


Elmira Yazdani

 Tehran, Iran

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 [Google Scholar Link](#)

EDUCATION

PhD	Medical Physics, Department of Medical Physics, Faculty of Medicine, Iran University of Medical Sciences, Medicine, Tehran, Iran, www.iums.ac.ir Graduated as a top-performing student with an outstanding GPA of 18.97 (out of 20)	Jan 2021- June 2024 Iran, Tehran
M.Sc.	Medical Physics, Department of Medical Physics and Engineering, Faculty of Medicine, Tehran University of Medical Sciences, Tehran, Iran, www.tums.ac.ir Graduated as a top-performing student with an outstanding GPA of 18.96 (out of 20)	Sep 2017- Sep 2019 Iran, Tehran
M.Sc.	Physics (Atomic and Molecular Physics), Department of Energy Engineering and Physics, Amirkabir University of Technology (AUT)- Tehran Polytechnic, Tehran, Iran, www.aut.ac.ir	Sep 2013- Sep 2015 Iran, Tehran
B.Sc.	Medical Radiation Engineering, Department of Engineering, Science and Research Branch Islamic Azad University (SRBIAU), Tehran, Iran, www.srbiau.ac.ir	Sep 2009-Jan 2013 Iran, Tehran

SUMMARY OF QUALIFICATIONS

Computer skills:

- Programming Language: Python (core, statistics, data analysis and manipulation, image processing, visualization, machine learning, and deep learning packages)
- Simulation Software: MCNPX, GATE.
- Mathematical software: MATLAB.
- Productivity and referencing tools: Microsoft Office (Word, Excel, PowerPoint), EndNote, Mendeley.

Research skills and interests:

- Nuclear Medicine and Radiotheranostics
- Radionuclide Therapy
- Internal Dosimetry
- Personalized cancer treatment
- Medical Imaging (PET/CT & SPECT/CT, MRI, etc) & Image processing
- Computer vision
- Artificial Intelligence (Machine learning and deep learning)
- Radiomics, Dosiomics, and other Omics approaches
- Monte Carlo simulation (GATE, MCNP)
- Computational Physics & Stochastic Process

FOREIGN LANGUAGE PROFICIENCY

Persian: Native. **English:** Good.

RESEARCH EXPERIENCE

- Researcher, Nuclear Medicine Center, Shariati Hospital, Tehran University of Medical Sciences (TUMS)** Sep 2022- Now
Tehran, Iran
- Conducted research on novel radiopharmaceuticals, with a focus on theranostics applications.
 - Specialized in internal dosimetry to quantify radiation doses for therapeutic optimization.
 - Advanced image quantification techniques to improve diagnostic accuracy and therapy monitoring.
 - Integrated artificial intelligence (AI) into nuclear medicine workflows, including image processing, feature extraction, and predictive modeling.
 - Contributed to the development of personalized treatment protocols using radiomics, dosimetrics, and AI-driven approaches.
 - Collaborated on multidisciplinary projects to enhance the role of radiotheranostics in cancer management.
- PhD Research**, Department of Medical Physics, Faculty of Medicine, IUMS. Sep 2022- June 2024
Advisors: Prof. Mahdi Sadeghi, Dr. Parham Geramifar
Tehran, Iran
PhD Thesis on "Predicting tumor absorption dose in molecular therapy of [¹⁷⁷Lu]Lu-PSMA-617 radioligand therapy using radiomic features of [⁶⁸Ga]Ga-PSMA-11 PET/ CT images in patients with mCRPC using machine learning technique".
- Second Master's Thesis**, Department of Medical Physics and Engineering, Sep 2018- Sep 2019
Faculty of Medicine, TUMS. Tehran, Iran
Advisor: Dr. Hamidreza Saligherad
- M.Sc. Thesis on "Simulation Platform for Magnetic Resonance Fingerprinting (MRF)".**
- First Master's Thesis**, Department of Energy Engineering and Physics, AUT. Sep 2014-Sep 2015
Advisor: Dr. Hussein Abbasi
Tehran, Iran
- M.Sc. Thesis on "Noise Role in Dephasing and its Influence on Image Quality in Diffusion-weighted Magnetic Resonance Imaging (DW-MRI)".**
- Bachelor's Thesis**, Department of Engineering, SRBIAU. June 2011-Dec 2013
Advisor: Dr. Elham Saeedzadeh
Tehran, Iran
B.Sc. Thesis on Simulation of 3D semi-MIRD phantom for Dosimetry in Iranian Population with MCNP4".
- B.Sc. Internship in "Medical Imaging"** at Beast Hospital, Department of Medical Imaging, Tehran, June 2011-Sep 2013
Iran. Experience working with Medical Imaging systems such as CT scan, Diagnostic Radiography, Mammography, and Ultrasound. Tehran, Iran

