SAJAD P SHAYESTEH

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Department of Physiology and Medical Physics, School of Medicine, Alborz University of Medical Science, Alborz province, Karaj, Iran

Date of Birth	23 Oct 1986
Marital Status	married

EDUCATIONAL BACKGROUND

PhD	**Medical Physics,** Department of Medical Physics, Iran University of Medical science (IUMS), Tehran, Iran	**2011-2015**
MSc	**Medical Physics**, Department of Medical Physics, Kermanshah University of Medical science (KUMS), Kermanshah, Iran	**2009-2011**
BSc	**Radiology Technology**, Department of Radiology, Tehran University of Medical science (TUMS), Tehran, Iran	**2005-2009**

SKILLS

Object Oriented Programming

Python (Advance), R, Matlab

Data Science

Sklearn, NumPy, SciPy, Pandas, Matplotlib, Seaborn

Machine / Deep Learning

Tensorflow, Pythorch, Keras, Scikit-Learn, Python library

Image Processing

OpenCV, ITK, Pillow, Nibabel, Scikit-Image, PIL

Radiomics analysis of medical images.

Pyradiomics Python Library, IBEX, SERA

RESEARCH INTERESTS

Quantitative Tomographic Imaging
Image reconstruction in Tomographic Imaging
Machine Learning and Deep Learning

- Machine Learning Algorithm
- Convolution Neural Network (CNN),
- Generative Adversial Network (GAN) architectures

Data science and Data Mining in Research and Clinic
Computational Biology, Bioinformatics
Integration of Panomics Data via Machine Learning in Personalize Medicine

- Genomics
- Proteomics
- Radiomics and Radiogenomics

Improving Diagnostic and Prognostic Model in Personalize Medicine

WORK EXPERIMENT

2011 lecturer at Hamadan University of medical science. Radiology department

2012-2014 Faculty member of Kermanshah University of medical science. Radiology and nuclear medicine department.

2018 - ….. Faculty member of Alborz University of medical science. Medical physics department.

PUBLICATIONS

Journal and Conference Publications

1- Shayesteh, S., et al., **Treatment response prediction using MRI-based pre-, post-, and delta-radiomic features and machine learning algorithms in colorectal cancer**. Medical physics, 2021.

2- Shiri, I., et al., **Ultra-low-dose chest CT imaging of COVID-19 patients using a deep residual neural network**. European radiology, 2021. 31(3): p. 1420-1431.

3- Shayesteh, S., et al., **Predicting lung cancer Patients' survival time via logistic regression-based models in a quantitative radiomic framework.** Journal of Biomedical Physics & Engineering, 2020. 10(4): p. 479.

4- Shayesteh, S.P., et al., **Author Correction: Prediction of Response to Neoadjuvant Chemoradiotherapy by MRI-Based Machine Learning Texture Analysis in Rectal Cancer Patients** (Journal of Gastrointestinal Cancer,(2020), 51, 2,(601-609), 10.1007/s12029-019-00291-0). Journal of gastrointestinal cancer, 2020. 51(2): p. 610.

5- Shiri, I., et al., **Repeatability of radiomic features in magnetic resonance imaging of glioblastoma: Test–retest and image registration analyses**. Medical Physics, 2020. 47(9): p. 4265-4280

6- Shayesteh, S.P., et al., **Neo-adjuvant chemoradiotherapy response prediction using MRI based ensemble learning method in rectal cancer patients**. Physica Medica, 2019. 62: p. 111-119.

