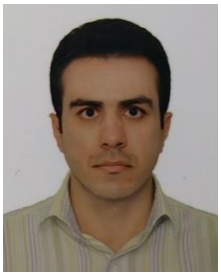
Curriculum Vitae (CV)



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Ali Abbasian Ardakani (Link)

Personal Information

Name: Ali Abbasian Ardakani

Date of Birth: April 03, 1989

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Marital Status: Single

Academic Background

B.Sc. in Optic & Laser Engineering **(2008-2012)**

Department of Applied Physics, Malek-Ashtar University of Technology, Shahin-shahr, Iran

- **Thesis:** Study Design Principles and Applications of Ellipsometry

M.Sc. in Medical Physics **(2012-2015)**

Department of Medical Physics, Faculty of Medicine, Urmia University of Medical Science, Urmia, IRAN

- **Thesis:** Diagnostic Validation of the Computerized Texture Analysis Methods in Differentiation Between Multiple Sclerosis Lesion and Normal Brain Tissue by Magnetic Resonance Imaging

Ph.D. in Medical Physics **(2015- 2018)**

Department of Medical Physics, Faculty of Medicine, Iran University of Medical Science, Tehran, IRAN

- **Thesis:** Performance Evaluation of the Computerized Texture Analysis in Differentiation Between Hyperfunction and Hypofunction Thyroid Nodules by Ultrasound Images in Comparison with Scintigraphy

Positions

Editorial Board Member of SN Comprehensive Clinical Medicine Journal, Springer, ISSN: 2523-8973, (link)

Research Projects

1- Classification of Breast Tumors Using Computerize Texture Analysis of Ultrasound Images **(2013-2015)**

2- Differentiation and Classification of Benign and Malignant Thyroid Nodules Using Computerize Texture Analysis in Ultrasound Images **(2014-2015)**

3- The Effect of Thermosensitivity of Human Prostate Carcinoma Cancer Stem Cells Enriched from DU145 Cell Lines Using Computerize Features Processing in Optical Microscope Images **(2016-2017)**

4- The Effect of Radiosensitivity of Human Prostate Carcinoma Cancer Stem Cells Enriched from DU145 Cell Lines Using Computerize Features Processing in Optical Microscope Images **(2016-2017)**

5- Evalution Of The Ability of Computer Features Analysis Extracted From Scintigraphy to Predict Kidney Function in Kidney Transplant Patients **(2017)**

6- Performance Evaluation of the Computerized Texture Analysis in Differentiation Between Hyperfunction and Hypofunction Thyroid Nodules by Ultrasound Images in Comparison with Scintigraphy **(2017-2019)**

Awards

- **"Top student"** among M.Sc. students of Medical Physics at Urmia University of Medical Sciences (UMSU).
- Recognized as "**Top Inventor**" by Iran's Ministry of Health and Medical Education at **M.Sc. Degree**.
- Recognized as "**Top Inventor**" by Iran University of Medical Sciences (IUMS) in research day (2016).
- Recognized as "**Top Inventor**" by Iran's Ministry of Health and Medical Education at **Ph.D. Degree**.
- Recognized the Book Entitle "Principle and Advanced Techniques of Ultrasound Waves in Diagnostic and Therapy" as **Iran's Top Medical Book** (2019)
- Recognized as "**Top National Research**" at the 27th Iran's Razi Research Festival (2022)
- Recognized as "**Top Scholar**" of The Iranian Academy of Medical Sciences (2023)

Publications

Articles

1- Singh, A., **Ardakani, A. A.**, Loh, H. W., Anamika, P. V., et al.. K. Automated detection of scaphoid fractures using deep neural networks in radiographs. *Engineering Applications of Artificial Intelligence*, 122 (2023), 106165. (ISI-Scopus)

2- **Ardakani, A.A**, Mohammadi, A., et al. Diagnosis of Metastatic Lymph Nodes in Patients With Papillary Thyroid Cancer: A Comparative Multi-Center Study of Semantic Features and Deep Learning-Based Models. *Journal of Ultrasound in Medicine*, 42(6) (2023), 1211-1221. (ISI-Pubmed-Scopus)

3- **Ardakani, A.A**, Mohammadi, A., Faeghi, F., & Acharya, U. R. Performance evaluation of 67 denoising filters in ultrasound images: A systematic comparison analysis. *International Journal of Imaging Systems and Technology*, 33(2) (2023), 445-464. (ISI-Pubmed-Scopus)

4- **Ardakani, A.A**, Afshin Mohammadi, Mohammad Mirza-Aghazadeh-Attari, and U. Rajendra Acharya. An open-access breast lesion ultrasound image database: Applicable in artificial intelligence studies. *Computers in Biology and Medicine* 152 (2023): 106438. (ISI-Pubmed-Scopus)

