Sahar Rahimi Malakshan

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Fourth-year Ph.D. student with a strong focus on Computer Vision, currently interning at Mayo Clinic.

Education

West Virginia University — *Morgantown, USA*

Ph.D. in Electrical Engineering (GPA: 4.0/4.0)- Expected Graduation: Dec 2025 – May 2026. — *Aug 2021 - Current*

- **Courses:** Deep Learning, Computer Vision, Application of Neural Networks, Stochastic System Theory, Pattern Recognition, Natural Language Processing Specialization (Coursera), Generative AI with Large Language Models (Coursera).

K. N. Toosi University of Technology — *Tehran, Iran*

M.Sc. in Biomedical Engineering (GPA: 4.0/4.0) — *Sep 2017 - Sep 2020*

K. N. Toosi University of Technology — *Tehran, Iran*

B.Sc. in Electrical Engineering (GPA: 3.5/4.0) — *Sep 2012 - Sep 2016*

Work Experience

Mayo Clinic — *Rochester, MN, USA*

Intern in Data Science AI&I — *January 2025 – Present*

Selected Papers (Google Scholar Link)

- Decomposed Distribution Matching in Dataset Condensation, *In WACV, 2025.*
- ARoFace: Alignment Robustness to Improve Low-Quality Face Recognition, *In ECCV, 2024.*
- Hyperspherical Classification with Dynamic Label-to-Prototype Assignment, *In CVPR, 2024.*
- A Quality Aware Sample-to-Sample Comparison for Face Recognition, *In WACV, 2023.*
- Joint Super-Resolution and Head Pose Estimation for Extreme Low-Resolution Faces, *In IEEE Access, 2023.*
- Deep boosting multi-modal ensemble face recognition with sample-level weighting, *In IJCB, 2023.*

Skills

- **Technical Skills**: Proficient in Python for machine learning, deep learning, and data analysis; experienced with platforms like Dataiku and AWS (SageMaker, S3).
- **Soft Skills**: Demonstrated creativity in problem-solving and strong communication abilities, evidenced by presentations at academic meetings, poster sessions, and publications in peer-reviewed journals and conference proceedings.

Recent projects

- **Efficient Dataset Condensation**: Developed a novel dataset condensation method that enhances style matching and intra-class diversity in condensed datasets. This approach circumvents costly bilevel optimization by matching statistical moments for style alignment and maximizing intra-class Kullback–Leibler divergence, resulting in a paper accepted at the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2025.
- **Long Range Face Recognition**: Supported by the Intelligence Advanced Research Projects Activity (IARPA), contributed to presentations and PI review meetings for the IARPA-Biometric Recognition and Identification at Altitude and Range (BRIAR) program in Spring 2022, Fall 2022, Spring 2023, and Fall 2023. These efforts led to the publication of four papers: one accepted at European Conference on Computer Vision (ECCV), two presented at IEEE International Joint Conference on Biometrics (IJCB) conferences and one presented at WACV.
- **Metric Space Utilization**: Developed a novel method for dynamic optimization of prototype categories during deep learning training, enhancing metric space utilization. Our approach, which diverges from traditional static methods, employs a two-step optimization process involving network parameters and label-to-prototype mapping. This method demonstrated improvements in both balanced and long-tail classification tasks across various architectures, resulting in a paper accepted at the IEEE Conference on Computer Vision and Pattern Recognition (CVPR).
- **Head Pose Estimation and Profile-to-Frontal Face Recognition**: Supported by the Office of the Director of National Intelligence (ODNI), conducted research resulting in one published paper presented at the IJCB focusing on profile-to-frontal face recognition techniques. Additionally, authored another paper published in the IEEE Access journal covering challenges in head pose estimation for extremely low-resolution images.
- **Functional and Structural human brain changes**: Developed an innovative model that integrates EEG data and MR images to analyze age-related changes in the adult brain cortex. This research culminated in significant findings, published in two prominent journals: a research paper in the PLoS ONE journal and a comprehensive review in the Reviews in the Neurosciences journal.

Reference

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