7- Dehlaghi, V., et al., **Prediction of the thickness of the compensator filter in radiation therapy using computational intelligence.** Medical Dosimetry, 2015. 40(1): p. 53-57

8- **Ultra-low dose chest CT imaging of COVID-19 patients using deep neural networks** **Shiri I**, Akhavanallaf A, Sanaat A, Askari D, Salimi Y, Mansouri Z, Shayesteh SP, Rezaei-Kalantari K, Salahshour A, Sandoughdaran S, Abdollahi H, Arabi H and Zaidi H **IEEE Nuclear Science Symposium & Medical**

9- **MRI Delta-radiomic features integrated with clinical parameters for prediction of treatment response in colorectal cancer** Shayesteh PS, Salahshour A, Nazari M, Hajianfar G, Sandoughdaran S, **Shiri I** and

Zaidi H **IEEE Nuclear Science Symposium & Medical Imaging Conference, Boston, MA, USA, 31 October - 7 November 2020.**

10- **Machine learning-based prediction of thyroid nodules malignancy: Radiomic analysis of ultrasound images** Shayesteh PS, Salahshour A, Nazari M, **Shiri I** and Zaidi H **IEEE Nuclear Science Symposium & Medical Imaging Conference, Boston, MA, USA, 31 October - 7 November 2020.**

11- **Test-Retest Reproducibility and Robustness Analysis of Recurrent Glioblastoma MRI Radiomics Texture Features,** saac Shiri, Hamid Abdollahi , Sajad Shaysteh, Seied Rabi Mahda, April 12, 2017, 14 (Special Issue); e48035

12- **Deep Learning Based Multiclass Classification of Thyroid Scintigraphy,** Ghasem Hajianfar, Soroush Bagheri, Kourosh Fattahi, Mohsen Sattari, Sajad P Shayesteh, Mohsen Arabi, Sepideh Hekmat, Yazdan Salimi, Mehrdad Oveisi, Isaac Shiri, Habib Zaidi, Publication date 2022/6/1

Journal Papers in Review

1. **COVID-19 Prognostic Using CT Radiomic Features and Machine Learning Algorithms: Analysis of a Multi-Institutional Dataset of 14,339 Patients *I Shiri***, Y Salimi, M Pakbin, G Hajianfar, A Haddadi Avval, A Sanaat, S Mostafaei, A Akhavanallaf, A Saberi, Z Mansouri , D Askari , M Ghasemian, E Sharifipour , S Sandoughdaran1 , A Sohrabi , E Sadati, D Livani, P Iranpour , S Kolahi , M Khateri, S Bijari, M Reza Atashzar, S P. Shayesteh , M R Babaei , E Jenabi, M Hasanian, A Shahhamzeh , SY Foroghi Gholami, A Mozafari, A Teimouri , F Movaseghi, A Ahmari, N Goharpey, R Bozorgmehr, H Shirzad-Aski, R Mortazavi, J Karimi, N Mortazavi, S Besharat, M Afsharpad, H Abdollahi, P Geramifar , AR Radmard, H Arabi , K Rezaei-Kalantari , M Oveisi, A Rahmim & H Zaidi
2. **Diagnosis of COVID-19 Using CT image Radiomics Features: A Comprehensive Machine Learning Study Involving 26,307 Patients *I Shiri***, Y Salimi, A Saberi, M Pakbin, G Hajianfar, A Haddadi Avval, A Sanaat, A Akhavanallaf, S Mostafaei, Z Mansouri, D Askari, M Ghasemian, E Sharifipour, S Sandoughdaran, A Sohrabi, E Sadati, S Livani, P Iranpour, S Kolahi, B Khosravi, M Khateri, S Bijari, MR Atashzar, S P. Shayesteh, MR Babaei, E Jenabi, M Hasanian, A Shahhamzeh, SY Foroghi Gholami, A Mozafari, H Shirzad-Aski, F Movaseghi, R Bozorgmehr, N Goharpey, H Abdollahi, P Geramifar, AR Radmard, H Arabi, K Rezaei-Kalantari, M Oveisi, A Rahmim & H Zaidi
3. **Machine learning-based prediction of thyroid nodules malignancy: Radiomic analysis of ultrasound images** Shayesteh PS, Salahshour A, Nazari M, **Shiri I** and Zaidi H
4. **Metabolic and texture features of PET/CT to predict response in patients with locally advanced rectal cancer treated by concurrent chemoradiationModeling** Sajad P Shayesteh

