AMIR KHORASANI. D.

Assistant Professor of Medical Physics, Department of Bioimaging, School of Advanced Medical Technology, Isfahan University of Medical Sciences, Isfahan, Iran.

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Date of birth 1990/09/01
Place of birth: Tehran, Iran

EDUCATION

ISFAHAN UNIVERSITY OF MEDICAL SCIENCES, ISFAHAN, IRAN

Degree: Ph.D. in medical physics

Graduation Month & Year: September 2022

Thesis topic: Application of diffusion magnetic resonance imaging and T_2 and T_2* mapping to determine the Glioma grading using neural networks

Advisor: Dr. Mohamad Bagher Tavakoli

TARBIAT MODARES UNIVERSITY, TEHRAN, IRAN.

Degree: M. Sc. In medical physics

Graduation Month & Year: June 2016

Thesis topic: Analysis of tissue conductivity at high frequency and low electric field intensity in irreversible electroporation and its impact on the distribution of the electric field using finite element simulation

Advisor: Dr. S.M.P Firoozabadi

YAZD UNIVERSITY OF MEDICAL SCIENCES, YAZD, IRAN.

Degree: B. Sc. In radiology

Graduation Month & Year: July 2013

PUBLICATIONS

1. Khorasani A, Moghim S, Wagemans J, Lavigne R, Mirzaei A. Antibiotic profile classification of Proteus mirabilis using machine learning: An investigation into multidimensional radiomics features. Computers in Biology and Medicine. 2024 Nov 1;182:109131.

2. Aminolroayaei F, Shahbazi-Gahrouei S, Khorasani A, Shahbazi-Gahrouei D. A review of imaging methods and recent nanoparticles for breast cancer diagnosis. Information. 2023 Dec 22;15(1):10.

3. Khorasani A, Dadashi serej N, Jalilian M, Shayganfar A, Tavakoli MB. Performance comparison of different medical image fusion algorithms for clinical glioma grade classification with advanced magnetic resonance imaging (MRI). Scientific Reports. 2023 Oct 17;13(1):17646.

4. Khorasani A, Tavakoli MB. Multiparametric study for glioma grading with FLAIR, ADC map, eADC map, T1 map, and SWI images. Magnetic Resonance Imaging. 2023 Feb 1;96:93-101.

5. Tavakoli MB, Khorasani A, Jalilian M. Improvement grading brain glioma using T2 relaxation times and susceptibility-weighted images in MRI. Informatics in Medicine Unlocked. 2023 Jan 1;37:101201.

6. Khorasani A, Shahbazi-Gahrouei D, Safari A. Recent metal nanotheranostics for cancer diagnosis and therapy: a review. Diagnostics. 2023 Feb 22;13(5):833.

7. Esmailzadeh A, Abedi I, Khorasani A. Investigating variation of dose gradient index by different grid sizes in intensity-modulated radiation therapy of optic nerve sheath meningioma. Applied Radiation and Isotopes. 2023 Mar 1;193:110657.

8. Khorasani A. Automated irreversible electroporated region prediction using deep neural network, a preliminary study for treatment planning. Electromagnetic Biology and Medicine. 2022 Oct 2;41(4):379-88.

9. Khorasani A, Kafieh R, Saboori M, Tavakoli MB. Glioma segmentation with DWI weighted images, conventional anatomical images, and post-contrast enhancement magnetic resonance imaging images by U-Net. Physical and Engineering Sciences in Medicine. 2022 Sep;45(3):925-34.

10. Khorasani A, Tavakoli MB, Saboori M. Using of Laplacian Re-decomposition image fusion algorithm for glioma grading with SWI, ADC, and FLAIR images. Polish Journal of Medical Physics and Engineering. 2021 Dec;27(4):261-9.

11. Khorasani A. Finite element analysis of cell killing probability in electroporation with single bipolar electrode. Frontiers in Biomedical Technologies. 2021 Mar 30;8(1):20-5.

12. Khorasani A. Clinical usage of tissue electrical conductivity during the electroporation: An essential and useful factor. Frontiers in Biomedical Technologies. 2021 Mar 30;8(1):61-9.

13. Khorasani A, Tavakoli MB, Saboori M, Jalilian M. Preliminary study of multiple b-value diffusion-weighted images and T1 post enhancement magnetic resonance imaging images fusion with Laplacian Re-decomposition (LRD) medical fusion algorithm for glioma grading. European Journal of Radiology Open. 2021 Jan 1;8:100378.

14. Khorasani A, Chegini A, Mirzaei A. New Insight into Laboratory Tests and Imaging Modalities for Fast and Accurate Diagnosis of COVID-19: Alternative Suggestions for Routine RT-PCR and CT—A Literature Review. Canadian Respiratory Journal. 2020 Nov 28;2020.