TEACHING EXPERIENCE

<p>Lecturer (Assistant Professor), Iran University of Medical Science, Department of Medical Physics</p> <ul style="list-style-type: none"> <i>Nuclear Medicine Physics, Computational Physics, Monte Carlo in Medicine, Diagnostic Imaging, Physics in Medicine and Biology, and Medical Physics</i> 	Sep 2024-present
<p>Teaching Assistant, Iran University of Medical Science, Department of Medical Physics. Nuclear Medicine Physics by Dr. Prof. Mahdi Sadeghi</p>	Sep 2021-June 2024 Tehran, Iran
<p>Teaching Assistant, Iran University of Medical Science, Department of Medical Physics and Engineering <i>MRI for Medical Imaging and Medical Physics</i> MSc Students by Dr. Malakeh Malekzadeh.</p>	Feb 2021-Feb2022 Iran, Tehran
<p>Teaching Assistant, Tehran University of Medical Sciences, Department of Medical Physics and Engineering <i>MRI for Medical Imaging</i> MSc Students by Dr. Hamidreza Saligheh Rad.</p>	March 2019-June 2019 Iran, Tehran
<p>Lecturer, Tehran University of Medical Science, Department of Medical Physics and Engineering <i>Principles of Magnetic Resonance Imaging for International Ph.D. Students of Medical Physics</i>, by Dr. Prof. Hamidreza Saligheh Rad.</p>	Nov 2018-March 2019 Iran, Tehran
<p>Lecturer, Tehran University of Medical Science, Department of Medical Physics and Engineering <i>Statistical Analysis in Excel</i>, by Dr. Prof. Mehdi Mirbagheri.</p>	Nov 2018- March 2019 Iran, Tehran
<p>Teaching Assistant, Tehran University of Medical Sciences, Department of Medical Physics and Engineering <i>Research Methods</i> by Dr. Prof. Nader Riahi Alam.</p>	March 2018-May 2018 Iran, Tehran
<p>Teaching Assistant, Tehran University of Medical Sciences, Department of Medical Physics and Engineering. <i>Nuclear Physics</i> by Dr. Prof. Nader Riahi Alam.</p>	Sep 2017-Feb 2018 Tehran, Iran
<p>Teaching Assistant, Tehran University of Medical Sciences, Department of Medical Physics and Engineering. <i>Nuclear Physics for International Students</i>, by Dr. Prof. Nader Riahi Alam</p>	Sep 2017-Feb 2018 Iran, Tehran
<p>Teaching Assistant, Amirkabir University of Technology, Department of Energy Engineering and Physics. <i>Medical Image Processing</i>, by Dr. Hossein Abbasi.</p>	Jan 2013-Oct 2014 Iran, Tehran

EMPLOYMENT EXPERIENCE

<p>Assistant Professor, Medical Physics Department of Iran University of Medical Sciences, Tehran, Iran.</p>	April 2025-Present
<p>Researcher, Medical Physics, Shariati Hospital, Nuclear Medicine Institute. Tehran, Iran</p>	Jan 2023-Present Tehran, Iran

