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

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page 1 of 3

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

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
- **M. Jamshidi Idaji**, H. Rabbani, Z. Amini, R. Kafieh, A. Ommani, V. Lakshminarayanan, "Automatic Detection of the Optic Disc of the Retina: A Fast Method," J Med Sign Sence 2016; 6:57-63

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

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page 2 of 3

Membership

12/2020- present	0-year student at Max Planck School of Cognition
12/2017–present	International Max Planck Research School NeuoroCom (IMPRS NeuoroCom)
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 6th among 100 EE undergraduate students and 3rd 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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page 3 of 3