Nima Bahrami Z.

Contact Information

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Profile

Multidisciplinary mechanical engineer with a strong foundation in energy management and knowledge in **energy market analysis**, **pricing strategies**, and **renewable system modeling**. Experienced in data-driven research, stakeholder analysis, and simulation-based policy design. A proactive communicator, creative problem-solver, and quick learner, driven by a strong commitment to sustainability and the global energy transition.

Work Experience

Junior Energy Market Analyst | Niroo Boors Iran

Sep 2023 - Mar 2024

- Analyzed investment potential and electricity purchase structures in Iran's **renewable sector** under SATBA's agreements and guaranteed feed-in tariffs.
- Modeled solar PV and wind project returns using cost projections, tariff schedules, and capacity factors across different provinces.
- Assessed the viability of renewable power sales through the IRENEX, comparing market-clearing prices with SATBA-backed tariffs.
- Contributed to policy briefs evaluating incentives for domestic and international investment in utility-scale solar and wind farms.
- Assisted in mapping transmission constraints and regional resource potential using SATBA and Tavanir datasets to inform siting strategy.

AramDejDeylam | PV Layout

Sep 2022 – Jul 2023

- Designed PV and battery energy storage layouts tailored to local conditions, using **multi-objective optimization** to maximize energy yield and financial return.
- Simulated system performance under variable solar irradiation and load profiles to inform investment decisions.
- Supported integration strategies into existing rural grids with intermittent demand.

Merila Knowledge Enterprise

Jan 2021 - Sep 2022

- Developed backend features for a telemedicine platform using **FastAPI** and **SQL**, supporting digital documentation, user authentication, and real-time consultation modules.
- Designed and trained an **OCR-based AI model** to extract structured data from scanned lab reports, enabling automated integration of medical records into the database.
- Implemented RESTful API endpoints for document storage, retrieval, and search, ensuring seamless backend integration with the platform's front-end.
- Collaborated with the hardware team to support the **design and implementation of a smart camera housing system** for a parking automation prototype, contributing to sensor alignment and environmental adaptation.
- Worked in an agile, interdisciplinary team to deliver production-ready features under strict clinical data and usability requirements.

Guilan Combined Cycle Power Plant

Jul 2017 - Sep 2017

- Applied HSE safety protocols during plant visits and maintenance activities, ensuring zero safety incidents
- -Gained hands-on exposure to gas turbine systems and combined cycle operations through supervised fieldwork
- -Assisted in tooling inventory control by updating database records for 150+ items and verifying physical stock
- -Reviewed and organized BOMs for turbine toolkits, checking component specifications and supplier pricing
- -Contributed to a short-term project on mechanical system data analysis, delivering findings in a final presentation to the plant team

Project Experience

Energiek Reahus | Province Friesland

March 2025

- Led a 4-person team to develop a local **energy strategy** for microgrid in Reahus, enhancing market pricing logic in grid islanding scenarios.
- Built a game-theoretic simulation framework for analyzing household **transition incentives**, achieving PBE.
- Aligned stakeholder interests with pricing mechanisms under regulatory constraints, facilitating effective market integration.
- Conducted comprehensive energy analysis to **optimize renewable resources**, driving strategic improvements.
- Developed policy recommendations to support sustainable energy initiatives and enhance market dynamics.

Allame University | Merila

July 2022

- Led a research project on **thermal comfort assessment** in office buildings, using **Python** to analyze temperature and humidity data from IoT-based smart sensors.
- Applied data science techniques to model occupant comfort levels and identify patterns in energy use across different building zones.

Certificates (on my website) and References are available upon request

- Conducted an energy structure analysis of three urban districts in Tehran to inform strategic retrofitting and HVAC optimization.
- Developed a web-based application to estimate thermal comfort in real time and support data-driven building energy management strategies.
- Bridged research and software implementation, ensuring outputs were accessible for both academic analysis and urban planning stakeholders.

University Tubitak | IUST

- Investigated the feasibility of blockchain-based architectures for decarbonizing rural electricity systems and enabling decentralized energy governance.
- Evaluated blockchain platforms for peer-to-peer energy trading, focusing on scalability, consensus mechanisms, and integration with smart meters.
- Analyzed short-term electricity markets (e.g., EPEX SPOT) to model potential trading behaviors in liberalized environments.
- Modeled demand flexibility and user participation in local energy markets using Python, incorporating behavioral and pricing parameters.
- Developed Python scripts to automate data retrieval and preprocessing of market prices, generation forecasts, and imbalance costs to identify arbitrage and flexibility opportunities.

Publication

Ghandehariun, S., Ghandehariun, A.M., **Bahrami Ziabari,** N. (2024), Complementary Assessment and Design Optimization of a Hybrid Renewable Energy System Integrated with Pumped Hydro Energy Storage with Natural Intake. Renewable Energy

51 Citations

Ghandehariun, S., Ghandehariun, A.M**., Bahrami Ziabari, N**. (2023), Performance prediction and optimization of a hybrid renewable-energy-based multigeneration system using machine learning. Energy

Bahrami Ziabari, N., & Ghandehariun, S. (2021). Investigating the Social Acceptance of Integrating Wind Turbines with Ecotourism Residences: A Case Study of Iran. In The 29th Annual International Conference of the Iranian Society of Mechanical Engineers (ISME)

Bahrami Ziabari, N., & Ghandehariun, S. (2022). Economic Assessment of Solar-based Hydrogen for Methanol Production. Energy Equipment and Systems, 8(3), 263-273

Education

M.Sc. *University of Twente*
2024 -2025

- Energy Management
Focus Area: Electricity Pricing , **ABM**, Mathematical modeling of Hybrid Renewable Energy Systems, Energy communities
Thesis: Agent-based modeling of energy community with price signaling through auction-based pricing

M.Sc. *Iran University of Science and Technology*
2019-2021

- Mechanical Engineering
Focus Area: Energy Systems, **Optimization**, Mathematical modeling of Hybrid Renewable Energy Systems
Thesis: Design and optimization of a hybrid multi-generative renewable energy system and predict its sustainability using artificial neural network (**ANN**)

B.Sc. *University of Guilan*
2013-2018

- Mechanical Engineering
Focus Area: Mechatronics,
Thesis: Design and manufacture a 3-DOF camera slider for shooting time-lapse videography with ability to focus on an object

Skills

Python (Advanced), Jupyter, **Machine Learning, Optimization** (Proficient in MINLP / Bi-Level | Robust/Stochastic), **SQL**, Matlab, HTML, Visualization (**StreamLit**, Bokeh), **Solidworks**, AutoCAD

Certificates

Data Scientist (Associate), Advanced **Optimization**, Energy Markets of Today, Advanced Energy Markets (TU Delft), HOMER, PVSyst, Advanced Financial Modeling ES

Awards

- 8000 GBP ICMA Award
- 5000 EUR Scholarship University of Twente
- x2 Gold Medal Speed Skating Iran
- x1 Provincial Squash Champion

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