

# MEHRSHAD SAADATINIA

Graduate Student at University of Southern California

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## Education

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### University of Southern California

*MS in Computer Science*

- Cumulative GPA: 3.62/4 | GPA over **last three** semesters: **3.94/4.0**

**Jan. 2024 – Present**

*Los Angeles, California, USA*

### Shahid Beheshti University

*BSc in Computer Engineering*

- Cumulative GPA: 17.40/20 (3.7/4) | **Best B.Sc thesis**

**Sep. 2018 – Feb. 2023**

*Tehran, Iran*

## Research Interests

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Machine Learning | Natural Language Processing | AI-for-Science | Foundation Models

## Publications

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- "An Explainable Deep Learning-Based Method For Schizophrenia Diagnosis Using Generative Data-Augmentation" **M Saadatinia** and A Salimi-Badr (2024). *IEEE Access* [[link](#)]
- "Sex-specific patterns of a machine learning-derived Alzheimer's brain atrophy imaging signature in participants without diagnosed cognitive impairment: A multi-cohort study" F Anagnostakis, **M Saadatinia**, S Ko et al. (2025). *Alzheimer's Association International Conference* [[link](#)]
- "Multi-organ metabolome biological age implicates cardiometabolic conditions and mortality risk" F Anagnostakis, S Ko, **M Saadatinia**, J Wang, C Davatzikos, J Wen (2025). *Nature Communication* [[link](#)]
- "Enhancing Multi-Modal Video Sentiment Classification Through Semi-Supervised Clustering" **M Saadatinia**, M Ahmadi, A Abdollahi (2025). *Arxiv preprint* [[link](#)]
- "EvoGLAD: Evolving Graph-Level Representations for Anomaly Detection in Metagenomic Communities" **M Saadatinia**, Willie Neiswanger (2025). *under preparation | draft included*
- "CircuitSteer: Circuit Discovery-Based Steering via Sparse Autoencoder Feature Flow" **M Saadatinia**, Ardalan Aryashad, Ali Abbasi, Parsa Razmara (2025). *under preparation | draft included*

## Experience

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### Morality and Language Lab (MOLA)

*Research Intern, Supervisor: Dr. Morteza Dehghani*

- [Project] Collaborating with an interdisciplinary team on modeling respect and summarizing LAPD traffic-stop interactions; publications in preparation.

**Oct. 2025 – Present**

*University of Southern California*

### Dr. Willie Neiswanger Group

*Research Intern, Supervisor: Dr. Willie Neiswanger*

- [Project] Led a project applying GNNs and METAGENE-1 foundation model to model DNA/RNA dynamic community structure for pathogen detection; Paper under preparation for **ICML-2026**

**Jan. 2025 – Present**

*University of Southern California*

### Center for Advanced Research Computing (CARC)

*Student Researcher, Supervisor: Dr. Iman Rahbari*

- [Project] Benchmarking, evaluating and improving Large Language Models for Deep Research
- [Project] Retrieval Augmented Generation (RAG) from CARC videos to improve CARC-LLM responses

**April. 2025 – Present**

*University of Southern California*

### Laboratory of AI & Biomedical Science (LABS)

*Research Intern, Supervisor: Dr. Junhao Wen*

- [Project] Led the development of a neural architecture for detecting disease subtypes using imaging and genetic signatures via weakly supervised deep clustering

**May. 2024 – Aug. 2025**

*Columbia University*

- [Project] Contributed to several biomedical data projects across the lab, resulting in publications in top tier venues

## Natural Language Processing Lab

Sep. 2022 – Jan. 2023

Undergraduate Research Assistant, Supervisor: *Dr. Mehrnoush Shamsfard* Shahid Beheshti University

- [Project] Developed a Transformer-based model for informal-to-formal style transfer in Persian texts

## Relevant Graduate Coursework

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Deep Learning and Applications (A) | Applied Natural Language Processing (A)

Machine Learning (A-) | Advanced Computer Vision (A) | Probabilistic and Generative Models (TBA)

## Skills

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**Programming Languages:** Python, C/C++ (and OpenGL), R, Java, JavaScript, MATLAB

**ML & DL:** TensorFlow (and Keras), PyTorch, Scikit-Learn, LangChain

**Technologies:** Git, Linux, Docker, Google Cloud, Databases (SQL and MongoDB), Vector DBs, REST

**Other Skills:** Mathematics, Statistics, Generative Models, RAG

## Teaching Experience

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**Head-TA**, Artificial Intelligence & Expert Systems (Undergrad), Shahid Beheshti University, 3 Semesters

**Head-TA**, Signals and Systems (Undergrad), Shahid Beheshti University, 3 Semesters (2021–2023)

**Head-TA**, Advanced Programming (Undergrad), Shahid Beheshti University, 4 Semesters (2019–2021)

**TA**, Compiler Design (Undergrad), Shahid Beheshti University, 1 Semester (Fall 2020)

## Selected Projects

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**Deep Learning-Based Schizophrenia Diagnosis** | [Code](#) | App code

- Developed a deep CNN-based system for schizophrenia diagnosis, integrating a VAE-based data augmentation model improving diagnostic accuracy by 3%, reaching 99%

**LoRA Fine-tuned Stable Diffusion for High-Fidelity Human Face Generation** | [Code](#)

- Fine-tuned Stable Diffusion with LoRA for high-fidelity human face synthesis, achieving significant improvements in realism and detail over the base model; To be publically released on **Hugging Face**

**Interpretable Multi Modal Depression Detection** | [Code](#)

- Depression Detection Using An Interpretable Audio-textual Multi-modal Transformer-based Model
- Improved state-of-the-art accuracy by 2.0% on DAIC-WoZ dataset

## Honors & Awards

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The best **B.Sc** thesis award in CSE department | [certificate](#)

Ranked within the top **0.2%** among 300,000 participants (2018 nationwide university entrance exam)

## Certifications and Workshops

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**Machine Learning Course** | Certificate

Instructed by: Andrew Ng

February 2022

Stanford Online | Coursera

**Deep Learning Specialization** | 5 Courses | Certificate

Instructed by: Andrew Ng

September 2023

DeepLearning.AI | Coursera

## References

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**Dr. Willie Neiswanger** | Assistant Professor

Email: [neiswang@usc.edu](mailto:neiswang@usc.edu)

**Dr. Armin Salimi-Badr** | Assistant Professor

Email: [a\\_salimibadr@sbu.ac.ir](mailto:a_salimibadr@sbu.ac.ir)

**Dr. Iman Rahbari** | Computational Scientist

Email: [irahbari@usc.edu](mailto:irahbari@usc.edu)

**Dr. Junhao Wen** | Assistant Professor

Email: [jw4745@cumc.columbia.edu](mailto:jw4745@cumc.columbia.edu)