

# Curriculum Vitae



**Saeed Karimimehr**

Status: Single  
Gender: Male  
Date of Birth: 1988.12.9  
Nationality: Iranian

## Contact information:

Department of Biomedical Engineering  
University of Isfahan  
Isfahan, Iran

Mobile: +98-9363099810  
E-Mail: [saeed.karimimehr@gmail.com](mailto:saeed.karimimehr@gmail.com)  
[s.karimimehr@eng.ui.ac.ir](mailto:s.karimimehr@eng.ui.ac.ir)

[Google Scholar](#)

[LinkedIn](#)

[ResearchGate](#)

<http://s-karimimehr.webnode.com/>

## Research Interests:

- Computational Neuroscience
- Signal Processing
- Machine Learning
- Neural Decoding and Encoding

## Educations:

- **Bachelor of Science, Electrical Engineering (Electronics)** (finished: Sep-2013)  
Isfahan University of Technology, Isfahan, Iran
  - **Passed Courses:**
    - *Signals and Systems*
    - *Digital Signal Processing (grad. course)*
    - *Advanced Topics in Digital Signal Processing (grad. course)*
    - *Information Theory (grad. course)*

*\*Audit courses: Image Processing, Advanced Image Processing, Game Theory*

- **Master of Science, Biomedical Engineering** (finished: Oct-2015)  
University of Isfahan, Isfahan, Iran
  - **Passed Courses:**
    - *Principles of Biomedical Signal Processing*
    - *Advanced Topics in Biomedical Signal Processing*
    - *Statistical Pattern Recognition*
    - *Biological Systems Modeling*
    - *Medical Imaging Systems*
    - *Control of Neuromuscular Systems*
    - *Bioinstrumentation*
    - *Digital Image Processing*
    - *Human Physiology*

## Research Experiences and Projects:

- **Watermarking and Data Hiding in Image and Audio Signals**  
Collaborators: Prof. Shadrokh Samavi, Prof. Mojtaba Mahdavi, Hoda Rezaei  
Publication:  
1- “Robust Audio Watermarking Based on HWD and SVD”, ICEE, May 2012, Tehran, Iran.
- **Compressed Sensing and Sparse Signal Processing**  
Collaborators: Prof. Shadrokh Samavi, Ali Mir Saeidi
- **BSc Thesis: The Application of Bayesian Inference and Computational Neuroscience in Face Recognition**  
Supervisor: Prof. Saeed Sadri  
Publications:  
1- Oral Presentation, First Iranian Congress on Basic and Clinical Neuroscience, November 2012, Tehran, Iran.  
2- “A Novel Face Recognition System Inspired by Computational Neuroscience”, EuroCon, July 2013, Zagreb, Croatia.
- **A Study on the Role of Attention in Cortex Inspired Models of Visual System**  
Collaborator: Prof. Mohammad Reza Yazdchi  
Publication:  
1- “How Computational neuroscience could Help Improving Face Recognition Systems?”  
ICCKE, October 2014, Mashhad, Iran.
- **A Linear and Non-Linear Approach for Kinematics Extraction from Electromyographic Recordings**  
Collaborator: Prof. Mehran Emadi Andani, Parviz Ghaderi  
Publications:  
1- “Hand Kinematics Estimation Using Non-Invasive Surface Sensors: A Linear System Identification Approach”, ICBME, November 2015, Tehran, Iran.  
2- “Hand Kinematics Estimation to Control Prosthetics Devices: A non-Linear Approach for Simultaneous and Proportional Control of 15 DoFs”, ICBME, November 2015, Tehran, Iran.
- **MSc Thesis: Automatic Neural Decoding of Brain and Muscle Using Pattern Recognition Techniques**  
Supervisor: Prof. Hamid Reza Marateb  
Publications:  
1- Oral Presentation, XX ISEK conference, July 2014, Rome, Italy.  
2- Oral Presentation, 4<sup>th</sup> Basic and Clinical Neuroscience Congress, December 2015, Tehran, Iran.  
3- “A Real-time Method for Decoding the Neural Drive to Muscles”, submitted.  
4- “A Density Based Spike Sorting Algorithm for Decoding the Behavior of a Large Number of Neurons”, submitted.  
5- “A Discriminative Feature Space for Reducing the Dimensionality of Spikes in Spike Sorting”, in preparation.  
6- “Feature extraction and Selection in Intramuscular Electromyographic signal Decomposition”, in preparation.

## Honors and Awards:

- Ranked 0.1% among 400,000 applicants in the Iranian Nationwide University Entrance Exam
- Best paper award in the first student paper contest, department of electrical and computer engineering, Isfahan University of Technology, Isfahan, Iran
- Best BSc thesis award in the department of electrical and computer engineering, Isfahan University of Technology, Isfahan, Iran
- Travel grant to EuroCon 2013 (Zagreb, Croatia) as one of the finalists of IEEE Region8 Student Paper Contest
- Second prize in IEEE Region8 SPC
- Among the best papers of ICCKE2014, Mashhad, Iran
- Financial grant from “The Cognitive Science and Technology Council of Iran” for Master thesis.

## Publications:

### Journals:

[J1] **Saeed Karimimehr**, Hamid Reza Marateb, Silvia Muceli, Dario Farina, "A Real-Time Method for Decoding the Neural Drive to Muscles", submitted to the International Journal of Neural Systems (IF: 6.085).

