AREF EINIZADE

Engineering for Health Interdisciplinary Center (E4H), Télécom SudParis, Institut Polytechnique de Paris, France
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RESEARCH and EDUCATION POSITIONS

Assistant Professor Feb 2026 - Now
Télécom SudParis, Institut Polytechnique de Paris, France
Topic: *Graph Machine Learning, Generative Models, Graph Signal Processing, Biomedical Applications.*

Postdoctoral Researcher Nov 2023 - Jan 2026
Télécom Paris, Institut Polytechnique de Paris, France
Topic: *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

Graph Machine Learning, Graph Signal Processing, Graph Neural Network, Large Language Models, Applications.

PUBLICATIONS

- **Einizade, A.**, Dorina Thanou, Malliaros, F. D., Giraldo, J. H. (2025). *"Continuous Simplicial Neural Networks"* The Thirty-ninth Annual Conference on Neural Information Processing Systems (NeurIPS).
- **Einizade, A.**, Malliaros, F. D., Giraldo, J. H. (2025). *"Second-Order Tensorial Partial Differential Equations on Graphs"* Submitted to ICASSP.
- Xie, Sh., **Einizade, A.** and Giraldo, J. H. (2025). *"Subgraph Gaussian Embedding Contrast for Self-Supervised Graph Representation Learning"* Joint European Conference on Machine Learning and Knowledge Disovery in Databases (ECML-PKDD).
- **Einizade, A.**, Malliaros, F. D., Giraldo, J. H. (2024). *"Continuous Product Graph Neural Networks"* The Thirty-eighth Annual Conference on Neural Information Processing Systems (NeurIPS).
- **Einizade, A.**, Malliaros, F. D., Giraldo, J. H. (2025). *"Spatiotemporal Forecasting Meets Efficiency: Causal Graph Process Neural Networks"*, arXiv preprint. *Under Review at* IEEE TNNLS.
- Giraldo, J. H., **Einizade, A.**, Todorovic, A., Castro-Correa, J. A., Badiey, M., Bouwmans, T., Malliaros, F. D. (2024). *"Higher-Order GNNs Meet Efficiency: Sparse Sobolev Graph Neural Networks"*, IEEE Transactions on Signal and Information Processing over Networks.
- **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.
- 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-paradigmlearning 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.

Teaching/Research/Job Experience

- Co-supervision of several PhD, master's, and interns at Télécom Paris. Nov 2023 - Now
- Attended the jury group of the defense sessions of four MSc internship projects. Aug 2024 - Now
- Teacher Assistant (TA) in several courses at Télécom Paris such as Source separation, Non-negative Matrix Factorization, Intro to ML, Statistical Learning, Graph Machine Learning labs. June 2024 - Now
- 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: $\sim$ **150 hours**. Oct 2017 - Sep 2022
- Co-Supervision of several B.Sc. and M.Sc. students at EE department of SUT. Sep 2022 - Nov 2023

- 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 2025-2026 ANR projects DeSNAP (ANR-24-CE23-1895-01) postdoctoral fellowship grant
- Winning 2023-2025 HI! PARIS postdoctoral fellowship with a value of 120,800 euros, France.
- Winning 2023 Digital Futures postdoc fellowship (non-taken) of KTH University, value: 42K euros/year, Sweden.
- 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

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

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