15. Khorasani A. A numerical study on the effect of conductivity change in cell kill distribution in irreversible electroporation. Polish Journal of Medical Physics and Engineering. 2020 Jun 25;26(2):69-76.

16. Khorasani A. The effect of conductivity changes on temperature rise during irreversible electroporation. Frontiers in Biomedical Technologies. 2020;7(3):178-85.

17. Khorasani A, Firoozabadi SM, Shankayi Z. Conductivity change with needle electrode during high frequency irreversible electroporation: a finite element study. Polish Journal of Medical Physics and Engineering. 2019 Dec;25(4):237-42.

18. Shahbazi-Gahrouei D, Khaniabadi PM, Shahbazi-Gahrouei S, Khorasani A, Mahmoudi F. A literature review on multimodality molecular imaging nanoprobes for cancer detection. Polish Journal of Medical Physics and Engineering. 2019 Jun;25(2):57-68.

19. Khorasani A, Firoozabadi SM, Shankayi Z. Conductivity Changes of Liver Tissue during Irreversible Electroporation and Calculation of the Electric Field Distribution. Modares Journal of Biotechnology. 2018 Sep 10;9(2):227-32.

20. Khorasani A, Firoozabadi SM, Shankayi Z. Finite element analysis of tissue conductivity during high-frequency and low-voltage irreversible electroporation. Iranian Journal of Medical Physics. 2017 Sep 1;14(3):135-40.

21. Khorasani A. Thermal damage map prediction during irreversible electroporation with U-Net. Electromagnetic Biology and Medicine. 2023 Dec 31:1-1.

22. Aminolroayaei F, Shahbazi-Gahrouei S, Khorasani A, Shahbazi-Gahrouei D. A Review of Imaging Methods and Recent Nanoparticles for Breast Cancer Diagnosis. Information. 2023 Dec 22;15(1):10.

PRESENTATIONS

1. Khorasani A, Firoozabadi SM, Shankayi Z. Conductivity Changes of Liver Tissue during Irreversible Electroporation and Calculation of the Electric Field Distribution. Modares Journal of Biotechnology. 2018 Sep 10;9(2):227-32.

POSTERS
1. Khorasani A. Automated Irreversible electroporated region prediction in different electrode type with deep learning approach. 4th World Congress on Electroporation and Pulsed Electric Fields in Biology, Medicine and Food & Environmental Technologies. 2022.
2. Mesbahi, A., Khorasani, A., Mahmoudi, F., Aminolroayaei, F., Rasouli, N. The Role of radiobiological parameters on Tumor control probability (TCP) in prostate cancer. Iranian Journal of Medical Physics, 2018; 15(Special Issue-12th. Iranian Congress of Medical Physics): 253-253. doi: 10.22038/ijmp.2018.12889.

BOOKS

Translation in to Farsi:

1. Clark's Positioning in Radiography
2. MRI Questions & Answers; MR imaging physics & technology
3. Radiologic Science for Technologists

PROFESSIONAL EXPERIENCE

ISFAHAN UNIVERSITY OF MEDICAL SCIENCES
Teacher assistant, professor assistant, and researcher, 2018-now.

ELSEVIER REVIEWER
review for some Elsevier journals

SKILLS

programming language:
        Python
        MATLAB

Software:
        Anaconda
        MATLAB image processing toolbar
        COMSOL Multiphysics
        Microsoft office
        SPSS

3D Slicer
etc.

Operation system:
Microsoft Windows
MacOS

language:
Persian
English

TEACHING EXPERIENCE

ISFAHAN UNIVERSITY OF MEDICAL SCIENCES
Teacher assistant, Department of medical physics, 2018-2022
Teaching different courses for under graduated student such as:

1. General Physics
2. Radiation physics
3. Ultrasound physics and using in medicine
4. Medical physics
5. Radiobiology
6. Radiation protection

ISFAHAN UNIVERSITY OF MEDICAL SCIENCES
Professor assistant, Department of medical imaging, 2022-now
Teaching 'Advanced MRI imaging and physics' for Ph.D. student.
Teaching 'The physics of fMRI' for Ph.D. student.
Teaching 'Quantitative image analyses' for Ph.D. student.

AWARDS AND HONORS

Top student in Ph.D. degree

Member of Iran's National Elites Foundation (برنامه شهید صیاد شیرازی)

Top speaker at 3th Iranian Bioelectromagnetic conference, Tehran, Iran, 2016.

Membership

The American Association of Physicists in Medicine (AAPM)

RESEARCH INTERESTS

Medical imaging
Machine learning

Curriculum Vitae (CV)

Deep-learning
Radiomics feature analysis
Tumor segmentation
Tumor classification
Medical image fusion
Image processing
Magnetic resonance imaging protocols
Finite element analysis
Irreversible electroporation
Treatment planning for irreversible electroporation