

AREF EINIZADE

Image, Data, Signal (IDS), Télécom Paris, Institut Polytechnique de Paris, France

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RESEARCH and EDUCATION POSITIONS

Postdoctoral Researcher

Nov 2023 - Now

Télécom Paris, Institut Polytechnique de Paris, France

Thesis: *Learning Multi-domain Graphs from Data via Graph Machine Learning.*

Supervisors: [Jhony H. Giraldo](#), and [Fragkiskos D. Malliaros](#)

Doctor of Philosophy in Electrical Engineering (Avg. Grade = 18.57/20)

Oct 2018 - Feb 2023

Sharif University of Technology (SUT), Tehran, Iran

Thesis: *Subspace Identification and Graph Learning of Graph Signals: Application in Brain Signal Processing.*

Master of Science in Electrical Engineering (Hons) (Avg. Grade = 18.41/20)

Oct 2016 - Sep 2018

Sharif University of Technology (SUT), Tehran, Iran

Thesis: *Iterative Pseudo Sparse Partial Least Square and its Higher-Order variant: Application to inference from high-dimensional biosignals.*

Bachelor of Science in Electrical Engineering-Digital Systems













Oct 2011 - Sep 2015

Shahid Beheshti University (SBU), Tehran, Iran

RESEARCH INTERESTS

Learning Graphs from Data, Graph Signal Processing, Graph Neural Network, Machine Learning, Applications.

PUBLICATIONS

- **Einizade, A.**, Giraldo, J. H., & Malliaros, F. D. (2024). “Continuous Product Graph Neural Networks”, arXiv preprint. *Under Review in NeurIPS.* 
- **Einizade, A.**, Giraldo, J. H., & Malliaros, F. D. (2024). “Spatiotemporal Forecasting Meets Efficiency: Causal Graph Process Neural Networks”, arXiv preprint. *Under Review in NeurIPS.* 
- **Einizade, A.**, Giraldo, J. H., Malliaros, F. D., & Sardouie, S. H. (2024). “Estimation of a causal directed acyclic graph process using non-gaussianity”, Digital Signal Processing. 
- Giraldo, J. H., **Einizade, A.**, Todorovic, A., Castro-Correa, J. A., Badiy, M., Bouwmans, T., & Malliaros, F. D. (2024). “Higher-Order GNNs Meet Efficiency: Sparse Sobolev Graph Neural Networks”. *Under Review in IEEE Transactions on Signal and Information Processing over Networks.*
- **Einizade, A.**, Sardouie, S. H. (2023). “Learning Product Graphs from Spectral Templates”, IEEE Transactions on Signal and Information Processing over Networks.  
- **Einizade, A.**, Nasiri, S., Sardouie, S. H., & Clifford, G. D. (2023). “ProductGraphSleepNet: Sleep staging using product spatio-temporal graph learning with attentive temporal aggregation”, Neural Networks.  
- **Einizade, A.**, Sardouie, S. H. (2023). “Iterative Pseudo-Sparse Partial Least Square and its Higher-Order variant: Application to inference from high-dimensional biosignals”, IEEE Transactions on Cognitive and Developmental Systems. 
- **Einizade, A.**, Sardouie, S. H. (2023). “Joint Graph Learning and Blind Separation of Smooth Graph Signals Using Minimization of Mutual Information and Laplacian Quadratic Forms”, IEEE Transactions on Signal and Information Processing over Networks, 9, 35-47.  
- **Einizade, A.**, Nasiri, S., Mozafari, M., Sardouie, S. H., Clifford, G. D. (2023). “Explainable automated seizure detection using attentive deep multi-view networks”, Biomedical Signal Processing and Control.  

