

Dr. Mahdi Mohammadi

PhD in Medical Physics
 Department of Molecular Imaging,
 Faculty of Advanced Technologies in Medicine
 Iran University of Medical Sciences (IUMS)
 Major: Medical Physics

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 Updated: 11/01/2025

Research Interests	▪ Magnetic Resonance Imaging, Neuroimaging, Neurodegeneration, MRI Biomarkers, Sleep Disorders, Quantitative MRI, Machine Learning
Education	◊ [September 2019 – February 2025] Tehran University of Medical Sciences (TUMS) Ph. D. of Medical Physics · GPA: 18.35/20.00 (3.67/4). · Thesis: Assessment of Continuous Positive Airway Pressure (CPAP) Treatment Effect on Brain Structural, Functional and Metabolic Changes in Obstructive Sleep Apnea Syndrome Using Magnetic Resonance Imaging (MRI) · Thesis Supervisors: Prof. Mohammad Ali Oghabian and Prof. Shahram Samadi ◊ [September 2016 - September 2019] Kermanshah University of Medical Sciences (KUMS) M.Sc. in Medical Physics · Cumulative GPA: 18.99/20.00 (3.79/4). · Thesis: Assessment of the most important parameters affecting the dosimetry of small fields in megavoltage photon beams · Thesis Supervisor: Prof. Abbas Haghparast ◊ [September 2012 - September 2016] Lorestan University of Medical Sciences (LUMS) B.Sc. in Radiology · Cumulative GPA: 18.31/20.00 (3.66/4). ◊ [September 2008 - July 2012] Imam Jaafar Sadigh High School, Khoramabad, Lorestan, Iran Diploma in Experimental Sciences · Cumulative GPA: 19.33/20.00 (3.86/4).
Skills	◊ Programming Languages: Pre-professional experience with MATLAB. Pre-professional experience with bio-statistical analysis (STATA software). Preliminary experience with Python. ◊ Softwares: Freesurfer, Freeview, SPM tool-box, FSL, CAT, CONN tool-box, ITK-SNAP, dicom2nifti, MRICron and MRICro, ClearCanvas, ExploreDTI, RadiAnt, DICOM Viewer ◊ Typesetting: LaTeX, Microsoft Word. ◊ Operating System: Linux (Ubuntu), Windows. ◊ Additional Languages: Persian (Native), English (limited proficiency)

