

## CV–Mojtaba Seyedhosseini

Scientific Computing and Imaging Institute, University of Utah, 72 S Central Campus Dr., WEB 4750, SLC, UT 84112.

Webpage: [www.sci.utah.edu/~mseyed](http://www.sci.utah.edu/~mseyed), Email: [mseyed@sci.utah.edu](mailto:mseyed@sci.utah.edu) –Phone: (801) 739-1865

- EDUCATION**
- PhD Candidate**, GPA: 4.0/4.0 Sep 2009-present  
Scientific Computing and Imaging Institute, University of Utah  
Advisor: Dr. Tolga Tasdizen  
Major: Electrical Engineering
- M.S. (Master of Science)**, GPA: 17.81/20 Sep 2007-Sep 2009  
Sharif University of Technology, Tehran, Iran  
Advisor: Dr. Shahrokh Ghaemmaghami  
Major: Electrical Engineering/Communication systems
- B.Sc. (Bachelor of Science)**, GPA: 16.45/20 Sep 2003-Sep 2007  
University of Tehran, Tehran, Iran  
Advisor: Dr. Mahmoud Kamarei  
Major: Electrical Engineering
- PROFESSIONAL EXPERIENCE**
- **Research Assistant** Sep 2009-ongoing  
Scientific Computing and Imaging Institute (SCI), University of Utah, Salt Lake City.  
*Work description:* Doing research on image processing and pattern recognition algorithms to develop a robust image parsing framework.
  - **Teaching Assistant** Spring 2012  
“Engineering Probability and Statistics,” Dr. T. Tasdizen, University of Utah.
  - **Research Assistant** Jun 2008-Sep 2009  
Electronics Research Center (ERC), Sharif University of Technology, Tehran, Iran.  
*Work description:* Worked on the design of a new steganalysis algorithm based on the gray level runlength matrix.
  - **Teaching Assistant** Spring 2009  
“Digital Image Processing,” Dr. E. Fatemizadeh, Sharif University of Technology.
  - **Research Assistant** Summer 2007  
Basamadnegar Corporation, Tehran, Iran.  
*Work description:* Worked on simulation of the MAC Layer part of the IEEE 802.16 standard with Telelogic.
  - **Research Assistant** Summer 2006  
Iran Tele-Communication Research Center (ITRC), Tehran, Iran.  
*Work description:* Worked on the simulation of ITU-T G.168 standard with MATLAB.

**AREA OF  
INTEREST**

- **Machine Learning**
- **Image Analysis**
- **Pattern Recognition**
- **Biomedical Image Processing**

**PUBLICATIONS**

**B:** book chapters

**J:** journals

**C:** conference papers

- B1. T. Tasdizen, **M. Seyedhosseini**, T. Liu, C. Jones, E. Jurrus, “Image Segmentation for Connectomics Using Machine Learning,” In Kenji Suzuki, editor, *Computational Intelligence in Biomedical Imaging*, Springer, 2014.
- J1. **M. Seyedhosseini**, T. Tasdizen, “Multi-class Multi-scale Series Contextual Model for Image Segmentation,” *IEEE Transactions on Image Processing*, Vol 22, No 11, pages 4486–4496, 2013.
- C9. **M. Seyedhosseini**, M. Sajjadi, T. Tasdizen, “Image Segmentation with Cascaded Hierarchical Models and Logistic Disjunctive Normal Networks,” In *Proceedings of the International Conference on Computer Vision-ICCV 2013*, Sydney, Australia, December 2013.
- C8. T. Liu, **M. Seyedhosseini**, M. Ellisman, T. Tasdizen, “Watershed Merge Forest Classification for Electron Microscopy Image Stack Segmentation,” In *Proceedings of the International Conference on Image Processing-ICIP 2013*, Melbourne, Australia, September 2013.
- C7. **M. Seyedhosseini**, M. Ellisman, T. Tasdizen, “Segmentation of Mitochondria in Electron Microscopy Images using Algebraic Curves,” In *Proceedings of the International Symposium on Biomedical Imaging-ISBI 2013*, San Francisco, CA, USA, April 2013.
- C6. C. Jones, **M. Seyedhosseini**, M. Ellisman, T. Tasdizen, “Neuron Segmentation in Electron Microscopy Images using Partial Differential Equations,” In *Proceedings of the International Symposium on Biomedical Imaging-ISBI 2013*, San Francisco, CA, USA, April 2013.
- C5. T. Liu, E. Jurrus, **M. Seyedhosseini**, M. Ellisman, and T. Tasdizen, “Watershed Merge Tree Classification for Electron Microscopy Image Segmentation,” In *Proceedings of the International Conference on Pattern Recognition-ICPR 2012*, Tsukuba, Japan, November 2012.
- C4. **M. Seyedhosseini**, R. Kumar, E. Jurrus, R. Guily, M. Ellisman, H. Pfister, and T. Tasdizen, “Detection of Neuron Membranes in Electron Microscopy Images using Multi-scale Context and Radon-like Features,” In *Medical Image Computing and Computer-Assisted Intervention-MICCAI 2011, Lecture Notes in Computer Science (LNCS)*, Vol. 6891, pp. 670–677. 2011. Oral Presentation (acceptance rate < 10%)
- C3. **M. Seyedhosseini**, A. R. C. Paiva, and T. Tasdizen, “Fast AdaBoost training using weighted novelty selection,” In *Proceedings of the IEEE International Joint Conference on Neural Networks-IJCNN 2011*, San Jose, CA, USA, August 2011.

