

Arash Rasti-Meymandi

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SUMMARY OF QUALIFICATION

2 years of industry and 8 years of academic experience as an Applied Machine Learning Scientist, Research Scientist, and Machine Learning Engineer.

Proven track record of reducing data collection time/cost up to 80% with the same outcomes by proposing novel learning paradigms.

Author of 10 Machine Learning papers at the intersection of Communications, Biomedical Technologies, and Language Models.

Holds a Ph.D. from University of Toronto in Machine Learning (Electrical and Computer Engineering Dpt).

Strong communication skills, teamwork ethic, and innovative problem-solving abilities.

Passionate about optimizing AI models to reduce time and resource usage.

PROFESSIONAL EXPERIENCE

Applied Computer Vision and AI Scientist

Aivalon: Health Technologies

01/2024 – Present

Developing the MVP using deep learning and data augmentation, reducing the model's error from 10 MAE to approximately 3 MAE.

Modeled the problem and trained a model using a synthetic dataset with fine-tuning, achieving equivalent performance while reducing data collection time, cost, and resource usage up to 80%.

Machine Learning Engineer

Noah's Ark Lab, Huawei Technologies, Toronto, Canada

01/2023 – 09/2023

Assisted in creating a multimodal data collection system for Human Activity Recognition (HAR).

Designed and implemented a Federated Learning algorithm on the multimodal HAR dataset.

Contributed to an ICASSP paper publication.

Machine Learning Researcher

Elahé Omidyar Mir-Djalali Institute of Iranian Studies:

09/2022 – 01/2025

Developed a Natural Language Processing (NLP) model for Persian Poetry.

Integrated OpenAI and HuggingFace APIs to create a novel Retrieval Augmented Generation (RAG) system for poem analysis.

Published research findings in a peer-reviewed paper.

Graduate Research Associate

University of Toronto

12/2022 – Present

Developed algorithms in graph-structured machine learning (graph federated learning and graph distillation) during the first year of Ph.D. candidacy.

Published/submitted 4 research papers.

EDUCATION

University of Toronto

Ph.D. in Electrical and Computer Engineering

Toronto, Canada

09/2022 – 09/2025

Iran University of Science and Technology

M.Sc. in Biomedical Engineering, Bioelectric

Tehran, Iran

09/2019 – 09/2022

Yazd University

B.Sc. in Electrical Engineering

Yazd, Iran

09/2014 – 09/2019

PROJECTS

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| Remote Photoplethysmography (PPG) Extraction using Video Camera <i>Signal Processing</i> Developing a hybrid deep learning/signal processing model to extract PPG as a biomarker. Enhancing extraction accuracy by training a novel deep learning model. | 05/2024 – Present <i>Python, OpenCV</i> |
| Human Activity Recognition (HAR) with Multimodal Sensors <i>Deep Learning / Federated Learning Project</i> Implemented a multimodal deep learning model for HAR. Contributed to data collection efforts. | 01/2023 – 09/2023 <i>Python, TensorFlow</i> |
| Artificial Intelligence for Digital Humanities <i>Natural Language Processing</i> Implemented a pre-trained BERT model to extract poem embeddings. Integrated multiple APIs to develop a Retrieval Augmented Generation system for poem analysis and Q&A. | 12/2022 – Present <i>Python, NLTK, HuggingFace, OpenAI</i> |
| Visible Light Communication (VLC) for Smart Gates <i>Communication Engineering Project</i> Developed VLC technology for vehicle-to-infrastructure communication. Filed an Iranian patent. | 10/2018 – 09/2019 <i>C, C++</i> |

PUBLICATIONS

Selected Publications: ECCV-DD, IEEE IoT, Pattern Recognition, Neurocomputing

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| [C2] "GSTAM: Graph Distillation with Structural Attention-Matching," Rasti-Meymandi et al. – ECCV24 |
| [J1] "FedPnP: Personalized Graph-Structured Federated Learning," Rasti-Meymandi et al. – Pattern Recognition, Elsevier 2025 |
| [J2] "Graph Federated Learning for IoT Devices in Smart Home Applications," Rasti-Meymandi et al. – IEEE IoT Journal, 2022 |
| [J3] "Plug and Play Augmented HQS: Convergence Analysis and its Application in MRI Reconstruction," Rasti-Meymandi et al. – Neurocomputing, Elsevier, 2023 |
| [J4] "A Deep Learning-Based Framework for ECG Signal Denoising Based on Stacked Cardiac Cycle Tensor," Rasti-Meymandi et al. – Biomedical Signal Processing and Control, Elsevier, 2022 |
| [J5] "Opportunities for Persian Digital Humanities Research with AI Language Models; Case Study: Forough Farrokhzad," Rasti-Meymandi et al. – ArXiv (Submission Pending), 2024 |

SKILLS

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| Programming Languages: Python, C++, MATLAB |
| Deep Learning Frameworks: PyTorch, TensorFlow, Keras, TensorRT, ONNX |
| Libraries & Tools: NumPy, Scikit-learn, OpenCV, NLTK, Pandas, etc. |

HONORS AND TEACHING EXPERIENCE

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| Reviewer 01/2024 | Reviewer for top-tier journals and conferences (e.g., ECCV24, IEEE Access) |
| Tutorial Teaching Assistant 01/2024 | Introduction to Computer Science II, University of Toronto |
| Project Teaching Assistant 01/2023 | Introduction to Image Understanding, University of Toronto |
| Project Teaching Assistant 01/2023 | Algorithm Design and Analysis, University of Toronto |
| Project Teaching Assistant 01/2022 – 01/2023 | Introduction to Machine Learning, University of Toronto |