Researcher , QMISG (QMISG- Quantitative Medical Imaging Systems Group- http://qmisg.com/) Research Center for Molecular and Cellular Imaging, Imam Khomeini Hospital, Tehran, Iran	Nov 2017-Nov 2019 Tehran, Iran
Researcher in the Iranian Association of Magnetic Resonance in Medicine (IAMRM) interest group of Universal Scientific Education and Research Network (USERN) (https://usern.tums.ac.ir/Group/Info/IAMRM) We seek to pursue and accomplish the strategic plans for the Iranian Chapter of the International Society for Magnetic Resonance in Medicine (ISMRM).	Jan 2019- Present Tehran, Iran
Researcher , Medical Physics, Imam Khomeini Hospital, Tehran, Iran Radiotherapy and Cancer Research Institute.	Sep 2018-2020 Tehran, Iran
Researcher , Medical Physics, Shariati Hospital Research and Treatment Center, Tehran, <ul style="list-style-type: none"> • Nuclear Medicine. 	Sep 2018-2020 Tehran, Iran

PUBLICATION

- **Yazdani E**, Neizehbaz A, Karamzade-Ziarati N, Emami F, Vosoughi H, Asadi M, Mahmoudi A, Sadeghi M, Kheradpisheh SR, Geramifar P. Transforming [177Lu] Lu-PSMA-617 treatment planning: Machine learning-based radiodosimetry and swin UNETR using pretherapy PSMA positron emission tomography/computed tomography (PET/CT). *Medical Physics*. 2025 Oct;52(10):e70030.
- Tahmasebzadeh A, **Yazdani E**, Mirshahi R, Naseripour M, Sadeghi M, Machine Learning-Based Prediction of Local Recurrence in Uveal Melanoma After Ruthenium-106 Plaque Brachytherapy Using Ultrasound Images and Clinical Data, *Clinical Oncology*, <https://doi.org/10.1016/j.clon.2025.103960>.
- **Yazdani E**, Neizehbaz A, Karamzade-Ziarati N, Kheradpisheh SR. Explainable artificial intelligence for pneumonia classification: Clinical insights into deformable prototypical part network in pediatric chest x-ray images. *Journal of Medical Imaging and Radiation Sciences*. 2025 Sep 1;56(5):102023.
- Gholizade M, **Yazdani E**, Hosseini-Baharanchi FS, Nikoofar A, Esmaili G, Goli-Ahmadabad F, Mahdavi SR, Malekzadeh M. Variations in radiomic features of the femoral head and neck during helical tomotherapy in prostate and rectal cancer patients. *BMC Cancer*. 2025 Dec;25(1):1-8.
- **Yazdani E**, Sadeghi M, Karamzade-Ziarati N, et al. Machine Learning-Based Dose Prediction in [177Lu]Lu-PSMA-617 Therapy by Integrating Biomarkers and Radiomic Features from [68Ga]Ga-PSMA-11 PET/CT. *International Journal of Radiation Oncology*Biophysics*Physics*. 2025/05/18/2025;doi:<https://doi.org/10.1016/j.ijrobp.2025.05.014>
- Atefeh Tahmasebzadeh, **Elmira Yazdani**, Masood Naseripour et al. Automatic Classification of Uveal Melanoma Regression Patterns Following Ruthenium-106 Plaque Brachytherapy Using Ultrasound Images and Deep Convolutional Neural Network, 15 May 2025, PREPRINT (Version 1) available at Research Square [<https://doi.org/10.21203/rs.3.rs-6602726/v1>]
- Mahmoudi A, Zare-Sadeghi A, Iraj H, Barahman M, Saadatmand P, **Yazdani E**, Mahdavi SR. Dosimetric and Pre-Radiotherapy Multimodal MRI-Based Radiomic Analysis for Overall Survival Stratification in Patients with Glioblastoma Multiforme. Available at SSRN 5271096.
- Izadi Yazdi, Saeideh and **Yazdani, Elmira** and Arabi, Hossein and Sadeghi, Mahdi, Radiation Dosimetry of [124I]-Metaiodobenzylguanidine (Mibg) Dynamic PET/CT in Pediatric Neuroblastoma Through Animal-to-Human Extrapolation with Mncpx Code and Olinda/Exm Software. Available at SSRN: <https://ssrn.com/abstract=5342936> or <http://dx.doi.org/10.2139/ssrn.5342936>.

