

# Curriculum Vitae

## Mehdi Rajabioun

### 1. Education

#### □ PhD in Biomedical Engineering

- Islamic Azad university. Science and Research Branch
- Dissertation Title: "*Spatio-Temporal connectivity extraction between extracted sources from EEG signals with dual kalman filter and its using in Autism*"

#### □ M. Sc. in Biomedical Engineering

- University of Tehran, Tehran, Iran, Sep. 2006.
- GPA of 15.69 out of 20.
- Dissertation Title: "*Studying and Detection of Brain Active Regions using Magnetoencephalography (MEG) Signals.*"

#### □ B. Sc. in Electronic Engineering

- Sahand University of Technology, Tabriz, Iran, June. 2003.
- GPA of 15.42 out of 20.

#### *Honors and Awards*

- Ranked 300th among about 350,000 participants in Iran university entrance exam for B.Sc., 1998.
- Ranked 91th among about 70,000 participants of Electrical Engineers in Iran university entrance exam for M.Sc., 2003.
- Ranked first in Sahand university of Technology in Electronic section of Iran University Entrance Exam for M.Sc., 2003.
- Ranked first in Ferdosi high school of Tabriz in mathematics and physics section of Iran University Entrance Exam for B.Sc., 1998.

### 2. Computer knowledge

- Matlab and Simulink and GUI
- Meg-Tools (<http://megimaging.com/>)
- C++ Builder programming
- Pspice, Orcad, Protel
- 80C51 family, assembly and C51 programming
- PLC systems

### 3. Teaching experience

#### □ Azad university of Mamaghan (2007-present)

**-Teaching Courses:** Discrete Time signal processing(DSP), Electronic, TV systems, Electrical circuits, MATLAB , Industrial control, PLC systems, Logical circuits and computer architecture.

#### □ Azad university of Tabriz (2006-present)

**-Teaching Courses:** Biomedical Fundamentals, Algorithm structures, Logical circuits and computer architecture.

#### □ Sahand university of Technology of Tabriz (2006-2007)

**-Teaching Courses:** MATLAB, Radiology device, Bioinstrumentation, Electromechanical and motor systems, Electricity Basis

- Seraj university of Tabriz (2006)  
-**Teaching Courses:** Electronic, Electromagnetism physics, Electrical circuits, MATLAB , Logical circuits.
- Industrial Institute of Tabriz (2003-2006)  
-**Teaching Courses:** Electronic, Electrical circuits, Logical circuits.

## 4. Research experience

- **Bias field estimation and Adaptive segmentation of MRI Images using Modified c-Mean Clustering, B.Sc. Thesis, 2002-2003**  
- Introducing a software in GUI of MATLAB for entering unbiased MRI images and adding noise to the data and filtering the generated data
- **Experience in MEG/EEG, 2003- Present.**  
- Pre-processing, post-processing, and solving the inverse problem for MEG and EEG signals.  
- Combinational methods were introduced for solving the inverse problem of MEG [C-1] and improved their efficiency [C-2; C-4].  
- Using Neural Networks for solving the inverse problem of MEG
- **Genetic Algorithms.**  
- Studying genetic algorithms basis and using it for image analysis in Sahand university of Technology
- **Morphological Filtering.**  
- Studying morphological filtering basis and using it for mage processing in Sahand university of Technology
- **Robotics.**  
- Designing and manufacturing of robots for the Iranian intelligence mice competition
- **Neural Network and Fuzzy system and signal processing**

## 5. Research Interests

MEG/EEG Data Analysis; Inverse Problem; Biomedical Signal Processing; Biomedical Image Processing; Fuzzy Systems; Neural Networks, Genetic Algorithms ; Morphological filtering; Biological Systems Modeling;

## 6. Publications and Grant Proposal

- **Journal paper**  
[J-1] **Mehdi Rajabioun**, Abbas Babajani-Feremi, and Hamid Soltanian-Zadeh "Combinational Method for MEG inverse solution," is preparing to submit to the **Brain Topography**.
- **Peer Reviewed Conference Papers**  
[C-1] **M. Rajabioun**, A. Babajani, and H. SoltanianZadeh, "A Novel Method for Solving the Inverse Problem of MEG," Accepted and Published in *11th annual conference of computer society of Iran (CSICC2006)*, 24-26 January,2006.  
[C-2] **M. Rajabioun**, A. Babajani, and H. SoltanianZadeh, "A New Weighted Method for Reducing Noise Effect in MEG Inverse Solution," Accepted and Published in *14th Iranian Conference on Electrical Engineering (ICEE2006)*, 16-18 May, 2006.  
[C-3] **M. Rajabioun**, A. Babajani, and H. SoltanianZadeh, "Brain activation detection with MEG signals using combination method" Accepted in *12th EFNS Congress, Madrid, Spain*, 23-26 Aug, 2008.

[C-4] Medical Imaging 2009: Biomedical Applications in Molecular, Structural, and Functional Imaging, edited by Xiaoping P. Hu, Anne V. Clough, Proc. of SPIE Vol. 7262, 726220 · © 2009 SPIE · CCC code: 1605-7422/09/\$18 · doi: 10.1117/12.813876

[C-5]2010 International Conference on Computer Research and Development (ICCRD 2010)  
Kuala Lumpur, May 7 - 10, 2010

□ **Grant Proposal [G-1]**, submitted in 2007

- **Title:** Combinational Method for MEG inverse solution

- **Goal:** Propose a new combination method for MEG activation detection analysis

## 8. Address

**Email:** mrajabioun@gmail.com