Curriculum Vitae – Dr. Gelareh Valizadeh, PhD

1. Personal Details

Name: Gelareh Valizadeh
Location: Tehran, Iran
Date of Birth: March 24, 1986
ID No. 12240
Email: gvalizadeh@gmail.com
LinkedIn: https://www.linkedin.com/in/gelareh-valizadeh-ph-d95871089/?originalSubdomain=ir
Google Scholar: https://scholar.google.com/citations?user=aihBLxgAAAAJ&hl=en
Phone: (+98)912 536 9895

2. Summary

Biomedical engineer with over nine years of professional experience in the design, development, validation, and deployment of medical imaging and AI-based diagnostic systems, with a focus on MRI analysis, computer-aided (CAD) diagnosis, and clinical decision support tools.

3. Education

- PhD, Medical Radiation Engineering | Islamic Azad University, Tehran Science and Research Branch | 2014-2021
  - **Thesis Title:** *Modeling and Analysis of the Left Ventricle Shape and Motion over the Cardiac Cycle*
  - **Focus:** Utilizing advanced modeling and AI-based analysis to assess the shape and motion of the left ventricle throughout the cardiac cycle, facilitating the diagnosis of abnormalities using both machine learning and deep learning techniques.
- MSc, Medical Radiation Engineering | Islamic Azad University, Tehran Science and Research Branch | 2009-2012
  - **Thesis Title:** *Mathematical Modeling and Simulation of the Trajectory of Magnetic Nanoparticles in a Magnetic Drug Targeting System*
  - **Focus:** Designing an effective magnetic drug targeting system and assessing the impact of nanoparticle size through mathematical modeling and simulation.
- BSc, Medical Radiation Engineering | Islamic Azad University, Tehran Science and Research Branch | 2005-2009
  - **Thesis Title:** *Improving Image Quality in SPECT Using Modeling*
  - **Focus:** Investigating factors affecting resolution in SPECT imaging and developing modeling approaches to enhance image quality.

4. Postgraduate Fellowship Appointment

Postdoctoral Fellow (Biomedical Engineering) | Tehran University of Medical Sciences, Tehran, Iran | 2022-2023

- Conducting applied biomedical engineering work on machine learning-based analysis of multiparametric MRI for prostate cancer lesion classification
- Designing and implementing radiomics-based machine learning pipelines to differentiate benign and malignant prostate lesions using multi-center MRI data.

5. Employment History

- **Senior Biomedical Engineer**

  Organization: Parseh Innovative Diagnostic Medical Imaging Systems Company (PARMIS)
  Location: No. 10, Baharestan 2, Bani Hashem Square, Pasdaran, Tehran, Iran
  Employment Dates: 2016 – Present | **Employment Hours:** 35 hours per week
  Email: hamid.saligheh@gmail.com | **Office:** (+98)21-22310465 | Mobile: (+98)912 314 1161
  Role: Designing, implementing, and validating biomedical engineering solutions for diagnostic medical imaging systems, including AI-based MRI analysis, CAD systems, imaging workflow optimization, and supervising junior engineers.

- **Assistant Professor (Biomedical Engineering Department)**

  Organization: Payame Noor University
  Location: No. 3, 15-Meter Shirazi Street, Shahid Babaeian Boulevard, Sazeman Ab Street, Hakimiyeh University, Tehran, Iran
  Employment Dates: 2023 – Present | **Employment Hours:** 4 hours per week
  Website: https://pnu.ac.ir/ | **Phone:** (+98)21-77311286
  Role: Teaching undergraduate biomedical engineering courses.

- **Biomedical Engineer (AI and MRI Systems)**

  Organization: Quantitative Magnetic Resonance Imaging and Spectroscopy Group (QMISG)
  Location: Tehran University of Medical Sciences
  Employment Dates: 2022 – Present | **Employment Hours:** 5 hours per week
  Email: info@qmisg.com | **Phone:** (+98)912 314 1161
  Role: Designing and implementing AI-based diagnostic imaging solutions, including CAD algorithms for MRI analysis, developing biomedical image-processing models, and supporting engineering activities within medical imaging system development.

- **Biomedical Engineer**

  Organization: Research Center for Science and Technology in Medicine (RCSTIM)
  Location: Research Center for Molecular and Cellular Imaging, Advanced Medical Technologies and Equipment Institute, Tehran University of Medical Sciences, Tehran, Iran
  Employment Dates: 2009 – 2015 | **Employment Hours:** 35 hours per week
  Email: oghabian@sina.tums.ac.ir | **Phone:** (+98)912 294 2355
  Role: Conducted research in biomedical engineering topic, including developing engineering models and simulation tools for magnetic-field-guided biomedical delivery systems, including technical design and implementation of device components.

