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 1 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   Toronto, Canada
Ph.D. in Electrical and Computer Engineering   *09/2022 – Present*
Iran University of Science and Technology   Tehran, Iran
M.Sc. in Biomedical Engineering, Bioelectric   *09/2019 – 09/2022*
Yazd University   Yazd, Iran
B.Sc. in Electrical Engineering   *09/2014 – 09/2019*

PROJECTS

Remote Photoplethysmography (PPG) Extraction using Video Camera   05/2024 – Present
Signal Processing   *Python, OpenCV*
    Developing a hybrid deep learning/signal processing model to extract PPG as a biomarker.
    Enhancing extraction accuracy by training a novel deep learning model.

Human Activity Recognition (HAR) with Multimodal Sensors   01/2023 – 09/2023
Deep Learning / Federated Learning Project   *Python, TensorFlow*
    Implemented a multimodal deep learning model for HAR.
    Contributed to data collection efforts.

Artificial Intelligence for Digital Humanities   12/2022 – Present
Natural Language Processing   *Python, NLTK, HuggingFace, OpenAI*
    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.

Visible Light Communication (VLC) for Smart Gates   10/2018 – 09/2019
Communication Engineering Project   *C, C++*
    Developed VLC technology for vehicle-to-infrastructure communication.
    Filed an Iranian patent.

PUBLICATIONS

Selected Publications: ECCV, AAAI, IEEE IoT, Pattern Recognition, Neurocomputing

[C1] "Learning with Dual Noisy Labels for Text-to-Image Person Re-identification," et al. Rasti-Meymandi, et al. – **AAAI25**

[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

Programming Languages: Python, C++, MATLAB

Deep Learning Frameworks: PyTorch,TensorFlow, Keras, TensorRT, ONNEX

Libraries & Tools: NumPy, Scikit-learn, OpenCV, NLTK, Pandas, etc.

HONORS AND TEACHING EXPERIENCE

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