Conference Proceeding and Abstracts

1- **Application of radiomics and artificial intelligence in survival prediction of lung cancer patients *Isaac Shiri***, Parham Geramifar, Hamid Abdollahi, Ghasem Hajianfar, Sajad Shayesteh, Pouraliakbar Hamidreza, Ali Mohammadzadeh, Ahmad Bitarafan-Rajabi, **European Congress of Radiology (ECR)** 2018, Vienna, Austria

2- **Discovery of histopathology and overall staging in lung cancer using intra-tumoral heterogeneity quantification in CT scan *Isaac Shiri***, Hamid Abdollahi, Ghasem Hajianfar, Sajad Shayesteh, Ahmad Bitarafan-Rajabi, Parham Geramifar, **European Congress of Radiology (ECR)** 2018, Vienna, Austria

3- **Wavelet-based radiomics texture features stability in MRI of GBM patients: a test-retest study *Isaac Shiri***, Ghasem Hajianfar, Hamid Abdollahi, Sajad Shayesteh, Pouraliakbar Hamidreza, Amirhossein Sanaat, Ahmad Bitarafan-Rajabi, Parham Geramifar, **European Congress of Radiology (ECR)** 2018, Vienna, Austria

4- **MRI delta-radiomics feature robustness and reproducibility: the impact of image registration and day-to-day repeat-ability in GBM cancer patient *Isaac Shiri***, Ghasem Hajianfar, Hamid Abdollahi, Sajad Shayesteh, Pouraliakbar Hamidreza, Ahmad Bitarafan-Rajabi, Parham Geramifar, **European Congress of Radiology (ECR)** 2018, Vienna, Austria

5- **Variability and stability of Radiomics features in Magnetic Resonance Images due to different acquisition modes and Reconstruction Settings in Glioblastoma patient *Isaac Shiri***, Hamid Abdollahi, Sajjad Shayesteh, Ahmad bitarafan1, Seied Rabi Mahdavi **Congress of Radiology**, Iran 2017

6- **Test-retest reproducibility and robustness analysis of recurrent glioblastoma MRI Radiomics texture features *Isaac Shiri***, Hamid Abdollahi, Sajjad Shayesteh, Ahmad bitarafan1, Seied Rabi Mahdavi **congress of Radiology**, Iran 2017

7- **Breast cancer diagnosis from mammography image biomarker via machine learning approaches *Isaac Shiri***, Hamid Abdollahi, Sajjad Shayesteh, Ahmad bitarafan1, Seied Rabi Mahdavi 32 **congress of Radiology**, Iran 2017

8- **Application of machine learning methods for prediction of breast cancer recurrence: A study on pathology image features Hamid** Abdollahi, ***Isaac Shiri***,Sajad Shayesteh, Seied Rabi Mahdavi 10th **International Breast Cancer Congress**, Iran 2016

9- **Variability and stability of PET Radiomics features due to different acquisition modes and Reconstruction Settings *Isaac Shiri***, Ahmad Bitarafan-Rajabi, Pardis Ghafarian, Sajad shayesteh, Hamid Abdollahi, Mohammad Reza Ay, Mehrdad Bakhshsiesh karam **20th Congress of Nuclear Medicine**, Iran 2016

10- **Impact of Helical and CINE CT attenuation correction on Radiomics texture features of PET *Isaac Shiri***, Sajad shayesteh, Hamid Abdollahi, Ahmad Bitarafan-Rajabi, Yazdan Salimi, Maziyar Khateri, Reza Mehdinia **20th Congress of Nuclear Medicine**,Iran 2016

11- **New Era of Science Emersion of Radiomics: Merging of Radiology, Computer and Molecular Biology Sciences *Isaac Shiri***, Hamid Abdollahi, Sajad P. Shayesteh **31th congress of radiology**, Iran 2016

12- **OPTIMAL SENSITOMETRIC AND ISODOSE CURVES OF X-OMAT V FILM IN RADIOTHERAPY.** SAJAD P SHAYETSEH. MOSTAFA TAGHIPOUR. BEHRUZ MORADHASEL. VAHAB DEHLAGHI, MEDICAL PHYSICS AND BIOMEDICAL ENGINEERING. MAY 2012. CHAINA.

