Milad Hoseinpour

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RESEARCH INTERESTS

Diffusion Models, Differential Privacy, Trustworthy Machine Learning, Information Theory

EDUCATION

- **University of Michigan** — Ann Arbor, Michigan
  Ph.D., Electrical Engineering and Computer Science — Sep. 2024 – present
  Advisor: Prof. Vladimir Dvorkin

- **Tarbiat Modares University** — Tehran, Iran
  M.Sc., Electrical and Computer Engineering — Sep. 2013 – Jan. 2016
  Thesis: Probabilistic Decision Making for Flexibility Management in Distribution Systems
  Advisor: Prof. Mahmoud-Reza Haghifam

- **Babol Noshirvani University of Technology** — Babol, Iran
  B.Sc., Electrical and Computer Engineering — Sep. 2009 – Sep. 2013

RESEARCH EXPERIENCE

- **University of Michigan** — Ann Arbor, Michigan
  Graduate Student Research Assistant — Sep. 2024 – present
  OptiML Group, Supervisor: Prof. Vladimir Dvorkin

- **Tarbiat Modares University** — Tehran, Iran
  Research Assistant — Sep. 2017 – Sep. 2023
  Electric Transmission and Distribution Lab., Supervisor: Prof. Mahmoud-Reza Haghifam

SUBMITTED PUBLICATIONS

- DiffOPF: Diffusion Solver for Optimal Power Flow
  Milad Hoseinpour, Vladimir Dvorkin, Submitted to **2026 Power Systems Computation Conference**, 2025. Link ↗

- Constrained Diffusion Models for Synthesizing Representative Power Flow Datasets
  Milad Hoseinpour, Vladimir Dvorkin, Submitted to **IEEE Transactions on Power Systems**, 2025. Link ↗

JOURNAL PUBLICATIONS

- Prosumers' Cost Recovery in Peer-to-Peer Electricity Markets
  Milad Hoseinpour, Mahmoud-Reza Haghifam, **Electric Power Systems Research**, 2024. Link ↗

- Privacy-Preserving and Approximately Truthful Local Electricity Markets: A Differentially Private VCG Mechanism
  Milad Hoseinpour, Mohammad Hoseinpour, Mahdi Haghifam, Mahmoud-Reza Haghifam, **IEEE Transactions on Smart Grid**, 2023. Link ↗

- Differentially Private Electricity Markets
  Milad Hoseinpour, Mahmoud-Reza Haghifam, **Iranian Journal of Energy**, 2023. Link ↗

Conference Publications

- Domain-constrained Diffusion Models to Synthesize Tabular Data: A Case Study in Power Systems
  Milad Hoseinpour, Vladimir Dvorkin, **ICML Workshop on DataWorld**: Unifying Data Curation Frameworks Across Domains, 2025. Link ⬈

- Privacy by Design in Local Electricity Markets: A Differentially Private Gradient Method
  Milad Hoseinpour, Mahmoud-Reza Haghifam, 27th International Conference on Electricity Distribution, **CIRED**, 2023.

- Accuracy Improvement in Differentially Private Logistic Regression: A Pre-Training Aprroach
  Mohammad Hoseinpour, **Milad Hoseinpour**, Ali Aghagolzadeh, 1st Conference on Artificial Intelligence and Future Technologies, **ICAIFT**, 2023.

- Role of Microgrids in Distribution Networks Congestion Management
  Milad Hoseinpour, Mahmoud-Reza Haghifam, 25th International Conference on Electricity Distribution, **CIRED**, 2019.

- Simultaneous Optimization of Tie Switches Placement and Reserve Capacity Margin of Sub-Transmission Substations with Considering the Conflict Between Short-Term and Long-Term Planning
  Milad Hoseinpour, Mahmoud-Reza Haghifam, 24th International Conference on Electricity Distribution, **CIRED**, 2017.

- Flexible Scheduling of Active Distribution Networks for Market Participation with Considering DGs Availability
  Milad Hoseinpour, Mahmoud-Reza Haghifam, Electrical Power Distribution Networks Conference, **EPDC**, 2017.

- Trade-Off Between Flexible and Economic Operation of a Microgrid Under Risk Assessment
  Milad Hoseinpour, Mahmoud-Reza Haghifam, Electrical Power Distribution Networks Conference, **EPDC**, 2017.

Teaching Assistantship Experience

- Tarbiat Modares University   Fall 2018 - Spring 2020
  Course: Reliability Evaluation of Power Systems
  Instructor: Prof. Mahmoud-Reza Haghifam

- Tarbiat Modares University   Fall 2014 - Fall 2015
  Course: Reliability Evaluation of Power Systems
  Instructor: Prof. Mahmoud-Reza Haghifam

- Babol Noshirvani University of Technology   Spring 2013
  Course: Principles of Electric Machines
  Instructor: Prof. Meysam Jafari

- Babol Noshirvani University of Technology   Spring 2012
  Course: Circuit Theory
  Instructor: Prof. Meysam Jafari

Skills

- **Programming Languages:** Python, Julia, MATLAB, C

- **Tools:** GIT, LaTeX

Industry Experience

- **Internship**, Sari Regional Power Distribution Company   Jul. 2013 – Sep. 2013
  Load forecasting in distribution systems

Honors And Awards

- Award Winner for the Student Poster Competition, Institute for Energy Solutions' 2025 Energy Symposium, 2025.

- Ranked 2nd out of 15 M.Sc. graduating class students in Power Systems, 2016.

- National Scholarship for the Master's degree, Iran Ministry of Education, 2013.

- Award Winner as Outstanding B.Sc. Student, Babol Noshirvani University of Technology, 2013.

- Ranked 88th out of about 35,000 participants in the nationwide entrance exams for a Master's degree in Electrical Engineering, 2013.

- National Scholarship for the Bachelor's degree, Iran Ministry of Education, 2009.

Service

- **Mentorship**   Sept. 2025 – Present
  EECS Department, University of Michigan
  Mentoring a new Ph.D. student in the EECS department.

- **Organizer for Michigan Student Symposium for Interdisciplinary Statistical Sciences**
  Collaborating in organizing the symposium.   Sept. 2025 – Present

- **Leading Committee of the Future Faculty Group**   Aug. 2025 – Present
  EECS Department, University of Michigan
  Supporting Ph.D. students' academic career preparation through workshops and mentoring.

- **Student Organizer for 2025 Energy Symposium**   May 2025
  Institute for Energy Solutions
  Collaborating in advertising the symposium.

- **Iran Renewable Energy Association**   Apr. 2018 – Sept. 2020
  Collaborating in organizing seminars, webinars, and workshops on renewable energy topics.

Selected Talks

- Synthesizing Representative Power Flow Datasets via Constrained Diffusion Models   Oct. 2025
  2025 INFORMS Annual Meeting, Atlanta, GA, USA.

- Differentially Private Logistic Regression   Dec. 2022
  Babol Noshirvani University of Technology, Babol, Iran.

- Platform Provider Distribution Utilities   Jun. 2020
  Tarbiat Modares University, Tehran, Iran.

- Distribution Networks Cost Allocation and Tariff Design   Mar. 2019
  Tarbiat Modares University, Tehran, Iran.

- European Electricity Grid Expansion Planning Strategies   Dec. 2018
  Tarbiat Modares University, Tehran, Iran.