Mina Jamshidi Idaji

Curriculum Vitae

Research Interests

Signal/Image Processing (with biomedical and neuroscience applications), Network Science, Machine Learning, Brain-Computer Interface, and Applied Mathematics in signal processing (Statistical Methods, Optimization Theory, Multilinear Algebra, and Graph Theory)

Research and Academic Experiences

12/2017-present **Doctoral Researcher**, MPI for Human Cognitive and Brain Sciences

02/2017–06/2017 **Research Assistant**, Biomedical Signal and Image Processing Laboratory (BiSIPL), under Supervision of Dr. S. Hajipour and Prof. M.B. Shamsollahi

→ Research area: Source localization and denoising of epileptic EEG data with a graphic user interface (GUI).

09/2014–08/2016 **Research Assistant**, Biomedical Signal and Image Processing Laboratory (BiSIPL), EE Dept., Sharif University of Technology, Tehran, Iran

→ Research area: *Higher order* and *vector-based* Event Related Potential (ERP) analysis, higher order feature reduction techniques; unsupervised P300 speller

Summer 2013 **Research Intern**, Medical Image and Signal Processing Research Center (MISP), Isfahan University of Medical Sciences, Isfahan, Iran

→ Research area: Optic Disc segmentation in retinal images.

Ad-hoc Reviewer IEEE Transactions on Biomedical Engineering (TBME), IEEE Transactions on Neural Systems and Rehabilitation Engineering (TNSRE)

Education

12/2017–present **PhD**, Max Planck Institute for Human Cognitive and Brain Science, Leipzig, Germany, Dr. Vadim Nikulin, Prof. Dr. Arno Villringer

Machine Learning Group, Technical University Berlin, Berlin, Germany, Prof. Dr. Klaus-Robert Müller

PhD Thesis Multivariate Methods for Quantification of Nonlinear Interactions in Human Brain

09/2014–08/2016 **M.Sc., Biomedical Engineering (Bioelectric)**, EE Dept., Sharif University of Technology (SUT), Tehran, Iran

M.Sc. GPA: **18.65/20 (German scoring: 1,5)** (29 credits), University GPA:16.2/20, Dept. GPA: 16.35/20

Master Thesis Detection of Event Related Potential Using Tensor Decomposition

M.Sc. Supervisor Prof. Dr. M.B. Shamsollahi

09/2009–09/2014 **Dual B.Sc., Electrical Engineering and Pure Mathmetics)**, Isfahan University of Technology (IUT), Isfahan, Iran

Bachelor Thesis A Survey of Graph-based Image Segmentation Methods

Mina Jamshidi Idaji, Max Planck Institute for Human Cognitive and Brain Science, Stephan Str. 1A, Neurology Department, Leipzig, Germany
✉ jamshidi@cbs.mpg.de

B.Sc. Supervisor Dr. Saeid Sadri and Dr. Raheleh Kafieh

B.Sc. GPA: **18.55/20 (German scoring: 1,4)** (185 credits), University GPA:14.54/20, ECE Dept. GPA: 15.26/20, EE students GPA:16.32/20

09/2005–08/2009 **High school**, Farzanegan-e-Amin Highschool, NODET (National Organization for Development of Exceptional Talents), Isfahan, Iran

Selected Publications

- **M. Jamshidi Idaji**, K.R. Müller, G. Nolte, B. Maess, A. Villringer, V.V. Nikulin, "Nonlinear Interaction Decomposition (NID): A Method for Separation of Cross-frequency Coupled Sources in Human Brain," NeuroImage , 2020. DOI: j.neuroimage.2020.116599
- **M. Jamshidi Idaji**, M.B. Shamsollahi, S. Hajipour Sardoui, "Higher Order Spectral Regression Discriminant Analysis (HOSRDA): A Tensor Feature Reduction Method for ERP Detection," Pattern Recognition 70 (2017) 152-162. DOI: 10.1016/j.patcog.2017.05.004

Technical Skills

Programming Python, MATLAB, C/C++, JAVA (familiar)

Type Setting LaTeX , Microsoft Office

O.S. OSX, Linux, Windows

Teaching Experience

July 2020 **Tutor**, Max Planck School of Cognition, MEEG preprocessing with Python (C)

June 2020 **Tutor**, Neuromatch Academy, Computational Neuroscience

2015–2016 **Teaching Assistant** at Sharif University of Technology, EE Dept.

- Tensor Decomposition and Matrix Factorization with Application to Signal Processing - Instructed by: Dr. S. Hajipour, Fall2016 (A,D)

- Digital Signal Processing (with MATLAB)- Instructed by: Prof. Dr. M.B. Shamsollahi, Fall2015 & Fall2016 (C)

2012–2014 **Teaching Assistant** at Isfahan University of Technology, ECE Dept.

- Wireless Communication - Instructed by: Dr. M.J. Omidi, Fall2013 & Spr2014 (B,D)

- Communication Circuits - Instructed by: Prof. Dr. S. Sadri, Fall 2013 (B)

- Signals and Systems - Instructed by: Dr. B. Nazari, Fall 2012 (B,D)

→ Responsibilities: (A) Designing problems - (B) Holding problem solving sessions/Office hours - (C) Hands-on sessions - (D) Grading homeworks and projects

Languages

English Full Proficiency

German B2/C1

Persian Native

Membership

12/2020- present 0-year student at Max Planck School of Cognition

12/2017–present International Max Planck Research School NeuoroCom (IMPRS NeuoroCom)

Mina Jamshidi Idaji, Max Planck Institute for Human Cognitive and Brain Science, Stephan Str. 1A, Neurology Department, Leipzig, Germany
✉ jamshidi@cbs.mpg.de

2020-Present IEEE Member

2010-2020 IEEE Student Member

Honors and Awards

03/2017 Receiving IMPRS NeuroCom funding for persueing the PhD

→ Every year only 3-4 candidates can receive this funding through the application and interview procedure.

09/2015-09/2016 Mowafaghian Research Fellowship for Graduate Students, Djavad Mowafaghian Research Center of Intelligent Neuro-Rehabilitation Technologies, Sharif University of Technology (SUT), Tehran, Iran

→ This 1-year scholarship is yearly awarded to only five distinguished graduate students at SUT.

08/2014 Honorary admission to master's program at Sharif University of Technology (SUT) as an Exceptional Talent (without need to take part in nationwide entrance exam)

→ The honorary admission of graduate level programs is awarded each year to a very limited number of students with distinguished academic performance.

Class of 2013 Ranked 6^{th} among 100 EE undergraduate students and 3^{rd} in communication group, Isfahan University of Technology, Isfahan, Iran

08/2012 DAAD Scholarship for one month German summer course in Germany, Berlin

Volunteer Activity

2009-2017 Volunteer Activist, Kherad-Sepahan NGO (Projects of reading promoting and providing high-quality education to pupils in poor regions of Iran

Referees

Dr. Vadim Nikulin (nikulin@cbs.og.de)

Prof. Dr. Arno Villringer (villringer@cbs.og.de)

Further referees can be provided upon request.

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