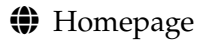


Nima Taghipour Bazargani

[Homepage](#)nima.t.bazargani@gmail.com[LinkedIn](#)[Scholar](#)

Professional Profile

Power Systems Engineer and Data Scientist with over 10 years of combined research and industry experience in power system analysis, modeling, optimization, and data-driven analytics. Expertise spans power system dynamics, stability, electricity markets, machine learning, and software development, with a proven track record of translating advanced research into practical engineering solutions. Experienced in developing scalable analytical tools for real-time grid monitoring, market simulation, operational planning, and decision support using Python and industry-standard power system software.

Technical Skills

- **Power System Software:** PSS[®]E, DAYZER, TARA, DSATools, PSLF, DiGSILENT
- **Programming Languages:** Python (Scikit-learn, PyTorch, Keras, TensorFlow), SQL, MATLAB, GAMS, C++
- **Data Science & Cloud Tools:** Time series forecasting and classification, deep learning, data analytics, GitHub, Amazon Web Services (AWS), Google Cloud

Industrial Working Experience

Independent Research and Professional Development

California, USA / Tehran, Iran

Jul. 2025 – Present

- Designed and developed **PSALL** (Power System Analysis Lab Light), an open-source Python package for power system analysis featuring DC power flow (DCPF), DC optimal power flow (DCOPF), security-constrained economic dispatch (SCED), market-based economic dispatch with bidding and settlement, and small-signal stability analysis for education and research.
- Released PSALL as an open-source project on GitHub with a command-line interface, Python API, comprehensive documentation, and example workflows.

GitHub: <https://github.com/NimaTB/PowerSystemAnalysisLabLight-PSALL>

Electric Power Group

Pasadena, CA

Power System Engineer

Sep. 2024 – Jul. 2025

- Developed a real-time inertia and system strength forecasting tool integrated into one of the company's C++-based synchrophasor analytics platform products.
- Worked independently to design and implement EPG's first Python-based machine learning framework, enabling seamless integration with the existing C++ platform.
- Leveraged real-time PMU data and a Model-Agnostic Meta-Learning (MAML) incremental learning approach, capturing short-term fluctuations (e.g., abrupt grid changes) and long-term trends while retaining historical knowledge and minimizing catastrophic forgetting.

CWP Energy

Montreal, Canada (remote)

Network Model Analyst

Sep. 2023 – Jun. 2024

- Conducted large-scale security-constrained unit commitment (SCUC) and economic dispatch simulations for major U.S. electricity markets (MISO, SPP, PJM, ERCOT), incorporating daily automated diverse scenarios to provide actionable insights for day-ahead market trading strategies, financial planning, and decision-making.
- Optimized the DAYZER Python API simulation pipeline by integrating third-party data sources (e.g., weather forecasts, fuel prices, outage schedules) and Google Cloud resources, enabling scalable, accurate long-term analyses for financial transmission rights auctions and congestion risk hedging.

Drive Powerline (FKA gigElev)

San Francisco, CA (remote)

Data Scientist Intern

May. 2022 – Aug. 2022

- Developed APIs to collect, process, and manage data from CAISO and other relevant electricity market sources.
- Built and deployed real-time machine learning models for forecasting key grid parameters, enhancing situational awareness and operational decision-making.

Niroo Research Institute (NRI)

Tehran, Iran

Project Advisor

Aug. 2017 – Jun. 2018

Provided advisory expertise on the definition, evaluation, and analysis of power system infrastructure resiliency.

Academic Working Experience

Arizona State University

Tempe, AZ

Graduate Research Associate

Aug. 2019 – Sep. 2023

Project 1: High-Dimensional Spatio-Temporal Data Science for a Resilient Power Grid: Towards Real-Time Integration of Synchrophasor Data

- Supported by the National Science Foundation (Grant No. OAC-1934766).
- Developed methods for real-time event identification in power systems using high-dimensional spatio-temporal PMU data through modal analysis and machine learning-based classification.

Project 2: Machine Learning Approaches for Real-Time Integration of Synchrophasor Data

- Supported by the Power System Engineering Research Center (PSERC) under project S-87.
- Contributed to developing machine learning frameworks for synchrophasor data analytics. Final report available [here].

Project 3: A Semi-Supervised Approach for Power System Event Identification

- Conducted under the U.S.-Israel energy center for Cybersecurity in energy, managed by the Israel-U.S. Binational Industrial Research and Development (BIRD) foundation. More details can be found [here].
- Developed and publicly released an all-in-one Event Identification package, including: (i) an event generation module based on the PSS[®]E Python API, (ii) a modal analysis-based feature extraction module, and (iii) a semi-supervised classification module for systematic benchmarking. The package is available [here].

Technical University of Darmstadt

Darmstadt, Germany

Research Assistant

Aug. 2018 – May. 2019

- Collaborative Research Center 1053 MAKI – Multi-Mechanisms Adaptation for the Future Internet. More details can be found [here].
- Project description: Formulation of reliable virtual network embedding in stochastic contexts as a central mixed-integer linear programming problem and its application in communication networks for energy automation.