- C2. **M. Seyedhosseini**, A. R. C. Paiva, and T. Tasdizen, "Image Parsing with a Three-State Series Neural Network Classifier," In *Proceedings of the International Conference on Pattern Recognition-ICPR 2010*, Istanbul, Turkey, August 2010.
- C1. **M. Seyedhosseini** and S. Ghaemmaghami, "Detection of LSB Replacement and LSB Matching Steganography Using Gray Level Run Length Matrix," In *Proceedings of the International Conference on Intelligent Information Hiding and Multimedia Signal Processing-IIHMSP 2009*, Kyoto, Japan, September 2009.

#### SUBMITTED ARTICLES

- **M. Seyedhosseini**, S. Shushruth, T. Davis, J. Ichida, B. Greger, A. Angelucci, T. Tasdizen, "Identification of Natural Images from Local Field Potential Signals in Primary Visual Cortex," *PNAS*.
- T. Tasdizen, M. Sajjadi, **M. Seyedhosseini**, "Disjunctive Normal Networks," *Submitted to IEEE Transaction on PAMI*.
- T. Liu, C. Jones, **M. Seyedhosseini**, T. Tasdizen "A Modular Hierarchical Approach to 3D Electron Microscopy Image Segmentation," *Submitted to Journal of Neuroscience Methods*.
- **M. Seyedhosseini**, T. Tasdizen, "Disjunctive Normal Random Forests," *Under preparation*.

#### ABSTRACTS & TECHNICAL REPORTS

- Perez et al., "Morphological Plasticity of the Mouse Suprachiasmatic Nucleus Revealed by a Multiscale Imaging Approach," *Program No. 489.08. 2013 Neuroscience Meeting Planner*. San Diego, CA: Society for Neuroscience, 2013. Online.
- T. Tasdizen, T. Liu, **M. Seyedhosseini**, E. Jurrus, and M. Ellisman, "Neuron Segmentation in Electron Microscopy Images," *MASFOR 2012*.
- T. Liu, **M. Seyedhosseini**, E. Jurrus, and T. Tasdizen, "Neuron Segmentation in EM Images using Series of Classifiers and Watershed Tree," In *Proceedings of ISBI 2012 EM Segmentation Challenge*, Barcelona, Spain, May 2012.
- **M. Seyedhosseini**, S. Shushruth, T. Davis, B. Greger, A. Angelucci, T. Tasdizen, "Identification of Novel Natural Images from LFP Signals in V1 Predicted by a Gabor Wavelet Pyramid Model," *Program No. 483.05. 2011 Neuroscience Meeting Planner*. Washington, DC: Society for Neuroscience, 2011. Online.
- **M. Seyedhosseini**, A. R. C. Paiva, and T. Tasdizen, "Multi-scale Series Contextual Model for Image Parsing," *SCI Technical Report, No. UUSCI-2011-004, SCI Institute, University of Utah, 2011*.

#### PRESENTATIONS & POSTERS

- **Presentation**, "Multi-step Approach Toward Neuron Segmentation in EM Images," *ISBI 2013 workshop: 3D segmentation of neurites in EM images, San Francisco, April 7, 2013*.

- **Poster**, “Identification of Novel Natural Images from LFP Signals in V1 Predicted by a Gabor Wavelet Pyramid Model,” *Society for Neuroscience, Washington, DC, Nov 14, 2011.*
- **Presentation**, “Detection of Neuron Membranes in Electron Microscopy Images using Multi-scale Context and Radon-like Features,” *Imaging Seminar, SCI Institute, University of Utah, Sep 19, 2011.*
- **Presentation**, “Adaptive Image Steganography Algorithms,” *In Workshop on Information Hiding systems, Sharif University of Technology, Oct 2008.*

## **ACHIEVEMENTS**

- Ranked 24th among 16000 participants nationwide entrance exam for M.Sc. Degree, Summer 2007, Iran
- Faculty of engineering scholarship as an exceptional student in term, Fall 2004-2005, University of Tehran, Iran

## **Review Service**

- IEEE Signal Processing Letter
- ICPR 2012

## **GRADUATE COURSES**

- |                             |                                   |
|-----------------------------|-----------------------------------|
| ● Estimation Theory         | ● Advanced Image Processing       |
| ● Mathematics of Imaging    | ● Advanced Random Processes       |
| ● Adaptive Filters          | ● Machine Learning                |
| ● Programming for Engineers | ● Information Theory              |
| ● Digital Image Processing  | ● Random Processes                |
| ● Coding Theory             | ● Statistical Pattern Recognition |

## **COMPUTER SKILLS**

- **Programming:** C, C++, Matlab, Python
- **Systems:** Linux, Windows, OS X