[J2] **Saeed Karimimehr**, Hamid Reza Marateb, Miquel Angel Mañanas, Dario Farina, "A Density based Spike Sorting Algorithm for Decoding the Behavior of a Large Number of Neurons", submitted to the Journal of Neuroscience Methods.

[J3] **Saeed Karimimehr**, Hamid Reza Marateb, “A Discriminative Feature Space for Reducing the Dimensionality of Spikes in Spike Sorting”, in preparation.

[J4] **Saeed Karimimehr**, Hamid Reza Marateb, “Feature Extraction and Selection in Intramuscular Electromyographic Signal Decomposition”, in preparation.

### Conferences:

[C1] **Saeed Karimimehr**, Shadrokh Samavi, Hoda Rezaei Kaviani, Mojtaba Mahdavi, "Robust Audio Watermarking based on HWD and SVD," *Electrical Engineering (ICEE), 2012 20th Iranian Conference on*, vol., no., pp.1363, 1367, 15-17 May 2012.

[C2] **Saeed Karimimehr**, "A novel face recognition system inspired by computational neuroscience," *EUROCON, 2013 IEEE*, vol., no., pp.2129, 2133, 1-4 July 2013.

[C3] **Saeed Karimimehr**, Mohammad Reza Yazdchi, "How computational neuroscience could help improving face recognition systems?" *Computer and Knowledge Engineering (ICCKE), 2014 4th International eConference on*, vol., no., pp.410,413, 29-30 Oct. 2014.

[C4] **Saeed Karimimehr**, Parviz Ghaderi, Mehran Emadi Andani, "Hand Kinematics Estimation

Using Non-Invasive Surface Sensors: A Linear System Identification Approach," *ICBME, 2015 22<sup>nd</sup> Iranian Conference on*, 25-27 Nov 2015.

[C5] Parviz Ghaderi, **Saeed Karimimehr**, Mehran Emadi Andani, Hamid Reza Marateb, "Hand Kinematics Estimation to Control Prosthetic devices: A Nonlinear Approach for Simultaneous and Proportional Estimation of 15 DoFs," *ICBME, 2015 22<sup>nd</sup> Iranian Conference on*, 25-27 Nov 2015.

#### **Abstracts:**

[A1] **Saeed Karimimehr**, Saeed Sadri, "A novel method for face recognition inspired by computational neuroscience", *1<sup>st</sup> basic and clinical neuroscience congress*, Tehran, Iran, Nov, 2012.

[A2] **Saeed Karimimehr**, Hamid Reza Marateb, Silvia Muceli, Dario Farina, "Online neural decoding from the intramuscular EMG signal", *The XX ISEK Conference*, Rome, Italy, July, 2014.

[A3] **Saeed Karimimehr**, Hamid Reza Marateb, Zahra Navardi, "A Density Based Spike Sorting Algorithm for Decoding Large Number of Neurons", *4<sup>th</sup> basic and clinical neuroscience congress*, Tehran, Iran, Dec 2015.

#### **Technical Reports:**

[T1] **Saeed Karimimehr**, "ECG Signal Enhancement: A Comparative Study Among Empirical Mode Decomposition Family".

#### **Participated Workshops:**

- Three days workshop on FPGA held by Iranian robotics society.
- One day workshop on "The application of intelligent systems in gait analysis", Isfahan University of Medical Science.
- One day Workshop on "The applications of electrical engineering in cognitive neuroscience", held by the Institute for Physics and Mathematics (IPM).
- One day workshop on "EEG signal processing", Tehran University of Medical Science.
- Six days workshop on "introduction to statistical models of neural spike train data", by Hideaki Shimazaki, RIKEN brain science institute Japan, held by the Institute for Physics and Mathematics (IPM).
- fMRI journal club titled "Functional parcellation of human visual cortex" by Dr.Reza Rajimehr, held by Institute for Physics and Mathematics (IPM)
- Two days symposium on brain dynamics by Prof. Gyogy Buzsaki held by Ferdowsi University of Mashhad, Mashhad, Iran.

#### **Computer Skills:**

- Expert in **MATLAB** Programing

- Good familiarity in: SPSS, Endnote, EMGlab, EEGlab, Libsvm, Rapidminer, Verilog, C/C++, Weka, R, Python ...

**Languages:**

- Farsi : Native
- English: Fluent

**References:**

Hamid Reza Marateb

Assistant Professor of Biomedical Engineering, University of Isfahan, Isfahan, Iran  
Researcher in the biomedical engineering research center, Universitat Politècnica de Catalunya.  
BarcelonaTech (UPC), Barcelona, Spain

[h.marateb@eng.ui.ac.ir](mailto:h.marateb@eng.ui.ac.ir)

Mehran Emadi Andani

Assistant Professor of Biomedical Engineering, University of Isfahan, Isfahan, Iran  
Associate Researcher, Faculty of Motor Science, University of Verona, Verona, Italy

[mehran.emadiandani@univr.it](mailto:mehran.emadiandani@univr.it)

Shadrokh Samavi

Professor of Electrical and Computer Engineering, Isfahan University of Technology, Isfahan, Iran

Adjunct Professor of engineering, University of McMaster, Canada

[samavi96@cc.iut.ac.ir](mailto:samavi96@cc.iut.ac.ir)

Mohammad Reza Yazdchi

Assistant Professor of Biomedical Engineering, University of Isfahan, Isfahan, Iran

[yazdchi@eng.ui.ac.ir](mailto:yazdchi@eng.ui.ac.ir)