5- Mohammadi, A., Mirza-Aghazadeh-Attari, M., Faeghi, F., Homayoun, H., Abolghasemi, J., Vogl, T. J., ..., **Ardakani, A.A**.. Tumor microenvironment, radiology, and artificial intelligence: Should we consider tumor periphery?. *Journal of Ultrasound in Medicine*, 41(12) (2022), 3079-3090. (ISI-Pubmed-Scopus)

6- Hamyoon, H., Chan, W. Y., Mohammadi, A., Kuzan, T. Y., Mirza-Aghazadeh-Attari, M., Leong, W. L., ..., **Ardakani, A.A**. Artificial intelligence, BI-RADS evaluation and morphometry: A novel combination to diagnose breast cancer using ultrasonography, results from multi-center cohorts. *European Journal of Radiology*, 157 (2022), 110591. (ISI-Pubmed-Scopus)

7- Homayoun, Hassan, …, **Ardakani AA.** Applications of machine-learning algorithms for prediction of benign and malignant breast lesions using ultrasound radiomics signatures: A multi-center study. *Biocybernetics and Biomedical Engineering* 42.3 (2022): 921-933. (ISI-Pubmed-Scopus)

8- **Ardakani AA**, Kanafi AR, Acharya UR, Khadem N, Mohammadi A (2020) Application of deep learning technique to manage **COVID-19** in routine clinical practice using CT images: Results of 10 convolutional neural networks. Computers in biology and medicine 121:103795. (ISI-Pubmed-Scopus) (Link) (DOI: https://doi.org/10.1016/j.pdpdt.2020.101785)

9- Hadi F, Ghader A, Shakeri-Zadeh A …. **Ardakani AA** Magneto-plasmonic nanoparticle mediated thermo-radiotherapy procedure significantly affects the nonlinear optical properties of treated cancer cells. Photodiagnosis and photodynamic therapy. 2020 (ISI-Pubmed-Scopus) (Link) (DOI: https://doi.org/10.1016/j.compbiomed.2020.103795)

10- **Ardakani AA**, Afshar A, Bhatt S et al Diagnosis of carpal tunnel syndrome: A comparative study of shear wave elastography, morphometry and artificial intelligence techniques. *Pattern Recognition Letters* 2020;133:77-85 (ISI-Scopus) (Link) (DOI: https://doi.org/10.1016/j.patrec.2020.02.020)

11- Zabanran M, Asadi M, Zare-Sadeghi A, **Ardakani AA**, Shakeri-Zadeh A, Komeili A, et al. The effects of gold nanoparticles characteristics and laser irradiation conditions on spatiotemporal temperature pattern of an agar phantom: A simulation and MR thermometry study. *Optik*. 2019: 202:163718 (ISI-Pubmed-Scopus) (Link) (DOI: https://doi.org/10.1016/j.ijleo.2019.163718)

12- **Ardakani AA**, Satar A, Abolghasemi J, Mohammadi A. Assessment of Kidney Function after Allograft Transplantation Using Computerized Texture Analysis with Corresponding to Serum Creatinine: A Long Term Follow-Up Study. *Journal of Biomedical Physics and Engineering (JBPE).* (Pubmed-Scopus) (Link) (DOI: https://doi.org/10.31661/jbpe.v0i0.928)

13- **Ardakani AA**, Ghader A, Asgari H, Keshavarz M, Tazehmahalleh FE, Majles Ara MH, et al. The Capability of Nonlinear Optical Characteristics as a Predictor for Cellular Uptake of Nanoparticles and Cell Damage. *Photodiagnosis and Photodynamic Therapy*. 2019;27:442-448. (ISI-Pubmed-Scopus) (Link) (DOI: https://doi.org/10.1016/j.pdpdt.2019.07.023)

14- **Ardakani AA**, Bitarafan-Rajabi A, Mohammadi A et al. CAD system based on B-mode and color Doppler sonographic features may predict if a thyroid nodule is hot or cold. *European Radiology*. 2019;29:4258-4265. (ISI-Pubmed-Scopus) (Link) (DOI: https://doi.org/10.1007/s00330-018-5908-y)

15- **Ardakani AA**, Tahmasebi A, Pournajaf A, Ghader A. Assessment of nonlinear optical refractive index in identification of bacterial infection. *Laser Physics*. 2019;29:075602. (ISI-Scopus) (Link) (DOI: https://doi.org/10.1088/1555-6611/ab1585)

16- **Ardakani AA**, Bitarafan-Rajabi A, Mohammadzadeh A, Mohammadi A et al. A Hybrid Multi-Layer Filtering Approach for Thyroid Nodule Segmentation on Ultrasound Images. *Journal of ultrasound in medicine*. 2019;38:629-640. (ISI-Pubmed-Scopus) (Link) (DOI: https://doi.org/10.1002/jum.14731)