Publications	Alireza Tabibkhouei, Maryam Jalali, Vahid Valinejad, Ehsan Shekari, Mahdi Mohammadi, Zeinab Oghabian, Pooya Derakhshan, Mohammad Javad Abdolhay, Mohammad Ali Oghabian, "Persian Paradigm for Language Cortical Mapping: Development, Feasibility, and Evaluation", Brain and Behavior, https://doi.org/10.1002/brb3.71324 Mahdi Mohammadi, Shahram Samadi, Seyed Amir Hossein Batouli, Khalil Pestei, Mohammad Ali Oghabian, "Reduced Oxygen Extraction Fraction as a Biomarker for Cognitive Deficits in Obstructive Sleep Apnea", Brain and Behavior, https://doi.org/10.1002/brb3.70273 Mahdi Mohammadi, Mohammad Ali Oghabian, Sadegh Ghaderi, Maryam Jalali, Shahram Samadi, "Volumetric Analysis of the Hypothalamic Subunits in Obstructive Sleep Apnea", Brain and Behavior, http://dx.doi.org/10.1002/brb3.70026 Sadegh Ghaderi, Mahdi Mohammadi, Fatemeh Sayehmiri, Sana Mohammadi, Arian Tavasol, Masoud Rezaei, Azadeh Ghalyanchi-Langeroudi, "Machine Learning Approaches to Identify Affected Brain Regions in Movement Disorders Using MRI Data: A Systematic Review and Diagnostic Meta-analysis", Journal of Magnetic Resonance Imaging (JMRI), https://doi.org/10.1002/jmri.29364 Sana Mohammadi, Sadegh Ghaderi, Mahdi Mohammadi, Zahra Najafi Asli Pashaki, Rahim Khatyal, Fatemeh Mohammadian, Sahar Mohammadjani, "Thalamic Alterations in Motor Neuron Diseases: A Systematic Review of MRI Findings", Journal of Integrative Neuroscience, https://doi.org/10.31083/j.jin2304077 Sadegh Ghaderi, Sana Mohammadi, Kayvan Ghaderi, Fereshteh Kiasat, Mahdi Mohammadi, "Marker-Controlled Watershed Algorithm and Fuzzy C-means Clustering Machine Learning Approach for Automated Segmentation of Glioblastoma Multiforme from MRI Images in a Case Series", Annals of Medicine and Surgery, https://doi.org/10.1097/ms9.0000000000001756 Sadegh Ghaderi, Sana Mohammadi, Mahdi Mohammadi, Zahra Najafi Asli Pashaki, Mehrsa Heidari, Rahim Khatyal, Rasa Zafari, "A Systematic Review of Brain Metastases from Lung Cancer Using Magnetic Resonance Neuroimaging: Clinical and Technical Aspects", Journal of Medical Radiation Sciences; https://doi.org/10.1002/jmrs.756 Mahdi Mohammadi, Shabnam Banisharif, Fatemeh Moradi, Maryam Zamanian, Ghazal Tanzifi, Sadegh Ghaderi, "Brain Diffusion MRI Biomarkers After Oncology Treatments", Reports of Practical Oncology and Radiotherapy, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10954263/ Sana Mohammadi, Mahdi Mohammadi, Sadegh Ghaderi, "Sleep-related regions in neurodegenerative diseases by central nervous system localization using magnetic resonance imaging", Psychiatry Research: Neuroimaging; https://doi.org/10.1016/j.psychresns.2023.111727 Sadegh Ghaderi, Sana Mohammadi, Mahdi Mohammadi, "Obstructive Sleep Apnea and Attention Deficits: A Systematic Review of Magnetic Resonance Imaging Biomarkers and Neuropsychological Assessments", Brain and Behavior; https://pubmed.ncbi.nlm.nih.gov/37743582/ Sana Mohammadi, Sadegh Ghaderi, Kayvan Ghaderi, Mahdi Mohammadi, Masoud Hoseini Pourasl, "Automated segmentation of meningioma from contrast-enhanced T1-weighted MRI images in a case series using a marker-controlled watershed segmentation and fuzzy C-means clustering machine learning algorithm", International Journal of Surgery Case Reports; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10514425/ Mahdi Mohammadi, Sana Mohammadi, Hojatollah Hadizadeh, Mahsa Olfati, Fatemeh Moradi, Ghazal Tanzifi, Sadegh Ghaderi, "Brain Metastases from Breast Cancer Using MRI: A Systematic Review", Journal of Medical Radiation Sciences; https://pubmed.ncbi.nlm.nih.gov/37563948/ Sadegh Ghaderi, Sana Mohammadi, Mehrsa Heidari, Seyedeh Shadi Sharif Jalali, Mahdi Mohammadi (CA), "Post-COVID-19 Vaccination CNS Magnetic Resonance Imaging Findings: A Systematic Review", Canadian Journal of Infectious Diseases and Medical Microbiology; https://pubmed.ncbi.nlm.nih.gov/37427078/
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	Sadegh Ghaderi, Asra Karami, Azadeh Ghalyanchi-Langeroudi, Negar Abdi, Seyedeh Shadi Sharif Jalali, Masoud Rezaei, Parastou Kordestani-Moghadam, Shabnam Banisharif, Maryam Jalali, Sana Mohammadi, Mahdi Mohammadi (CA), "MRI findings in movement disorders and associated sleep disturbances", American Journal of Nuclear Medicine and Molecular Imaging; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10349287/ Sadegh Ghaderi, Mahsa Olfati, Majid Ghaderi, Hojatollah Hadizadeh, Ghazal Yazdanpanah, Zahra Khodadadi, Asra Karami, Zahra Papi, Negar Abdi, Seyedeh Shadi Sharif Jalali, Rahim Khatyal, Shabnam Banisharif, Fatemeh Bahari, Marziyeh Zarsvandnia, Sana Mohammadi, Mahdi Mohammadi (CA), "Neurological manifestation in COVID-19 disease with neuroimaging studies", American Journal of Neurodegenerative Disease; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10195392/ Fatemeh Panahi, Mahdi Mohammadi, Fatemeh Naserpour, Nahid Hassanpour, Mehrdad Gholami, "Entrance dose determination and effective dose calculation in chest and skull radiographies: an experimental and computational study", International Journal of Radiation Research; http://dx.doi.org/10.52547/ijrr.19.4.16 Leyla Ansari, Ibrahim Sharifi, Hadis Ghadrijan, Negar Azarpira, Farideh Momeni, Hamed