# Arash Rasti Meymandi, Ph.D.
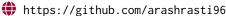
✉ arash.rasti@mail.utoronto.ca   in LnikedIn

🌐 https://github.com/arashrasti96

I'm a second-year Ph.D. candidate in Electrical & Computer Engineering. 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 **Distributed Machine Learning**, **Graph Neural Networks**, and **Transformers**.

## Education

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| 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** <br> 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** <br> 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

### Teaching Assistant

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| 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

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

## Relevant courses taken

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| 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

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| Languages | Strong reading, writing and speaking competencies for English and Farsi. |
| Coding | Python, Matlab, C, C++ |
| ML Libraries | Pytorch, Tensorflow, scikit-learn |