17- Alamzadeh Z, Beik J, Pirhajati MV, **Ardakani AA**, et al. Ultrastructural and optical characteristics of cancer cells treated by a nanotechnology based chemo-photothermal therapy method. *Journal of photochemistry and photobiology B, Biology* 2019;192:19-25. (ISI-Pubmed-Scopus) (Link) (DOI: https://doi.org/10.1016/j.jphotobiol.2019.01.005)

18- Ghader A, Gazestani AM, Minaei SE, **Ardakani AA** et al. Evaluation of Nonlinear Optical Behavior of Mouse Colon Cancer Cell Line CT26 in Hyperthermia Treatment. *Lasers in Medical Science*. 2019;34:1627–1635 (ISI-Pubmed-Scopus) (Link) (DOI: https://doi.org/10.1007/s10103-019-02759-8)

19- Ghader A, **Ardakani AA**, Ghaznavi H, et al. Evaluation of Nonlinear Optical Differences between Breast Cancer Cell Lines SK-BR-3 and MCF-7; an in Vitro Study. *Photodiagnosis and Photodynamic* Therapy. 2018;23:171-175. (ISI-Pubmed-Scopus) (Link) (DOI: https://doi.org/10.1016/j.pdpdt.2018.06.015)

20- Maleki M, Zahedmehr A, Galeshi B, Yaghoobi N, Bitarafan-Rajabi A, Maryam Mohammadzadeh, M, **Ardakani AA** et al. Diagnostic Ability of 384-Slice Computed Tomographic Angiography in Prediction of Myocardial Ischemia in Patients with Myocardial Bridging (MB) as Compared to SPECT-MPI Examination. *Iranian Journal of Radiology*. 2018;15:e55964. (ISI-Pubmed-Scopus) (Link) (DOI: https://doi.org/10.5812/iranjradiol.55964)

21- **Ardakani AA**, Mohammadzadeh A, Yaghoubi N, Ghaemmaghami Z, Reiazi R, Jafari AH, et al. Predictive quantitative sonographic features on classification of hot and cold thyroid nodules. *European Journal of Radiology*. 2018;101:170-177. (ISI-Pubmed-Scopus) (Link) (DOI: 10.1016/j.ejrad.2018.02.010)

22- **Ardakani AA**, Mohammadi A, Gharbali A, Rostami A. Diagnosis of Breast Tumors with Sonographic Texture Analysis Using Run-length Matrix. *International journal of Cancer Management*. 2018;11(2):e6120. (ISI-Pubmed-Scopus) (Link) (DOI: https://doi.org/10.5812/ijcm.6120)

23- **Ardakani AA**, Reiazi R, Mohammadi A. A Clinical Decision Support System Using Ultrasound Textures and Radiologic Features to Distinguish Metastasis From Tumor-Free Cervical Lymph

Nodes in Patients With Papillary Thyroid Carcinoma. Journal of ultrasound in medicine 2018;37:2527-35. (ISI-Pubmed-Scopus) (Link) (DOI: https://doi.org/10.1002/jum.14610)

24- **Ardakani AA**, Hekmat S, Abolghasemi J, Reiazi R. Scintigraphic texture analysis for assessment of renal allograft function. *Polish Journal of Radiology*. 2018;83:1-10. (Pubmed-Scopus) (Link) (DOI: https://doi.org/10.5114/pjr.2018.74956)

25- **Ardakani AA**, Rasekhi A, Mohammadi A, Motevalian E, Najafabad BK. Differentiation between metastatic and tumour-free cervical lymph nodes in patients with papillary thyroid carcinoma by grey-scale sonographic texture analysis. *Polish Journal of Radiology*. 2018;83:37-46. (Pubmed-Scopus) (Link) (DOI: https://doi.org/10.5114/pjr.2018.75017)

26- **Abbasian AA**, Rajaee J, Khoei S. Diagnosis of human prostate carcinoma cancer stem cells enriched from DU145 cell lines changes with microscopic texture analysis in radiation and hyperthermia treatment using run-length matrix. *International journal of radiation biology*. 2017;93(11):1248. (ISI-Pubmed-Scopus) (Link) (DOI: https://doi.org/10.1080/09553002.2017.1359429)

27- **Ardakani AA**, Nabavi SM, Farzan A, Najafabad BK. Quantitative MRI Texture Analysis of Enhancing and Non-enhancing T1-hypointense Lesions without Application of Contrast Agent in Multiple Sclerosis. *Česká a slovenská neurologie a neurochirurgie*. 2017;80(6):700-7. (ISI-Scopus), (Link) (DOI: https://doi.org/10.14735/amcsnn2017700)

