Arash Rasti Meymandi

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Highlights of Qualification

- 3 years of industry and academic experience as Machine Learning Researcher/Engineer.
- Author of multiple Machine learning papers at the intersection of Communications, Biomedical Technologies, and Language Models.
- Having a Ph.D. and M.Sc. in Machine Learning from Electrical and Computer Engineering stream
- Strong communication ability, collaboration work, and skilled in thinking out of the box to solve real-world problems

Professional Experience

Computer Vision and AI Technical Specialist

Aivalon: Health Tech Start-up [Link] — *April 2024-Present*

- Developed the MVP for the company
- Actively assess and select top talent for our technical and research teams in the company

Machine Learning Engineer

Noah's Ark Lab, Huawei Technologies , Toronto, Canada — *Jan. 2022-Sept. 2023*

- Helped creating the multimodal data collection for Human Activity Recognition (HAR)
- Designed and implemented a Federated Learning algorithm on the multimodal HAR dataset
- Published on ICASSP workshop paper

Machine Learning Researcher

Joint Project: Natural Language Processing (NLP) for Persian Poetry — *Sept 2022-Present*

- Developed a Language Processing model for Persian Poetry
- Published a research paper

Graduate Research Assistant

University of Toronto — *Dec 2022-Present*

- Developed multiple algorithms in Graph structured-manchine learning such as graph federated learning and graph distillation within the first Ph.D. candidacy year
- Published/submitted 3 research papers

Projects

Remote Photoplethysmography (PPG) extraction using Video Camera — May 2024 – Present

Signal Processing — *Python, OpenCV*

- Developing a hybrid deep learning/signal processing aided model for the extraction of PPG as a biomarker
- Developed the MVP for the company

Human Activity Recognition (HAR) with Multimodal Sensors — Jan 2023 – Sept 2023

Deep Learning/Federated Learning Project — *Python, TensorFlow*

- Implemented a multimodal model for HAR
- Participated in the Data collection

Artificial Intelligence for Digital Humanities — Dec 2022 – Present

Natural Language Processing — *Python, NLTK, Hugging Face*

- Developed an end-to-end system for generating wordcloud of topics in Persian poems
- Implemented a pre-trained transformer model (Bert) to extract embeddings from poems

Visible Light Communication (VLC) for Smart Gates — Oct 2018 – Sept 2019

Communication Engineering project — *C,C++*

- Developed the VLC technology for vehicle to infrastructure communication
- Filed an Iranian Patent

Education

University of Toronto — Toronto, Canada
Ph.D. in Electrical and Computer Engineering — *Sept 2022 – Present*

Iran University of Science and Tech — Tehran, Iran
M.Sc. in Biomedical Engineering, Bioelectric — *Sept 2019 – Sept 2022*

Yazd University — Yazd, Iran
B.Sc. in Electrical Engineering — *Sept 2014 – Sept 2019*

Publications

First Author in impactful papers (ECCV, IEEE IoT Journals, Pattern Recognition, Neurocomputing)

[C1] "GSTAM: Graph Distillation with Structural Attention-Matching", Rasti-Meymandi et al., **ECCV24-DD (Submitted)**

[J1] "FedPnP: Personalized Graph-Structured Federated Learning", Rasti-Meymandi et al., **Pattern recognition , Elsevier 2024 (Submitted)**

[J2] "Graph federated learning for ciot devices in smart home applications", Rasti-Meymandi et al., **IEEE Internet of Things 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] "AECG-DecompNet: abdominal ECG signal decomposition through deep-learning model", Rasti-Meymandi et al., **Physiological Measurement, 2021**

[J6] "Opportunities for Persian Digital Humanities Research with Artificial Intelligence Language Models; Case Study: Forough Farrokhzad", Rasti-Meymandi et al., **ArXiv (Submission pending for journal), 2024**

Skills

Programming language:Python, C, MATLAB,

Deep Learning Frameworks: TensorFlow, PyTorch, Keras

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

Honors and Teaching Experience

Reviewer: **Reviewer of Top-tired Journals and top conferences such as ECCV24, IEEE Access, etc.** — 2024
Tutorial TA: **Introduction to Computer Science II, University of Toronto** — Summer 2024
Project TA: **Introduction to Image Understanding, University of Toronto** — Winter 2023
Project TA: **Algorithm Design and Analysis, University of Toronto** — Winter 2023
Project TA: **Introduction to Machine learning, University of Toronto** — Winter, Fall 2023 and 2022