In the Name of God

CURRICULUM VITAE

Tahereh Mahmoudi

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ACADEMIC BACKGROUND

Ph.D., Biomedical Engineering (Discipline: Bioelectric)
Tehran University of Medical Sciences, Tehran, Iran
Thesis title: "A system for treatment Response Assessment in Pancreatic Ductal Adenocarcinoma (PDAC) using Deep Learning"
Supervisor: Dr. Hossein Arabalibeik and Dr. Alireza Ahmadian

Master of Science, Biomedical Engineering (Discipline: Bioelectric),
Isfahan University of Medical Sciences, Isfahan, Iran.
Thesis title: "Evaluation of asymmetry in right and left eyes of normal objects using features extracted from optical coherence tomography and fundus images."
Supervisor: Dr. Hossein Rabbani

Bachelor of Science, Electronic Engineering,
Shiraz University, Shiraz, Iran.

AREAS OF INTEREST

Medical Image Processing
 Ocular Image Processing (Optical Coherence Tomography (OCT), OCTA, Fundus)
 Abdominal CT and MRI Images
Image Processing
 Computer Vision
 Image enhancement methods
 Texture Analysis
Artificial Intelligence
 Machine Learning
 Deep learning
 Pattern Recognition

TEACHING EXPERIENCE

Artificial Intelligence in Medicine

Deep Learning

Medical Image Processing

Discrete-Time Signal Processing (DSP)

Physics and Anaesthesia

Bio Instrument

Neuro-Fuzzy Systems
Biomedical Signal Processing (BSP)
Introduction of Robotic Surgery

Mathematics and its Applications in IT

Mathematics and its Applications in Management

Engineering Mathematics

Electronic II

PROFESSIONAL AFFILIATIONS AND SERVICES

Ad-hoc Reviewer
    Journal of Biomedical Physics and Engineering (JBPE)
    Journal of Frontiers in Biomedical Technologies (FBT)
    Journal of Current Ophthalmology (JCO)
    Journal of Shiraz E-Medical
Editorial Board Member
    Section Editor in Journal of Biomedical Physics and Engineering (JBPE)
    Associate Editor in Shiraz E-Medical Journal

PRESENTED PROFESSIONAL LECTURES AND WORKSHOPS

Image Processing and Analysis in Ophthalmology, 10th Translational Ophthalmology Seminar on Robotics, Artificial Intelligence, and Image Processing, Farabi Eye Research Center, Tehran, Iran.

Registration and Fusion in Ophthalmology, 10th Translational Ophthalmology Seminar on Robotics, Artificial Intelligence, and Image Processing, Farabi Eye Research Center, Tehran, Iran.

Emerging Applications of Deep Learning in Screening Systems, 10th Annual Meeting of the Iranian Research Association for Vision and Ophthalmology (IRAVO), Farabi Eye Research Center, Tehran, Iran.

Artificial Intelligence in Medicine, Shiraz University of Medical Sciences, Shiraz, Iran.

Introduction of Deep Learning, The First International Congress on Advanced Health Technologies-Artificial Intelligence in Medicine, Kish Island, Iran.

Artificial Intelligence in Digestive and Liver Disease. M-Health Congress. Shiraz University of Medical Sciences.

PUBLICATIONS

T. Mahmoudi, A. R. Radmard, A. Salehnia, A. R. Ahmadian, A. H. Davarpanah, R. Kafieh, H. Arabalibeik. (2022). Segmentation of pancreatic ductal adenocarcinoma (PDAC) and surrounding vessels in CT images using deep convolutional neural network and Texture Descriptors. *Scientific Reports- Nature*

Mahmudi, T., Kafieh, R**.,** Rabbani, H., & Akhlagi, M. (2014, March). Comparison of macular OCTs in right and left eyes of normal people. In *Medical Imaging 2014: Biomedical Applications in Molecular, Structural, and Functional Imaging* (Vol. 9038, p. 90381W). *International Society for Optics and Photonics*.

Zarei M, **Mahmoudi T**, Riazi-Esfahani H, Mousavi B, Ebrahimiadib N, Yaseri M, Khalili Pour E & Arabalibeik H. (2021), Automated measurement of iris surface smoothness using anterior segment optical coherence tomography. *Scientific Reports-Nature.*

Mansooreh Montazerin, Zahra Sajjadifar, Elias Khalili Pour, Hamid Riazi-Esfahani, **Tahereh Mahmoudi**, Hossein Rabbani, Hossein Movahedian, Alireza Dehghani, Mohammadreza Akhlaghi, Rahele Kafieh. (2021) Livelayer: A Semi-Automatic Software Program for Segmentation of Layers and Diabetic Macular Edema in Optical Coherence Tomography Images. *Scientific Reports(Nature).*

Mahmudi, T., Kafieh, R**.,** Rabbani, H., Mehri, A., & Akhlagi, M. (2015, September). Asymmetry evaluation of fundus images in right and left eyes using radon transform and fractal analysis. In Image Processing (**ICIP Conference**), *2015 IEEE International Conference on (pp. 163-167).*

Mahmudi, T., Kafieh, R**.,** Rabbani, H., Mehri, A., & Akhlagi. (2020), Evaluation of Asymmetry in Right and Left Eyes of Normal Individuals Using Extracted Features from Optical Coherence Tomography and Fundus Images. *Journal of Medical Signal and Sensor,* 11(1): 12–23.