Education

Arizona State University

Tempe, AZ

Ph.D. in Electrical Engineering (GPA: 3.86/4)

Aug. 2019 – Sep. 2023

Dissertation: “Real time identification of power system events using phasor measurement units (PMUs) data,”

Advisors: Professor Oliver Kosut, Professor Lalitha Sankar.

K.N. Toosi University of Technology

Tehran, Iran

M.Sc. in Electrical Engineering – Power System (GPA: 18.69/20)

Sep. 2015 – Jul. 2018

Thesis Title: “Optimal sizing and allocation of battery energy storage systems in order to enhance micro-grid resiliency,”

Advisor: Professor S.M.T Bathaee.

Shahid Beheshti University

Tehran, Iran

B.Sc. in Electrical Engineering – Transmission and Distribution Network

Sep. 2008 – Sep. 2014

Thesis Title: “Design and construction of a static frequency converter for induced voltage test of transformers.”

Relevant Coursework

Power System Dynamic, Power System Stability, Wide Area Monitoring Systems (WAMS) Application in Power Systems, Power System Reliability, Power System Advanced Protection, Power System Transients, Smart Grids, Foundation of Statistical Machine Learning, Machine Learning in Smart Grids, Random Signal Theory, Convex Optimization, Topics in Reinforcement Learning.

Publications

- Nima T. Bazargani, Lalitha Sankar, and Oliver Kosut, “A Semi-Supervised Approach for Power System Event Identification,” *arXiv preprint arXiv:2309.10095*, 2024. [link]
- Rajasekhar Anguluri, Nima T. Bazargani, Oliver Kosut, and Lalitha Sankar, “Source Localization in Linear Dynamical Systems using Subspace Model Identification,” *2023 IEEE Conference on Control Technology and Applications (CCTA)*, Bridgetown, Barbados, 2023, pp. 1016–1021. [link]
- Nima T. Bazargani, Gautam Dasarathy, Oliver Kosut, and Lalitha Sankar, “A Machine Learning Framework

- for Event Identification via Modal Analysis of PMU Data,” *IEEE Transactions on Power Systems*, 2022. [link]
- Rajasekhar Anguluri, Nima T. Bazargani, Oliver Kosut, and Lalitha Sankar, “A Complex-LASSO Approach for Localizing Forced Oscillations in Power Systems,” presented at the *IEEE Power and Energy Society, General Meeting* 2022. [link]
- Nima T. Bazargani, Gautam Dasarathy, Oliver Kosut, and Lalitha Sankar, “Event Identification Framework Based on Modal Analysis of Phasor Measurement Unit Data,” poster presented at the *IEEE Power and Energy Society, General Meeting*, July 26–29, 2021.
- Nima T. Bazargani, S.M.T Bathaee, “A Novel Approach for Probabilistic Hurricane Resiliency Assessment of a Grid Connected Microgrid Using Point Estimated Method,” Submitted to the IEEE region 8 paper contest. Presented at the *19th IEEE Mediterranean Electrotechnical Conference, Melecon*, Morocco, 2018. [link]
- Z. Afshar, Nima T. Bazargani and S. M. T Bathaee, “Virtual Synchronous Generator for Frequency Response Improving and Power Damping in Microgrids using Adaptive Sliding Mode Control,” *International Conference and Exposition on Electrical And Power Engineering (EPE)*, Iasi, Romania, 2018. [link]
- Nima T. Bazargani and S. M. T. Bathaee, “A General Framework for Resiliency Evaluation of Radial Distribution System Against Extreme Events,” *Iranian Conference on Electrical Engineering (ICEE)*, Mashhad, Iran, 2018. [link]
- Nima T. Bazargani, S.M.T Bathaee, Majid Hosseina, “Optimal Sizing of Battery Energy Storage and penetration degree of wind turbines using NSGA-II,” *Iranian Conference on Electrical Engineering (ICEE)*, Tehran, Iran, Jul 2017. [link]

Additional

Membership and Professional Services:

- Vice-president of the Iranian Student Association (ISA) at ASU.
- Social chair of the IEEE Power and Energy Society (PES) student chapter committee at ASU.
- Guest Researcher in the largest DFG-funded interdisciplinary project, Collaborative Research Centre 1053: MAKI “Multi-Mechanisms Adaptation for the Future Internet” at Technical University of Darmstadt.
- Reviewer of the IEEE Transactions on Power Systems, IEEE Power and Energy Society (PES) General Meeting (GM), International Journal of Electrical Power and Energy Systems, International Power System Conference (PSC).
- Former member of power systems studies department at Niroo Research Institute (NRI).

Honours and Awards:

- Ranked 2nd at K.N. Toosi University of Technology (M.Sc. degree).
- Ranked 240th in National Universities Entrance Exam for Master (among more than 30,000).
- My paper on hurricane resiliency assessment has been classified as one of the best five papers in the IEEE region 8 paper contest and presented at the 19th IEEE Mediterranean Electrotechnical Conference, Melecon, Morocco, 2018.