Zamani, Naser Rasouli, Mahdi Mohammadi, Alireza Mehdizadeh, Razzagh Abedi-Firouzjah, "Synthesis, Characterization and MRI Application of Cobalt-Zinc Ferrite Nanoparticles Coated with DMSA: An In-vivo Study", Applied Magnetic Resonance; https://doi.org/10.1007/s00723-020-01220-2 Mahdi Mohammadi, Abbas Haghparast, Nima Rostampour, Razieh Zaghian, Meysam Zarsav, "Assessment of polarization and ion recombination correction factors and leakage of small megavoltage photon beams", International Journal of Radiation Research; http://ijrr.com/article-1-2873-en.html Fataneh Nemati, Mahdi Mohammadi, Mehrdad Gholami, "A Survey on Exposure Parameters Variation due to Aging in Radiology Devices", Journal of Biomedical Physics and Engineering; https://pubmed.ncbi.nlm.nih.gov/34189129/ Razieh Zaghian, Abdolazim SedighiPashaki, Abbas Haghparast, Mohammad Hadi Gholami, Mahdi Mohammadi, "Investigation of Collapsed-cone Algorithm Accuracy in Small Fields and Heterogeneous Environments", Journal of Biomedical Physics and Engineering; https://pubmed.ncbi.nlm.nih.gov/33937122/
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Accepted	
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Under-Revision	Sex Differences in Hypothalamic Volume and Associated Subunits
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Notable Projects	◊ Advanced structural and functional neuroimaging study in OSA —2019 - 2024 – Under the Supervision of Prof. M.A. Oghabian and Dr. Sh. Samadi ◊ Cortical and Sub-cortical MRI Biomarkers in OSA —2019 - 2024 – Under the Supervision of Prof. M.A. Oghabian and Dr. Sh. Samadi
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Teaching Experience	◊ Advanced MRI Teacher Assistant 2021-2022 First Semester Teacher Assistant - Tehran University of Medical Sciences - Under the Supervision of Prof. M.A. Oghabian ◊ Quantitative MRI Teacher Assistant 2021-2022 Second Semester Teacher Assistant - Tehran University of Medical Sciences - Under the Supervision of Prof. M.A. Oghabian ◊ Advanced MRI Teacher Assistant 2021-2022 Second Semester Teacher Assistant - Tehran University of Medical Sciences - Under the Supervision of Prof. M.A. Oghabian ◊ Advanced MRI Teacher Assistant 2022-2023 Second Semester Teacher Assistant - Tehran University of Medical Sciences - Under the Supervision of Prof. M.A. Oghabian ◊ Advanced MRI Teacher Assistant 2024-2025 First Semester Teacher Assistant - Tehran University of Medical Sciences - Under the Supervision of Prof. M.A. Oghabian ◊ Quantitative MRI Teacher Assistant 2024-2025 Second Semester Tehran University of Medical Sciences ◊ CT scan and Techniques 2018-2019 Second Semester Lecturer - Lorestan University of Medical Sciences ◊ Radiographic Equipment 2018-2019 Second Semester Lecturer - Lorestan University of Medical Sciences ◊ DTI Workshop 2022 Fall 2021 Lecturer and Organizer - Tehran University of Medical Sciences (Neuroimaging and Analysis Group (NIAG)) - Under the Supervision of Dr. M.A. Oghabian and Dr. S.A.H. Batouli ◊ fMRI Workshop 2022 May 2022 Lecturer and Organizer - Tehran University of Medical Sciences (Neuroimaging and Analysis Group (NIAG)) - Under the Supervision of Dr. M.A. Oghabian and Dr. S.A.H. Batouli ◊ Tumor Mapping Workshop 2023 (MRS and Perfusion) March 2023 Lecturer and Organizer - Tehran University of Medical Sciences (Neuroimaging and Analysis Group (NIAG)) - Under the Supervision of Dr. M.A. Oghabian and Dr. S.A.H. Batouli ◊ Brain Volumetric Analysis Classes 2024 Fall 2024 Lecturer - Tehran University of Medical Sciences (Neuroimaging and Analysis Group (NIAG)) ◊ DWI and DTI Classes 2024 Fall 2024 Lecturer - Tehran University of Medical Sciences (Neuroimaging and Analysis Group (NIAG)) ◊ MRI physics, techniques, and clinics (A to Z) 2021-2024 Lecturer and Organizer - Galleny.com ◊ The 15th Interdisciplinary Seminar of Iran's Brain Mapping Student Branch December 2021 Lecturer - National Brain Mapping Laboratory (NBML) ◊ Basic Principles of Diffusion and Perfusion MRI September 2021 Lecturer - National Brain Mapping Laboratory (NBML)
Work Experience and Professional Activity	◊ Volumetry, Corticometry, and Perfusion MRI Analysis in NIAG (cniag.ir) Sept. 2019 – Present ◊ CEO in Galleny Team (Galleny.com) Sept. 2016 – Present ◊ Reviewer for Journal of Psychosomatic Research (Indexed in ISI, Scopus, Pubmed, Embase) Sept. 2025 - Present ◊ Reviewer for Discover Oncology (Indexed in ISI, Scopus) Aug. 2025 - Present ◊ Reviewer for BMC Medical Imaging (Indexed in ISI, Scopus, Pubmed, DOAJ) Mar. 2025 - Present ◊ Reviewer for BMC Neurology (Indexed in ISI, Scopus, Pubmed, Embase, DOAJ) Mar. 2025 - Present ◊ Reviewer for Journal of Neuro-Oncology (Indexed in ISI, Scopus, Pubmed, Embase) Mar. 2025 - Present ◊ Reviewer for Scientific Reports (ISI, Scopus, Pubmed, DOAJ) Mar. 2025 - Present ◊ Reviewer for Heliyon (Indexed in ISI, Scopus, Pubmed, DOAJ) Jul. 2023 - Present ◊ Reviewer for PLoS ONE (Indexed in ISI, Scopus, Pubmed, Embase, DOAJ) Dec. 2023 - Present ◊ Reviewer for Iranian Journal of Radiology (Indexed in ISI, Scopus, Pubmed, Embase) Nov. 2022 - Present
Hobbies	Reading, Football, Watching Movies, Listening to Iranian classical music, Learning a New Language