

# Curriculum Vitae

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## Zahra Amini

Date of Birth: 22/03/1985  
School of Advanced Technologies in Medicine  
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## Education:

- **PhD in Biomedical Engineering- Bioelectrics, 2016**  
*School of Advanced Technologies in Medicine, Isfahan University of Medical Sciences, Isfahan, Iran.*  
*GPA=19.44/20, thesis grade =19.92/20 (ranked first)*  
PhD Thesis Title: “A new model based on multivariate Gaussianization of Optical Coherence Tomography (OCT)”  
Supervisor: Dr. Hossein Rabbani
- **M.Sc. in Electrical Engineering – Communications**  
*University of Yazd (UY), Yazd, Iran, 2008, GPA=18.06/20 (ranked first)*  
M.Sc. Thesis Title: “Development of Pattern Recognition Methods in P300 Detection.”  
Supervisor: Dr. Vahid Abutalebi  
Advisor: Dr. Mohammad Taghi Sadeghi
- **B.Sc. in Electrical Engineering -Communications**  
*Isfahan University of Technology (IUT), Isfahan, Iran, 2003 - 2007, GPA=16.58/20*  
B.Sc. Thesis Title: “Design and implementation of a Wide Band Signal Generator based on Frequency Synthesizers.”  
Supervisor: Dr. Saeid Sadri

## Research Interests:

- Biomedical Image Processing
- Statistical modeling
- Biological Systems Modeling
- Digital Signal Processing (DSP)
- Biological Signal Processing (BSP)
- Brain Computer Interface (BCI)
- Statistical Pattern Recognition (SPR)

## Research Experience:

- **Project:** classification of retinal arteries and veins in fundus images using sparse methods, *Supported by student research center of Isfahan University of Medical Sciences, started in Oct. 2015.*

## Publications:

### Journal Papers:

- **Z. Amini**, H. Rabbani, "Statistical Modeling of Retinal Optical Coherence Tomography," *IEEE Transactions on Medical Imaging*, vol. 35, no. 6, pp. 1544-1554, June 2016. [ISI]
- **Z. Amini**, H. Rabbani, "Classification of Medical Image Modeling Methods: A Review". *Current Medical Imaging Reviews*, 2015, vol. 12, No. 2, pp:130-148. [ISI]
- **Z. Amini**, H. Rabbani, Letter to the Editor: Correction to "The Normal-Laplace Distribution and its Relatives", *Communications in Statistics-Theory and Methods*, 2015; In press. [ISI]
- M Jamshidi, H Rabbani, **Z Amini**, R Kafieh, A Ommani, V Lakshminarayanan, " Automatic Detection of the Optic Disc of the Retina: A Fast Method", *Journal of medical signals and sensors* 6 (1), 57, 2016. [Pubmed]
- R. Kafieh, **Z. Amini**, H. Rabbani, "Interdisciplinary Researches in Iran IV: The Road Map of Ocular Image Analysis Research Group", *Journal of medical signals and sensors* 6 (2), 67, 2016. [Pubmed]
- **Z. Amini**, V. Abootalebi, M. T. Sadeghi, "Comparison of Performance of Different Feature Extraction Methods in Detection of P300", *Biocybernetics and Biomedical Engineering Journal*, Volume 33, Number 1, pp. 3–20, 2013. [ISI]
- **Z. Amini**, A. Mehridehnavi, "Comparison of Different Classifiers for Prediction of Breast Cancer Metastasis in Micro Array Analysis", *Journal of Isfahan Medical School* 32 (292), 2014. [Scopus]
- **Z. Amini**, H. Rabbani, "Seizure Diagnosis in Children based on the Electroencephalogram Modeling by Gaussian Process Model.", *Journal of Isfahan Medical School* 31 (243), 2013. [Scopus]
- **Z. Amini**, V. Abootalebi, M. T. Sadeghi, "Development of P300 Detection by a Combination of Time, Frequency and Spatial Feature Extraction Methods", *Iranian Journal of Biomedical Engineering*, vol.4 Issue4 , 2011. [ISC]
- **Z. Amini**, V. Abootalebi, M. T. Sadeghi, "Evaluation And Comparison Of Common Spatial Patterns (CSP) And Intelligent Segmentation In P300 Detection", *Intelligent Systems In Electrical Engineering Journal*, 2 (2), pp. 37-54, 2011. [ISC]

