

Mahsa Lotfollahi Sohi

E-mail: mahsa.lotfollahi@gmail.com

Tel: +1 (210) 6497897

Education

- **Ph.D.** in Electrical Engineering
The University of Houston, TX, USA, Aug 2016~ ongoing
GPA: 4.0/4.0
 - **M.Sc.** in Biomedical Engineering
Tarbiat Modares University, Tehran, Iran, Sep 2011- Jan 2014
GPA: 17.22/20
Thesis: "Segmentation of Breast Ultrasound Images by Active Contours Using Neutrosophic Theory"
 - **B.Sc.** in Electrical Engineering
Shariaty University, Tehran, Iran, Sep 2007- Nov 2011
GPA: 17/20
Research Project: "Comparison of Existing Segmentation Methods on Cardiac SPECT Images"
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Research interest

- **Image Processing**
Image registration, Segmentation, Classification
Pattern recognition
Machine learning
 - **Signal Processing** Digital
signal processing Biological
signal processing
 - **Medical Imaging**
Ultrasound imaging
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Research Projects

- Study of Non-Local Means-Based Speckle Filtering on Breast Ultrasound Images
 - Study of Image Enhancement Using Fuzzy Logic on Breast Ultrasound Images
 - Application of Neutrosophic Theory as a Feature in Weighted Region Scalable Fitting Energy for Segmentation of Breast Ultrasound Images
 - Optimizing the Level Set Parameters with Using Differential Evolution
 - Study of Chen-Vese Algorithm on colored images with ITK Software
 - Pattern Recognition Analysis (Bayesian linear registration, Fisher's linear discriminate, Expectation-Maximization(EM) algorithm, and etc.) - class projects
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Work experiences

- **Star medical technology, Full Time, Feb.2015-Jul.2015, Bioelectronics engineer**

I was installing and calibrating medical devices such as spirometers, anesthesia machines, medical monitors, syringe and diffusion pumps, etc in hospitals and medical centers. I was training doctors and nurses to use new installed devices. I also did some minor electrical and mechanical repairs.

- **Arman Faraz Tajhiz, Fall Intern, 2015**

I studied structures and effects of medical devices like Radio Frequency (RF) generator and Percutaneous Laser Disc Decompression (PLDD) on herniated discs and the effected nerves to offer the most advanced and reliable minimally invasive procedure for disc treatment and nerve blocking to pain specialists. I also helped pain specialists to operate medical devises properly at operating room.

Selective Courses

- Digital image processing
- Pattern recognition
- Digital and biological signal processing
- Medical imaging system
- Biological modeling
- Biomedical instrument

Publication

- Mahsa Lotfollahi Sohi, Ali Mahlooji Far, “Combination of Fuzzy and Non-Local Means Filters for Breast Ultrasound Image Enhancement”, *Presented at 8th Iranian Conference on Machine Vision and Image Processing. Sep 2013*
- Mahsa Lotfollahi Sohi, Ali Mahlooji Far, Masoume Gity, “Segmentation of Breast Ultrasound Images by Active Contours Using Neutrosophic Theory”, *To be submitted to Journal of Medical Ultasounics- Available upon request*

Computer Skills

- Matlab, C/C++, Fortran, Visual Basic, Assembly (X85)
- PSpice, PLC, AVR
- Windows, Linux

References

- Dr. Ali Mahlooji Far (Email: mahlooji@modares.ac.ir)
Assistant Professor, Biomedical engineering, Tarbiat Modares University
- Dr. Masoumeh Gity (Email: mgity@tums.ac.ir)
Associate Professor, Radiology, Tehran University of Medical Science
- Dr. Ali Gooya (Email: a.gooya@sheffield.ac.uk, a.gooya@modares.ac.ir)
Assistant Professor, Biomedical Engineering, Tarbiat Modares University