Python, MATLAB.

Software & Tools: SUMO, Latex, Jupyter, OmniGraffle, Solidworks.