Pasyar P, **Mahmoudi T**, Kozahkanan SZM, Ahmadian A, Arabalibeik H, Soltanian N, Radmard AR. Classification of diffuse liver diseases in ultrasound images using deep convolutional neural networks. *Informatics in Medicine Unlocked(IMU).*

T. Mahmoudi, A. R. Radmard, A. Salehnia, A. R. Ahmadian, A. H. Davarpanah, R. Kafieh, H. Arabalibeik. (2021), Differentiation between pancreatic ductal adenocarcinoma and normal pancreatic tissue for treatment response assessment using multi-scale texture analysis of CT images. *Journal of Biomedical Physics and Engineering(JBPE).*

Mahmudi, T., Kafieh, R**.,** Rabbani, H., Dehnavi, A. M., Akhlaghi, M. R., Arbabian, K., & Ahmadi, M. Evaluation of Asymmetricity of Retinal Nerve Fiber Layer and Total Retina in Right and Left Eyes of Normal Subjects Using Extracted Features from Optical Coherence Tomography. *Journal of Isfahan Medical School***,** *31*(247), (2013).

Roya Arian, **Tahereh Mahmoudi**, Hamid Riazi-Esfahani, Rahele Kafieh, Hooshang Faghihi, Ahmad Mirshahi, Fariba Ghassemi, Alireza Khodabande, Elias Khalili Pour, Automatic Choroid

Vascularity Index Calculation in Optical Coherence Tomography Images low contrast sclerochoroidal junction Using Deep Learning. **Photonics (2023)**

Ali Torkashvand, Hamid Riazi-Esfahani, Fariba Ghassemi, Elias Khalil Pour, Babak Masoomian, Mohammad Zarei, Kaveh Fadakar, Mojtaba Arjmand, Freshteh Tayebi, Leila Ekradi , Hamid Abrishami Moghaddam , **Tahereh Mahmoudi** , Reihaneh Daneshmand , Hooshang Faghihi . Evaluation of Radiation Maculopathy after Treatment of Choroidal Melanoma with Ruthenium-106 using Optical Coherence Tomography Angiography. *BMC Ophthalmology*

Mohammad Atefi, Gholam Reza Karimaghaei, Ahmad Noori, **Tahereh Mahmoudi**, Farshid Gheisari, Mohammad Mehdi Movahedi, Investigation of Changes in Serum Alkaline Phosphatase, Calcium and Parathyroid Hormone at Three Levels of Iodine Therapy. *Galen Medical Journal (GMJ)*

Jamshid Saeidian, **Tahereh Mahmoudi,** Elias Khalili Pour, Hossein Azimi and Behzad Jafari. Automated assessment of the smoothness of retinal layers in optical coherence tomography images using a machine learning algorithm. *BMC Medical Imaging 23 (1), 1-16, 2023*

Yadollah Eslami, Zahra Mousavi Kouzahkanan; Zahra Farzinvash; Mona Safizadeh; Reza Zarei; Ghasem Fakhraie; Zakieh Vahedian; **Tahereh Mahmoudi**; Kaveh Fadakar; Alireza BeikmarzeheiA deep learning approach for classification of the primary angle-closure disease spectrum based on anterior segment optical coherence tomography. *Journal of Glaucoma (2023)*

Tahereh Mahmoudi, Alireza Mehdizadeh. Artificial Intelligence in Medicine. *Journal of Biomedicl Physics and Engineering (JBPE). 2022*

Tahereh Mahmoudi. An Artificial Intelligence-Based Algorithm for Segmentation and 3d Visualization Of Pancreatic Ductal Adenocarcinoma And Surrounding Vessels In CT Images. *Iranian Congress of Radiology, 2022*.

Mohammad Mehdi Movahedi, HamidReza Arianfar, Ahmad Noori, **Tahereh Mahmoudi**, Mohammad Atefi. Investigation of numerical values of cardiac perfusion scan parameters and walls motion in patients undergoing cardiac surgery. *Journal of Biomedicl Physics and Engineering (JBPE)*

T. Mahmoudi, Mohsen Rafeizadeh, Elias Khalili pour, Sector Area Index: a novel biomarker for blepharoptosis screening and grading. Under review

BOOK CHAPTER
Instrumentation Equipment (۲۰۱۴)

ADVISORY OF THE PROJECTS
An artificial intelligence-based algorithm for the diagnosis of dry eye corneal neuropathy using corneal confocal microscopy. *Farabi Eye Hospital, Tehran University of Medical Sciences*
Prediction of postoperative visual outcomes of pediatric cataract patients with machine learning. *Farabi Eye Hospital, Tehran University of Medical Sciences*
Design and development of software for analysis of gene expression and cell migration. *Shiraz University of Medical Sciences*
Classification of Liver Lesions in Multiphasic Liver CT-Scan Images Using Artificial Intelligence. *Shiraz University of Medical Sciences,* Master Student: Hossein Chehre

Automatic diseased lymph node detection in patients with lymphoma and staging of these patients using PET/CT images. Master Student: Mohammad Karim pour

Application of ensemble learning in estimating motor unit firing pattern statistics. *Shiraz University of Medical Sciences.* Master Student: Maryam Fallah

Study of providing a model for predicting Missing Values in the Glasgow Outcome Scale. Master student: Sajad Hoseini.

Early Detection of Retinal Diseases using Deep Learning on Ultra-wide-field Fundus Images. Student: Negar Khalaf

Designing a diagnostic aid system for the classification of angle-closure glaucoma in AS-OCT images using deep learning. Student: Sina Shahparast.

Providing an automatic system to extract indicators from common bile duct stones using fluoroscopic images in endoscopic retrograde cholangiopancreatography. Student: Mona Mohammad Asghari

SKILLS
Matlab, Python
Deep Learning essentials like PyTorch
SPSS
ImageJ