

# Mohammad Barzegar

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## Research Interests

- Medical Image Analysis
- Vision-Language & Multimodal Models
- Robustness and Bias
- Explainable AI

## Education

**M.Sc. Artificial Intelligence and Robotics, Persian Gulf University – Bushehr, Iran** **Sep 2022 – May 2025**

- **GPA:** 17.86/20.00 (ranked 1<sup>st</sup>)
- **Thesis:** Image Captioning for Chest X-rays using Deep Learning Methods ([Supervisor](#), [Advisor](#))
- **Coursework:** Machine Learning, Deep Learning, Pattern Recognition, Data Mining, Natural Language Processing, Algorithms Design, Image Processing, Multi-Agent Systems, Reinforcement Learning, Artificial Intelligence

**B.Sc. Civil Engineering, Persian Gulf University – Bushehr, Iran** **Sep 2016 – Mar 2022**

- **GPA:** 14.64/20.00
- **Relevant Coursework:** MATLAB, Statistics and Probabilities, Numerical Methods, Mechanics

## Publications & Ongoing Research

- [\[Published\]](#) N. Bouzarjomehri, **M. Barzegar**, H. Rostami, A. Keshavarz, A. N. Asghari, and S. T. Azad, "Multi-modal classification of breast cancer lesions in digital mammography and contrast enhanced spectral mammography images," *Computers in Biology and Medicine*, vol. 183, Dec. 2024. [\[DOI\]](#).
- [\[Submitted - Under Review\]](#) N. Shojaei, H. Rostami, **M. Barzegar**, et al., "A dataset of smartphone-captured throat images for bacterial and viral pharyngitis classification," *Scientific Data*, 2025.
- [\[Submitted - Under Review\]](#) **M. Barzegar**, et al., "Enhancing Chest X-ray Report Generation with Pathology-Guided Prompts and Vision-Language Shortcut Bias Mitigation," 2025. [\[GitHub\]](#)
- [\[In Preparation\]](#) **M. Barzegar**, et al., "Data synthesis and simulation of electric vehicle (EV) charging" 2025. [\[GitHub\]](#)

## Experience

**Research Assistant, Intelligent Healthcare Lab, Persian Gulf University – Bushehr, Iran** **Mar 2023 – Now**

- Contributed to 4 scientific papers in AI and healthcare, and led 1 industrial predictive maintenance project.
- Engaged in cross-functional teamwork, presenting research findings at lab meetings.
- Reviewer for 4 papers in [IBCAIDS2024](#), evaluating scientific contributions and providing feedback to authors.

**Research & Applications Engineer, Plugzio Power Inc. – Vancouver, BC, Canada (Remote)** **Jun 2023 – Now**

- Analyzed EV charging data to identify peak hours, optimize pricing, and detect or prevent equipment failures.
- Created internal tools to automate technical workflows, reducing manual tasks by 70%.
- Built and managed a technical team to maintain 5000+ EV chargers across North America.

**Teaching Assistant, Persian Gulf University – Bushehr, Iran** **Feb 2022 – Mar 2025**

- Held tutorials and assessed students in Machine Learning (2 semesters) and Statistics (1 semester).

**Systems Engineer, Electrolian Engineering Group – Bushehr, Iran** **Jul 2018 – Jun 2021**

- Designed the online shop website ([www.electrolian.com](http://www.electrolian.com)), resulting in a more nationwide outreach.
- Created internal tools using Python to automate sales and technical workflows, reducing manual tasks by 50%.
- Designed CCTV networks for 500+ projects and led a team of IT technicians to ensure seamless deployment.

## Skills

- **Programming:** Python, MATLAB, Kotlin, Java, SQL, Bash
- **Libraries and Technologies:** TensorFlow, PyTorch, Scikit-learn, Pandas, NumPy, Git, OpenCV, NLTK, LaTeX
- **Languages:**
  - **English:** Proficient (C2) – IELTS Academic Band 8.5/9.0 (L: 8.5/9.0, R: 8.0/9.0, W: 8.0/9.0, S: 8.5/9.0)
  - **Persian:** Native (C2)
  - **German:** Basic (A1)