13- **Continuous monitoring and control of ionizing air system in nuclear medicine department**, , sajad p.shayeste , Isaac shiri, Mostafa taghipour ,Mohammad Taghi Eivazi,Vahab Dehlaghi, 5th International and 17th Iranian Congress of Nuclear Medicine ,1-3 may 2013

14- **Optimal Sensitometric and Isodose Curves of X-omat V Film in Radiotherapy** shayesteh p Sajad , Eivazi Mohammad Taghi, Haghparast Abbass , Shiri Isaac 11th National congress of Medical Physics, 2014, Tehran, Iran.

15- **Relationship between occupational exposure and blood cells change in Radiation department staffs.** Shayesteh p Sajad, Shiri Isaac, ,Nazari Mostafa ,Moradi Milad 11th National congress of Medical Physics, 2014, Tehran, Iran.

16- **Evaluation of radiation protection principles observance according to ICRP recommendations in Nuclear medicine department**. Shayeste p Sajad , Shiri Isaac, ,Nazari Mostafa ,Moradi Milad, Haghparast abbadd Eivazi Mohammad taghi 11th National congress of Medical Physics, 2014, Tehran, Iran.

17- **Evaluation of Target absorbed dose in different methods of radiotherapy after mastectomy** Shayesteh .P S , Shiri.I ,Eivazi. M.T, Amirifard.N 11th National congress of Medical Physics, 2014, Tehran, Iran.

18- **Evaluation of risk versus benefit of nuclear medicine diagnostic tests** , Isaac shiri, Zahra ghfari, Mahmoud Jalili, Babak Nazari, Sajad p Shaysteh. 6th International and 18th Iranian Congress of Nuclear Medicine ,12-14 November 2014.

19- **Design of neutron bubble dosimeter**, Isaac shiri, sajad p Shayeste, Mostafa Taghipour, 6th International and 18th Iranian Congress of Nuclear Medicine ,12-14 November 2014.

20- **Relationship between occupational exposure and blood cells change in nuclear medicine, radiology and radiotherapy workers** Shayeste P Sajad , Shiri Isaac, ,Nazari Mostafa ,Moradi Milad, 6th International and 18th Iranian Congress of Nuclear Medicine ,12-14 November 2014.

21- **Study of practice of Protocols of health physics and standards of radiation protection in nuclear medicine department**, Isaac shiri, Mostafa Nazari, sajad P shayeste, Abbas haghparast , Milad moradi, 6th International and 18th Iranian Congress of Nuclear Medicine ,12-14 November 2014.

22- **Comparative evaluation of lung absorbed dose in different methods of radiotherapy after mastectomy** Shiri.I, Shayesteh .P S , Eivazi. M.T, Amirifard.N، 10th International Breast Cancer Congress 25-27 Feb 2015.

23- **Evaluation of risk versus benefits of nuclear medicine cardiac perfusion SPECT** Shiri Isaac, Ghafari zahr, salami Yazdan, Shayesteh Sajad pashotan , Bagheri,Soroush Annual congress on Application of Optimized Medical Imaging Techniques & Procedures in Effective Diagnosis & Treatment of Disease 4-5 March 2015.

24- **Benefits and Risk of Fetal 3D Ultrasound** Shiri Isaac, Abdollahi Hamid, Eftekhari zeinab, salami Yazdan , Shayesteh Sajad pashotan , Bagheri,Soroush Annual congress on Application of Optimized Medical Imaging Techniques & Procedures in Effective Diagnosis & Treatment of Disease 4-5 March 2015.

25- **Uniformity of dose distribution in target volume in radiotherapy techniques for breast after Mastectomy**. Shayesteh P .S ،Shiri.I , , Eivazi. M.T,Amirifard.N 10th International Breast Cancer Congress 25-27 Feb 2015.

