Arash Rasti Meymandi, Ph.D.

arash.rasti@mail.utoronto.ca LnikedIn
https://arashrasti96.github.io

I'm a Ph.D. candidate in Electrical & Computer Engineering, University of Toronto. My background includes teaching in academic and industrial settings, where I've gained practical experience applying **Machine Learning** and **Signal Processing** algorithms. I've worked on diverse applications, ranging from Biomedical to Communication Technologies. My current research is on **Graph-structured Machine Learning**, **Graph Neural Networks**, and **Graph Transformers**.

Education

2022 – **Ph.D. in Electerical and Computer Engineering, University of Toronto**

2019–2022 **M.Sc. in Biomedical Engineering (1st rank), Iran Uni of Science and Technology** major in Bioelectric, **GPA: 18.75 /20**
Thesis title: *MR image reconstruction based on sparse representation and deep learning*.

2014–2019 **B.Sc. in Electrical Engineering (1st rank), Yazd University** major in Electronics, **GPA: 18.64 /20**
Thesis title: *mplementation of an Intelligent Identification System Based on Visible Light Communication*.

Research Publications

Journal Articles

1. A. Rasti-Meymandi, A. Ghaffari, and E. Fatemizadeh, "Plug and play augmented hqs: Convergence analysis and its application in mri reconstruction," *Neurocomputing*, vol. 518, pp. 1–14, 2023.
2. A. Rasti-Meymandi and A. Ghaffari, "A deep learning-based framework for ecg signal denoising based on stacked cardiac cycle tensor," *Biomedical Signal Processing and Control*, vol. 71, p. 103 275, 2022.
3. A. Rasti-Meymandi, S. M. Sheikholeslami, J. Abouei, and K. N. Plataniotis, "Graph federated learning for ciot devices in smart home applications," *IEEE Internet of Things Journal*, vol. 10, no. 8, pp. 7062–7079, 2022.
4. S. M. Sheikholeslami, A. Rasti-Meymandi, S. J. Seyed-Mohammadi, J. Abouei, and K. N. Plataniotis, "Communication-efficient federated learning for hybrid vlc/rf indoor systems," *IEEE Access*, vol. 10, pp. 126 479–126 493, 2022.
5. A. Rasti-Meymandi and A. Ghaffari, "Aecg-decompnet: Abdominal ecg signal decomposition through deep-learning model," *Physiological Measurement*, vol. 42, no. 4, p. 045 002, 2021.
6. A. Rasti-Meymandi, A. Madahian, J. Abouei, *et al.*, "Design and implementation of vlc-based smart barrier gate systems," *AEU-International Journal of Electronics and Communications*, vol. 136, p. 153 765, 2021.

Conference Proceedings

1. A. Rasti-Meymandi, P. Chet Ng, H. Liu, Y. Yu, and K. N. Plataniotis, "Persota fl: A robust-to-noise personalized over the air federated learning for human activity recognition," in *the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) (Workshop)(Accepted), Conference Date: 2024/4*, IEEE, 2024, pp. -.

2. A. Rasti-Meymandi, A. Sajedi, and K. N. Plataniotis, "Fedpnp: Personalized graph-structured federated learning," in *Computer Vision–ECCV 2024: 18th European Conference on Computer Vision, Milan, Italy (Submitted)*, Springer, 2024, pp. -.

3. A. Rasti-Meymandi, J. Abouei, Z. Hajiakhondi-Meybodi, A. Mohammadi, and A. Asif, "Fast machine learning-based signal classification in energy constrained crn: Fpga design and implementation," in *2021 IEEE International Conference on Autonomous Systems (ICAS)*, IEEE, 2021, pp. 1–5.

4. A. Rasti-Meymandi, R. Karimzadeh, A. Zarei, and A. Ghaffari, "A non-contact heart rate estimation framework based on photoplethysmography amplitude variation elimination and data fusion," in *2021 28th National and 6th International Iranian Conference on Biomedical Engineering (ICBME)*, IEEE, 2021, pp. 236–241.

Experience

Machine Learning Engineer

Since Fall 2022 — Joint Project: Natural Language Processing for Persian Poetry (Elahé Omidyar Mir-Djalali Institute)

Machine Learning Researcher

Fall 2022- Fall 2023 — Noah's Ark Lab, Huawei Technologies, Toronto, Canada

Teaching Assistant

Winter 2024 — **CSC311H5:** Machine Learning and Data Mining

CSC420H5: , Introduction to Image Understanding

Fall and Winter 2023 — **CSCC11H3:** , Introduction to Machine Learning and Data Mining

Fall 2023 — **CSC373H5F**, Algorithm Design and Analysis

Fall 2016 and Winter 2017 — **undergrad course**, Signal and Systems Signal and Systems

Freelance lecturer

Spring 2017 — **PARSAN Electronics**. As a part-time job, I was assigned to teach "Practical Electronic" course at PARSAN electronic company.

Relevant courses taken

Fall 2022 - **ECE1513HF** Introduction to Machine Learning (Grade : A^+)

- **ECE1512HF** Image Processing and Applications (Grade : A^+)

Winter 2023 - **ECE1521H** Detection and Estimation (Grade : A^+)

- **ECE1762H** Algorithms and Data Structures (Grade : B^+)

Spring 2020 - Pattern Recognition (During M.sc.: Grade: 100/100)

- Digital Signal Processing (DSP) (During B.sc.: Grade: 100/100)

Fall 2016 - Probability and Statistics (During B.sc.: Grade: 93/100)

Fall 2017 - Digital Communication (During B.sc.: Grade: 95/100)

Skills

Languages — Strong reading, writing and speaking competencies for English and Farsi.

Skills (continued)

Coding	Python, Matlab, C, C++
ML Libraries	Pytorch, Tensorflow, scikit-learn