- Kazemi-Jahromi M, **Yazdani E**, Karamzade-Ziarati N, Asadi M, Sadeghi M, Geramifar P. Personalized dosimetry assessment of [177Lu] Lu-PSMA-617 radioligand therapy in the management of metastatic castration-resistant prostate cancer. *International Journal of Radiation Biology*. 2024 Nov 1;100(11):1551-9.
- **Yazdani E**, Asadi M, Geramifar P, Karamzade-Ziarati N, Vosoughi H, Kazemi-Jahromi M, Sadeghi M. A Step toward Simplified Dosimetry of Radiopharmaceutical Therapy via SPECT Frame Duration Reduction. *Applied Radiation and Isotopes*. 2024 May 27:111378.
- **Yazdani. E**, Asadi M, Karamzade-Ziarati N, Vosoughi H, Geramifar P. The Predictive Power of Pre-treatment [68Ga]Ga-PSMA-11 PET and Clinical Biomarkers in Tumoral Lesion Dosimetry of [177Lu]Lu-PSMA-617 Radioligand Therapy: A Machine Learning Approach. *International Conference on Nuclear Science and Technology 2024 (INST2024)*, Isfahan, Iran, 2024 May 6-8.
- **Yazdani E**, Karamzadeh-Ziarati N, Cheshmi SS, Sadeghi M, Geramifar P, Vosoughi H, Jahromi MK, Kheradpisheh SR. Automated segmentation of lesions and organs at risk on [68Ga] Ga-PSMA-11 PET/CT images using self-supervised learning with Swin UNETR. *Cancer Imaging*. 2024 Feb 29;24(1):30.
- **Yazdani E**, Geramifar P, Karamzade-Ziarati N, Sadeghi M, Amini P, Rahmim A. Radiomics and Artificial Intelligence in Radiotheranostics: a review of applications for Radioligands Targeting somatostatin receptors and prostate-specific membrane antigens. *Diagnostics*. 2024 Jan 14;14(2):181.
- Geramifar P, **Yazdani E**. NuMeVChat: A Conceptual AI-Driven Visual Chatbot for Advancing Personalized Cancer Care in Nuclear Medicine. *Frontiers in Biomedical Technologies*. 2023 Aug 5;10(4):382-4.
- **Yazdani E**, Sahaf SA, Rad HS. Reconstruction of Simulated Magnetic Resonance Fingerprinting Using Accelerated Distance Metric Learning. *Frontiers in Biomedical Technologies*. 2020 Apr 22.
- **Yazdani E**, Abbasi H. The Role of Dephasing in the Assessment of DMRI through Langevin Equation Approach. *Iranian Journal of Medical Physics*. 2018 Dec 1;15(Special Issue-12th. Iranian Congress of Medical Physics):39-.
- **Yazdani E**, Abbasi H, Aghabozorgi Sahaf. S, Noise Simulation in Dephasing and its Influence on Image Quality in Diffusion Magnetic Resonance Imaging, 22nd Iranian Nuclear Conference, 2016.

CONFERENCE PAPERS

- **E Yazdani**, N Karamzade-Ziarat, P Geramifar, Simplified dosimetry workflow in [177Lu]Lu-PSMA-617 radiopharmaceutical therapy in mCRPC patients, 31st Iranian Nuclear Conference, 2025.
- **E Yazdani**, A Neizehbaz, N Karamzade-Ziarat, H Vosoughi, SR Kheradpisheh, M Sadeghi, P Geramifar, Employing Enhanced ResNet-Based Architecture for Automatic Segmentation of Tumoral Lesions and Organs on [68Ga]Ga-PSMA-11 PET/CT Images in Prostate Cancer, 13th ICMP 13 (NO3120231), 45.
- M Elikaei Moghadam, **E Yazdani**, M Bagher Shiran, S Abbasi-Rad, H Saligheh Rad, M Malekzadeh, Update on diagnosis in muscle loss and bone loss with aging: recent advances with radiomics, 13th ICMP, 2025.
- A Tahmasebzadeh, M Sadeghi, M Naseripour, R Mirshahi, **E Yazdani**, A Machine Learning Approach for Recurrence Prediction in Uveal Melanoma Following Plaque Brachytherapy: Insights from Clinical and Demographic Data, 13th ICMP 13 (NO3120115), 42, 2025.