26- **Design of neutron bubble dosimeter for monitoring neutron dose in radiotherapy, accelerator and reactor sites** ,sajad P Shayeste, Isaac shiri, Mostafa Taghipour, Hamid abdollahi, Seid RM Mahdavi 2nd iranian particle accelerator conference 2015.

27- **Continuous monitoring and control of ionizing air system in nuclear medicine, radiotherapy, accelerator and cyclotron departments** Isaac shiri, sajad P Shayeste, Mostafa Taghipour, Hamid abdollahi, Seid RM Mahdavi, Ahmad Bitarafan-rajabi 2nd iranian particle accelerator conference 2015

28- **New Era of Science Emersion of Radiomics: Merging of Radiology, Computer and Molecular Biology Sciences** Isaac shiri, Hamid Abdollahi, Sajad P. Shayesteh 31th congress of radiology 2016

29- **Impact of Helical and CINE CT attenuation correction on Radiomics texture features of PET** Isaac Shiri, Sajad P shayesteh, Hamid Abdollahi, Ahmad Bitarafan-Rajabi , Yazdan Salimi , Maziyar Khateri, Reza Mehdinia

30- **Variability and stability of PET Radiomics features due to different acquisition modes and Reconstruction Settings** Sajad P shayesteh**,** Isaac Shiri, Ahmad Bitarafan-Rajabi , Pardis Ghafarian, , Hamid Abdollahi, Mohammad Reza Ay, Arman Rahmim ,Saeedi Ashrafinia, Mehrdad Bakhshsiesh karam 20th Congress of Nuclear Medicine 2016

31- **Application of machine learning methods for prediction of breast cancer recurrence: A study on pathology image features** Hamid Abdollahi, Isaac Shiri,Sajad P Shayesteh, Seied Rabi Mahdavi 10th International Breast Cancer Congress 2016

32- **Breast cancer diagnosis from mammography image biomarker via machine learning approaches** Isaac Shiri, Hamid Abdollahi, Sajad P Shayesteh, Ahmad bitarafan1, Seied Rabi Mahdavi 32 congress of Radiology 2017

33- **Test-retest reproducibility and robustness analysis of recurrent glioblastoma MRI Radiomics texture features** Sajad P Shayesteh , Isaac Shiri, Hamid Abdollahi, , Ahmad bitarafan1, Seied Rabi Mahdavi congress of Radiology 2017

34- **Variability and stability of Radiomics features in Magnetic Resonance Images due to different acquisition modes and Reconstruction Settings in Glioblastoma patient** Isaac Shiri, Hamid Abdollahi, Sajad P Shayesteh, Ahmad bitarafan1, Seied Rabi Mahdavi congress of Radiology 2017

PATENTS

1- **Continuous monitoring and control of ionizing air system in nuclear medicine, radiotherapy and radiology department** *sajad p.shayeste Isaac.shiri, , Mostafa taghipour. registration number 81805 and declaration number 13915014000309449*

2- **Design of neutron bubble dosimeter**, *sajad p.shayeste, Isaac shiri, Mostafa taghipour. registration number 81810 and declaration number* 139250140003001606

COMPUTER SKILLS

- Programing (C and C++, MATLAB)
- Pattern Recognition
- Artificial Neural Network (ANN)
- Machine Learning (Classification and Clustering)
- Deep Learning and Convolution Neural Network (CNN)

BOOK

Physics and Instrumentation of Nuclear Medicine2015

ISBN:978-600-7562-44-4,RoyanPazhoh Publication No. of page:255

Sajad p.Shayesteh, Isaac Shiri,Vahab Dehlaghi

1-Atom and structure of material 2-Radioactivity 3- Interaction of Radiation with Matter 4- Dose calibrator and well counter 5- The Gamma camera 6- Image Quality in Nuclear Medicine 7- Tomographic Reconstruction in Nuclear Medicine 8-SPECT 9-PET 10-PET/CT 11-Cycltron

JOURNAL REVIEWER

- IRANIAN JOURNAL OF RADIOLOGY
- European Radiology

REFERENCES

Dr. Ahmad Bitarafan Rajabi

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Bitarafan@hotmail.com