******** *Some roles were undertaken concurrently alongside primary employment (i.e., as a senior biomedical engineer at PARMIS). There were no unexplained periods of inactivity*

6. Selected Publications

- **Valizadeh G**, Morafegh M, Fatemi F, Ghafoori M, Saligheh Rad H. *Enhancing Prostate Cancer Classification: A Comprehensive Review of Multiparametric MRI and Deep Learning Integration*. Journal of Magnetic Resonance Imaging. 2025. (Link)
- Khodadadi F, Elahi R, **Valizadeh G**, Moodi F, Saligheh Rad H. *Current trends in glioma tumor segmentation: A survey of deep learning modules*, Physica medica. Physica Medica, 2025. (Link)
- Jannatdoust P, Valizadeh P, Saeedi N, **Valizadeh G**, Salari HM, Saligheh Rad H, Gity M. *Computer-Aided Detection (CADe) and Segmentation Methods for Breast Cancer Using Magnetic Resonance Imaging (MRI)*. Journal of Magnetic Resonance Imaging. 2025. (Link)
- **Valizadeh G**, Elahi R, Hasankhani Z, Rad HS, Shalbaf A. *Deep learning approaches for early prediction of conversion from MCI to AD using MRI and clinical data: A systematic review*. Archives of Computational Methods in Engineering. 2025 Mar;32(2):1229-98. (Link)
- **Valizadeh G**, Moodi F, Shoushtari FK, Morafegh M, Ghafoori M, Rad HS. *Deep Learning and Clinical Data Fusion in Prostate Cancer: Diagnosis of Clinically Significant Lesions Using Multiparametric MRI*. ISMRM. 2025. (Link)
- Morafegh M, **Valizadeh G**, Moodi F, Ghafoori M, Mostaar A, Rad HS. *Explainable Radiomics-Based ML for Predicting Clinically Significant Prostate Cancer in Biparametric MRI*. ISMRM. 2025. (Link)
- **Valizadeh G**, Mofrad FB. *Parametrized pre-trained network (PPNet): A novel shape classification method using SPHARMs for MI detection*. Expert Systems with Applications. 2023 Oct 15;228:120368. (Link)
- Mohammadian F, Zare Sadeghi A, Noroozian M, Malekian V, Abbasi Sisara M, Hashemi H, Mobarak Salari H, **Valizadeh G**, Samadi F, Sodaei F, Saligheh Rad H. *Quantitative assessment of resting-state functional connectivity MRI to differentiate amnestic mild cognitive impairment, late-onset Alzheimer's disease from normal subjects*. Journal of Magnetic Resonance Imaging. 2023 Jun;57(6):1702-12. (Link)
- Mofrad FB, **Valizadeh G**. *DenseNet-based transfer learning for LV shape classification: Introducing a novel information fusion and data augmentation using statistical Shape/Color modeling*. Expert Systems with Applications. 2023 Mar 1;213:119261. (Link)
- **Valizadeh G**, Khodadadi Shoushtari F, Koopaee S, Mobarak Salari H, Golezar MH, Gity M, Saligheh Rad H. *Towards an optimal breast lesions predictive model by assessing different MRI protocols' combinations: Radiomics analysis*. Presented at: ISMRM Annual Meeting & Exhibition; 2023; Toronto, Canada. (Link)
- **Valizadeh G**, Babapour Mofrad F, Shalbaf A. *Parametric-based feature selection via spherical harmonic coefficients for the left ventricle myocardial infarction screening*. Medical & Biological Engineering & Computing. 2021 Jun;59(6):1261-83. (Link)
- **Valizadeh G**, Fatemi F, Shahabadi M, Oghabian MA, Pouladian M. *Mathematical Modeling and Simulation in order to Evaluation of the Nanoparticle Size in the Magnetic Drug Targeting System*. Iranian Journal of Biomedical Engineering. 2014 Jun 22;8(2):125-33. (Link)

** *Additional publications and conference presentations available on Google Scholar Profile.*

7. Skills

Technical Skills: programming languages (Python, MATLAB), AI tools and frameworks (TensorFlow, PyTorch), medical imaging analysis (detection, segmentation, registration, classification, grading), machine learning, deep learning, image processing, MRI analysis, radiomics, statistical shape modeling, medical image processing software (ImageJ, 3D Doctor, AMIRA, MESHLAB, SEGMENT, ITK-snap, VTK, 3D Slicer).
Soft Skills: project management, leadership, communication, problem-solving, teamwork.