28- **Ardakani AA**, Mohammadi A, Najafabad BK, Abolghasemi J. Assessment of Kidney Function After Allograft Transplantation by Texture Analysis: Iranian Journal of Kidney Diseases; 2017; 11(2): 157-164. (ISI-Pubmed-Scopus) (Link)

29- Rostami A, Moosavi SA, Changizi V, **Abbasian Ardakani A**. Radioprotective effects of selenium and vitamin-E against 6MV X-rays in human blood lymphocytes by micronucleus assay. *Medical journal of the Islamic Republic of Iran* 2016;30:367. (Pubmed-Scopus) (Link)

30- **Ardakani AA**, Gharbali A, Saniei Y, Mosarrezaii A, Nazarbaghi S. Application of Texture Analysis in Diagnosis of Multiple Sclerosis by Magnetic Resonance Imaging. *Global Journal of Health Science* 2015;7(6):p68. (Pubmed-Scopus) (Link) (DOI: https://doi.org/10.5539/gjhs.v7n6p68)

31- **Ardakani AA**, Gharbali A, Mohammadi A. Classification of Benign and Malignant Thyroid Nodules Using Wavelet Texture Analysis of Sonograms. *Journal of Ultrasound in Medicine* 2015;34(11):1983-1989. (ISI-Pubmed-Scopus) (Link) (DOI: https://doi.org/10.7863/ultra.14.09057)

32- **Ardakani AA**, Gharbali A, Mohammadi A. Application of Texture Analysis Method for Classification of Benign and Malignant Thyroid Nodules in Ultrasound Images. *Iranian journal of cancer* prevention 2015;8(2):116. (Pubmed-Scopus) (Link)

33- **Ardakani AA**, Gharbali A, Mohammadi A. Classification of Breast Tumors Using Sonographic Texture Analysis. *Journal of Ultrasound in Medicine* 2015;34(2):225-231. (ISI-Pubmed-Scopus) (Link) DOI: https://doi.org/10.7863/ultra.34.2.225)

Conference papers

1- **Ardakani AA**, Reiazi R, Mohammadi A. Differentiation Between Benign and Malignant Lymph Nodes Using a Quantitative Analysis of Ultrasound Images, December, *The second International Clinical Oncology Congress* 13-15, 2017, Tehran, Iran.

2- Gharbali A, **Ardakani AA**, Mohammadi A. Computerized Texture Pattern Analysis of the Breast Cancer by Ultrasound Imaging, *31th Iranian congress of radiology, 2015. Tehran, Iran.*

3- **Ardakani AA,** Gharbali A, Mohammadi A. Classification of Breast Tumors Using Computerize Texture Analysis of Ultrasound Image, *11th Iranian Conference of Medical Physics, 2014. Tehran, Iran*

4- Gharbali A, **Ardakani AA**, Mohammadi A. Classification of Breast Tumors Using Run-Length Matrix in Ultrasound Imaging, *7th Breast Cancer Congress, 2014. Tehran, Iran*

5- Gharbali A, **Ardakani AA**, Imaging and Automated Diagnosis of Breast Cancers, *Congress of Applied Research on Common Cancers of Iran 2014. Urmia, Iran*

6- **Ardakani AA,** Gharbali A, Mohammadi A. Automated Texture Analysis of Breast Cancer by Ultrasound Imaging, *30th Iranian congress of radiology, 2014. Tehran, Iran*

7- **Ardakani AA,** Gharbali A, Mohammadi A. Identification and Differentiation of Benign and Malignant Breast Tumors Using Texture Analysis of Ultrasound Image, *9th International Breast Cancer Congress 2013. Tehran, Iran*

Books

1- Shiran MB, **Ardakani AA**, Khalili Najafabad B. Principle and Advance Techniques of Ultrasound Waves in Diagnostic and Therapy, *Royan Pazhouh Press*; 2018, (Persian)

2- Mohammadzadeh A, **Ardakani AA**, Khalili Najafabad B. MRI at a Glance, *Asar Sobhan Press*; 2018 (Translate, Persian)

3- Mahdavi SR, **Ardakani AA**, Rostami A. The Principles of Shielding Against Ionizing and Non-Ionization Medical Radiation, *Royan Pazhouh Press*; 2017, (Persian)

4- **Ardakani AA**, Behrouzkia Z. Nuclear and Modern Physics Essentials, *Taymaz Press*; 2013, (Persian)

Research Interests

- Computed Tomography
- Magnetic Resonance Imaging
- Ultrasound
- Image Processing studies
- Computer Aided Diagnosis (CAD) System
- Deep Learning
- Machine Learning

Memberships

- Iranian Association of Medical Physicists
- Optics and Photonics Society of Iran