

## 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 Hause 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)