- Alizade, M. H., **Einizade, A.**, Giraldo J. (2023). Kernel-based Joint Multiple Graph Learning and Clustering of Graph Signals. arXiv preprint. *Under Review in IEEE Signal Processing Letters*. 
- **Einizade, A.**, Sardouie, S. H. (2022). “Robust blind separation of smooth graph signals using minimization of graph regularized mutual information”, Digital Signal Processing, 132, 103792.  
- **Einizade, A.**, Mozafari, M., Jalilpour, S., Bagheri, S., Sardouie, S. H. (2022). “Neural decoding of imagined speech from EEG signals using the fusion of graph signal processing and graph learning techniques”, Neuroscience Informatics, 2(3), 100091. 
- **Einizade, A.**, Sardouie, S. H. (2022). “A unified approach for simultaneous graph learning and blind separation of graph signal sources”, IEEE Transactions on Signal and Information Processing over Networks, 8, 543-555. 
- **Einizade, A.**, Sardouie, S. H., Shamsollahi, M. B. (2021). “Simultaneous graph learning and blind separation of graph signal sources”, IEEE Signal Processing Letters, 28, 1495-1499. 
- Mijani, A. M., **Einizade, A.**, Shamsollahi, M. B., Beyglou, B. T. (2020). “Cross-subject and cross-paradigm learning using convolutional neural network for P300 event-related potential detection”, J Neurol Neurosci, 11(5), 329. 
- **Einizade, A.**, Mozafari, M., Sardouie, S. H., Nasiri, S., Clifford, G. (2020). “A deep learning-based method for automatic detection of epileptic seizure in a dataset with both generalized and focal seizure types”, In 2020 IEEE Signal Processing in Medicine and Biology Symposium (SPMB). IEEE.  
- **Einizade, A.**, Mozafari, M., Rezaei-Dastjerdehei, M., Aghdaei, E., Mijani, A. M., Sardouie, S. H. (2020). “Detecting ADHD children based on EEG signals using Graph Signal Processing techniques”, In 2020 27th National and 5th International Iranian Conference on Biomedical Engineering (ICBME). IEEE. 
- **Einizade, A.**, Sardouie, S. H. (2020). “Sparsification of the PLS Regression Algorithm using L2-Norm of Weighted Coefficients: Application in Emotion Recognition”, Iranian Journal of Biomedical Engineering. 

Research/Job Experience

- Teacher Assistant (TA) in the Source separation and Non-negative Matrix Factorization labs at Télécom Paris, Institut Polytechnique de Paris (IP-Paris) june 2024
- Teacher Assistant (TA) in selected courses: Deep Learning, Computer Vision, Tensor Decompositions in Signal Processing, EEG Signal Processing, Medical Image Processing, Medical Image Systems, Biomedical Signal and Image Processing Lab. Oct 2017 - Sep 2022
- Co-Supervision of several B.Sc. and M.Sc. students at EE department of SUT. Sep 2022 - Present
- EEG signal processing presentation at Sharif Neuroscience Symposium. Jan 2020 - Feb 2020
- Teaching fundamentals in Math and Physics for university entrance students. Oct 2014 - Oct 2015

AWARDS AND HONORS

- Winning the [HPI PARIS](#) postdoctoral fellowship 2023.
- Best Ph.D. Student, EE Department, Sharif University of Technology.
- Top %1 in Graduate (and Ph.D.) national entrance exam.
- Ranked 1st in Master of Science, Bioelectric Major, EE Department, Sharif University of Technology.

INVITED REVIEWER

Journals: IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Cybernetics, Neural Networks Elsevier, Scientific Reports, IEEE Signal Processing Letters.

COMPUTER SKILLS

Programming Languages

Python, Matlab, C/C++ (Minor).

Relevant Libraries

Keras, Tensorflow, PyTorch, OpenCV, L^AT_EX.

LANGUAGES

English: Professional Proficiency.

French: In the learning process, in the A2 level.

Farsi: Native Language.

REFERENCES

1. Dr. [Jhony H. Giraldo](#), Assistant Professor at Télécom Paris, Institut Polytechnique de Paris
Email: jhony.giraldo@telecom-paris.fr
2. Dr. [Fragkiskos D. Malliaros](#), Associate Professor (HDR) at CentraleSupélec, Paris-Saclay University
Email: fragkiskos.malliaros@centralesupelec.fr
3. Dr. [Sepideh Hajipour](#), Assistant professor at Sharif University of Technology, Iran
Email: hajipour@sharif.edu