- **E Yazdani**, M Asadi, N Karamzade-Ziarat, H Vosoughi, P Geramifar, The Predictive Power of Pre-treatment [68Ga]Ga PSMA-11 PET and Clinical Biomarkers in Tumor Lesion Dosimetry of [177Lu]Lu PSMA-617 Radioligand Therapy: A Machine Learning Approach, Proceedings International Conference on Nuclear Science and Technology (INST), 2024
- Yazdi SI, **Yazdani E**, Sadeghi M, Arabi H, Zaidi H. Pediatric Neuroblastoma: Estimating Radiation Dosimetry of [124I]-Metaiodobenzylguanidine (mIBG) Dynamic PET/CT Using Animal-to-Human Extrapolation and MCNPX Code with OLINDA/EXM Software. In 2024 IEEE Nuclear Science Symposium (NSS), Medical Imaging Conference (MIC), and Room Temperature Semiconductor Detector Conference (RTSD), 2024 Oct 26 (pp. 1-2). IEEE.

BOOK PUBLISHED

- Somayeh Gholami, Elmira Yazdani. "Radiation Protection in the Design of Radiotherapy Facilities", 2020.
- Nader Riahi Alam, Elmira Yazdani. "Research Methods", 2018.

CERTIFICATION AND AWARD

- The winners of the 9th Simin Health Physics Award, 2024 (<http://www.siminaward.ir/>)
- Exceptional Talent (Elite Student), Medical Physics, Tehran University of Medical Sciences, 2019
- Radiopharmaceutical therapy (RPT), IOMP, 2024
- Streamlined dosimetry workflow for Lu177-PSMA therapy, EFOMP, 2024
- Application of Artificial Intelligence from Preclinical to Clinical Imaging, TPCF, 2023
- Use of pharmaceuticals in the management of radiotherapy side effects, EFRS, 2023
- The 5th annual International Preclinical Imaging Symposium, TPCF, 2022
- Use of pharmaceuticals in the management of radiotherapy side effects, EFRS, 2022
- Virtual Summer School 2021: IGRT and Adv. Treatment Techniques, the Medical Faculty Heidelberg of Heidelberg University, 102 CPD, 2021
- 2nd International IFAMP Training on "Radiomics and AI", Medical University of Vienna, 24 CPD, 2021.
- IEC Standard for Radiotherapy Equipment, EFOMP 2021.
- School of MRI-Enterography, ESMRMB 2021.
- EFOMP webinar on "AI in Medical Physics, 2021.
- Machine Learning Real World Projects in Python, Udemy 2021.
- Binomial, Normal Distributions, Matrices for Data Science, Udemy 2021.
- Virtual International Conference for Health Professional Education (VICHPE 2021).
- Lecturer at Photo Dynamic Therapy (PDT) Workshop, Tehran University of Medical Science, Medical Physics and Biomedical Engineering Department, Feb 2019.
- Workshop on "LaTeX ", Amirkabir University of Technology, Tehran, Iran, Feb 2018.
- Medical Physics Congress, Shahid Beheshti University of Medical Science, Tehran, Nov 2017.
- The 22nd Nuclear Physics Conference, Yazd, Iran, Feb 2016.
- Workshop on "Professional principles of patent mapping and registration process", Sharif University of Technology, Oct 2015.
- School on "Monte Carlo code FLUKA", Sharif University of Technology, Tehran, Iran, Jan 2015
- Workshop on "Cell imaging through Micro-MRI", Sharif University of Technology, Tehran, Iran, Dec 2014.
- Advance School on "Monte Carlo n particle transport code MCNP", Sharif University of Technology, Tehran, Iran, Dec 2014.

- Workshop on "MATLAB programming", Amirkabir University of Technology, Tehran, Iran, Sep 2011.
- The "9th International Kharazmi Festival Award", for the invention "Selfwash Window", Jan. 2007, Tehran, Iran.