AREF EINIZADE

Image, Data, Signal (IDS), Télécom Paris, Institut Polytechnique de Paris, France
aref.einizade@yahoo.com
aref.einizade@telecom-sudparis.eu

EDUCATION

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

Journal Papers

- **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.
- **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.
- **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-paradigmlearning using convolutional neural network for P300 event-related potential detection"*, J Neurol Neurosci, 11(5), 329.
- **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.

Conference Papers

- **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.

Preprints (Under Review)

- Alizade, M. H., & **Einizade, A.**, Giraldo J. (2023). Kernel-based Joint Multiple Graph Learning and Clustering of Graph Signals. arXiv preprint. *Submitted to IEEE SPL*. status: **Under Review**.

Research/Job Experience

- 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

- 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, LaTeX.

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