### Confrance Papers:

- **Z. Amini**, H Rabbani, Sh Haghjooye Javanmard, "Prediction of Breast Cancer Metastasis Based on Pattern Recognition Methods in Micro Array Analysis", *Systems, Control Engineering and Biological Sciences Symposium*, Dec. 2012, School of Electrical & Computer Eng., Tarbiat Modares University.
- **Z. Amini**, V. Abootalebi, M. T. Sadeghi , "A Comparative Study of Feature Extraction Methods in P300 Detection", *17th Iranian Conference of Biomedical Engineering (ICBME2010)*, 3-4 November 2010.
- E. Mohammadi, M. Niroomand, M. Rezaeian, **Z. Amini**, "Partial Discharge Localization and Classification Using Acoustic Emission Analysis in Power Transformer", *International Telecommunications Energy Conferences, INTELEC2009*, October 2009.

### Other Publications:

- H. Rabbani, R. Kafieh, **Z. Amini**, "Optical Coherence Tomography Image Analysis", *Book chapter*, Wiley. 2016, Accepted.

## **Scientific Association:**

### **Teaching Experience:**

- Teaching of “Engineering Mathematics”, *Isfahan University of Medical Sciences*, 2014.
- Teaching Assistant of “Advanced Biomedical System Modeling”, *Isfahan University of Medical Sciences*, 2015.
- Teaching Assistant of “Stochastic Processes”, *Isfahan University of Medical Sciences*, 2014.
- Teaching Assistant of “Advanced Biological Signal Processing”, *Isfahan University of Medical Sciences*, 2014.
- Teaching Assistant of “Biological Signal Processing”, *Isfahan University of Medical Sciences*, 2013.
- Teaching Assistant of “Biological Signal Processing”, *University of Isfahan*, 2010.
- Teaching Assistant of “Logic Circuits”, *Yazd University*, 2009.

### **Others:**

- Director of student research center in School of Advanced Technologies in Medicine, Isfahan University of Medical Sciences, 2015-2016.
- Cooperation with Medical student research center as a workshop lecturer, 2013-2015.
- Cooperation with Second Annual Research Day, School of Advanced Technologies in Medicine, Isfahan University of Medical Sciences, 2016.
- Cooperation with Iranian Student Conference on Electrical Engineering, ISCEE, Isfahan University of Technology, Isfahan, Iran, 2007.
- Cooperation with Iranian Conference on Electrical Engineering, ICEE, Isfahan University of Technology, Isfahan, Iran, 2010.
- Cooperation in publication Feedback Magazine, Isfahan University of Technology, Isfahan, Iran, 2010.
- Reviewer of Journal of Medical Signals and Sensors (JMSS), 2012-2016.
- Reviewer of Journals: IEEE Transaction of Signal Processing, IEEE Transaction on Biomedical Engineering, IET Signal Processing, Biomedical signal processing and control, Advanced biomedical research
- Reviewer of Iranian Student Conference on Electrical Engineering, ISCEE, Tabriz University, Iran, 2009.

## **Honors and Certificates:**

- The first rank among PhD students in Biomedical Engineering, Isfahan University of Medical Sciences, Iran.
- The first rank among M.Sc. students graduated in Electronic Engineering, Yazd University, Iran, 2011
- Distinguished with Shahid Motahari Educational Festival, 2014. (as a first rank student in School of Advanced Technologies in Medicine)

## **Softwares:**

- MatLab
- OrCAD
- SPSS
- Microsoft Office (Word, Power Point, Excel, ...)
- Code Composer (DSP Programmer)
- TEX