

## Contact

[www.linkedin.com/in/shima-mehrvar](https://www.linkedin.com/in/shima-mehrvar) (LinkedIn)

## Top Skills

Image Processing  
Medical Imaging  
Machine Learning

## Languages

English  
Persian

## Certifications

Deep Learning Specialization

## Honors-Awards

Featured Graduate Student in  
Graduate School Viewbook

Featured in UWM REPORT news:  
"Grad students' research aims to  
change our world"

Second place in IEEE Larry Huse  
student poster competition

Chancellor's Graduate Student  
Award

Second highest GPA in the class of  
2007

## Publications

Near-infrared spectroscopy muscle  
oximetry of patients with postural  
orthostatic tachycardia syndrome

Optical metabolic imaging of  
irradiated rat heart exposed to  
ischemia-reperfusion injury

Optical Metabolic Imaging for  
Assessment of Radiation-Induced  
Injury to Rat Kidney and Mitigation  
by Lisinopril

Time-lapse microscopy of oxidative  
stress demonstrates metabolic  
sensitivity of retinal pericytes under  
high glucose condition

# Shima Mehrvar

Sr. Scientist, Deep Learning at AbbVie  
Greater Chicago Area

## Summary

I am a PhD in Electrical Engineering with more than 10 years of academic and industrial research experience in computer vision, machine learning, (bio)medical imaging, optical instrumentation, signal and image processing.

## Experience

AbbVie

5 years 7 months

Sr. Scientist, Deep Learning

September 2021 - Present (4 years 3 months)

Postdoctoral Fellow in Deep Learning

May 2020 - September 2021 (1 year 5 months)

Illinois, United States

University of Wisconsin-Milwaukee

Research Assistant

January 2016 - May 2020 (4 years 5 months)

United States

- A novel instrument is designed, called fluorescence imager, as a diagnostic tool for diabetic wound healing in vivo. Hardware and software design, experimental protocol establishment, image processing algorithm design, and statistical and numerical analysis were performed in collaboration with College of Nursing, UWM.
- Various animal models of human injuries were investigated using optical cryo-imaging, and their metabolic redox state were quantified in collaboration with Medical College of Wisconsin. A new image processing approach is designed to segment regional heterogeneity of redox state in kidneys.
- A novel segmentation algorithm is designed to have 3D vascular network of organs. 3D image reconstruction, correction, and quantification algorithms are designed to analyze the effect of injuries.
- Using computer vision techniques, live cells and their mitochondrial compartment were segmented in time-lapse microscopy images, and

dynamics of cellular ROS (Reactive Oxygen Species) was quantified and modeled in ROS-mediated retinal injuries.

#### Pharmacology Branch, Islamic Azad University

Research Scientist

2013 - 2015 (2 years)

Tehran, Iran

- Providing in-silico analysis for predicting the effect of herbal extracts on bacteria.
- Designing a special constrained weight Neural Network using Genetic Algorithm.
- Finding an optimized training algorithm using Adaptive Differential Equation Algorithms.

#### Amirkabir University of Technology - Tehran Polytechnic

3 years

Teacher Assistant

2011 - 2014 (3 years)

Tehran, Iran

- Statistics and Random Systems, Artificial Neural Networks, Digital Signal Processing

Research Assistant

2011 - 2014 (3 years)

Tehran, Iran

- Machine learning algorithms: ANNs, SVM, PCA, K-means,
- Parallel processing to improve the performance of algorithms,
- Speech quality enhancement,
- Biological signal processing: ECG, EEG, Heart Beat Sounds,
- Optimizing structure of deep neural networks based on combining, constructing and pruning neurons for nonlinear dimension reduction of data, and
- Modeling human tendency via interactions between attractors in Neural Networks

---

## Education

University of Wisconsin-Milwaukee

Doctor of Philosophy - PhD, Electrical Engineering (Minor: Biomedical Engineering) · (2016 - 2020)

Amirkabir University of Technology - Tehran Polytechnic  
Master of Science - MS, Biomedical Engineering (Minor:  
Bioelectronics) · (2011 - 2013)

**Shahid Beheshti University**

Bachelor of Science - BS, Electrical Engineering · (2007 - 2011)