

Parham Zilouchian Moghaddam

School of Electrical and Computer Engineering, University College of Engineering, University of Tehran, North Kargar st., Tehran, Iran.

✉ p.zilouchian@gmail.com | 📄 Google Scholar | 🆔 ORCID | 🌐 Website | 📧 parhamzm | 📧 parhamzm |

☎ (+98) 998-123-0333

Education

🏛 University of Tehran (UT)

Tehran, Iran

Sep. 2019 – Feb. 2023

- M.Sc. in Computer Engineering (Computer Architecture)
- Cumulative GPA: **19.18/20 (3.88/4)**
- Thesis: *Designing Generative Models for Developing Deep Learning Applications in Video Compression*

🏛 University of Kashan (UK)

Kashan, Iran

Sep. 2015 – Sep. 2019

- B.Sc. in Computer Engineering (Software Engineering)
- GPA (last **two** years): **18.25/20 (3.96/4)** | • Cumulative GPA: **17.68/20 (3.81/4)**
- Thesis: *A Hybrid Deep Learning–SVM Classification Framework*

Research Interests

- | | | |
|---|---|---|
| ☒ Generative Models | ☒ Accountable Agents | ☒ Computer Vision |
| ☒ Trustworthy AI | ☒ Multimodal Learning | ☒ LLMs |

Research Experience

🕒 Research Assistant at Computer Vision Lab

April 2024 – Present

University of Tehran, Iran

- Supervised by *Dr. Mostafa Tavassolipour*, *Dr. Mehdi Modarressi*
- Investigating reliability and trustworthiness in generative and vision models, with a focus on robustness and fairness.
- Developing a hybrid generative–algorithmic framework for industrial carpet pattern design to assist carpet designers.

🕒 Researcher at Qatar Computing Research Institute (QCRI)

March 2025 – March 2026

QCRI, Doha, Qatar (Remote)

- Supervised by *Dr. Mohammad Amin Sadeghi*, *Dr. Anas A. Al-Nuaimi*
- Core contributor to **Fanar**, an Arabic-centric multimodal generative AI platform; led culturally-aligned image generation.
- Built an image-generation evaluation toolbox and benchmarking pipeline; metrics adopted across the project.
- Authored a manuscript (“Fanar Oryx: Culturally Aligned Image Generation for Arabic-Islamic Visual Culture”) ready for submission.

🕒 Research Assistant at Intelligent Architectures for Computing Systems Research Lab

Nov. 2019 – Present

University of Tehran, Iran

- Supervised by *Dr. Mehdi Modarressi*
- Coordinate the lab’s reading group on LLM hardware and efficiency.
- Optimizing GAN inference efficiency via pruning, quantization, and hardware-aware design.
- Designing energy-efficient LSTMs for wearable health devices, preserving accuracy under power and latency budgets [6].
- Contributed to a peer-reviewed publication on deep learning acceleration in 3D-stacked memories (IEEE CAL, 2023) [2].

🕒 Research Assistant at Computational Modeling and Machine Learning Lab

Jan. 2020 – March 2023

University of Tehran, Iran

- Supervised by *Dr. Mehdi Modarressi*, *Dr. Mohammad Amin Sadeghi*
- Developed “NU-Class Net”, a custom deep neural architecture for enhancing low-bitrate compressed video quality.
- Achieved approximately 7× video size reduction while preserving perceptual quality through a learned restoration network.
- Work published in Engineering Applications of Artificial Intelligence (Elsevier, Q1) [1].

🕒 Artificial Intelligence Researcher

2018 – 2019

University of Kashan, Iran

- Supervised by *Dr. Javad Salimi Sartakhti*
- Built a hybrid DNN–SVM classifier with 5% accuracy gains over baselines; basis of B.Sc. thesis and paper [3].

🕒 Augmented Reality Researcher

2017 – 2019

University of Kashan, Iran

- Supervised by *Dr. Javad Salimi Sartakhti*
- Developed a Unity-based AR application for surface detection and 3D object placement, validated across diverse object categories.

Publications

Peer-Reviewed

- [1] **P. Z. Moghaddam**, M. Modarressi, M. A. Sadeghi, “NU-Class Net: A Novel Deep Learning-based Approach for Video Quality Enhancement,” *Engineering Applications of Artificial Intelligence* (Elsevier, Q1), vol. 144, 2025. doi:10.1016/j.engappai.2025.110118 2025
- [2] S. H. S. A. Rezaei, **P. Z. Moghaddam**, M. Modarressi, “Smart Memory: Deep Learning Acceleration in 3D-Stacked Memories,” *IEEE Computer Architecture Letters*, 2023. doi:10.1109/LCA.2023.3287976 2023
- [3] **P. Z. Moghaddam**, J. S. Sartakhti, “Deep Learning Based on Support Vector Machines (SVM),” *5th National Conference on Distributed Computing and Big Data Processing*, 2019 (in Persian). [link] 2019

[4] **P. Z. Moghaddam**, F. Lotfali, J. S. Sartakhti, “Improving Robot Behavior in a Real-Time Game Using the Grey Wolf Optimizer,” *2nd International Computer Games Conference: Opportunities and Challenges*, 2019 (in Persian). [\[code\]](#) 2019

Preprints & Manuscripts

[5] **P. Z. Moghaddam**, K. Isufaj, M. A. Sadeghi, R. Abolhasani, A. A. Al-Nuaimi, “Fanar Oryx: Culturally Aligned Image Generation for Arabic-Islamic Visual Culture,” Qatar Computing Research Institute (QCRI); (Submission in preparation). 2026

[6] F. Shayesteroodi, **P. Z. Moghaddam**, M. Mohammadinasab, M. Modarressi, M. E. Salehi-nasab, M. Daneshtalab, “Reducing the Complexity of Deep Learning Models for EEG Analysis on Wearable Devices,” 2026. [arXiv:2606.12742](#) 2026

[7] **P. Z. Moghaddam**, M. Charbaghi, J. S. Sartakhti, “Faster Wav2Vec: Improving the Inference Speed of Speech Representation Models,” manuscript in preparation. Draft available upon request. 2026

Honors & Awards

- Admitted twice to the Ph.D. program in Computer Science, University of California, Irvine (Fall 2024 & Fall 2025); unable to enroll due to U.S. visa processing delays. 2024 – 2025
- Awarded direct Ph.D. admission to the University of Tehran as an Exceptional Talent; declined to pursue a Ph.D. abroad. 2023 – 2024
- Graduated 1st** (highest overall GPA) among M.Sc. Computer Engineering (CA) students, University of Tehran. 2022
- Awarded ‘direct’ (entrance-exam-exempt) **M.Sc. admission** to the University of Tehran as an **Exceptional Talent**. 2019
- Awarded ‘direct’ **M.Sc. Admission offer** from the [University of Kashan](#) and [Shahid Beheshti University](#) as an Exceptional Talent. 2019
- Ranked 2nd** by GPA among Computer Software Engineering Students, University of Kashan. 2019
- Recognized as a Distinguished Student** by The University Committee for the Exceptional Talents, University of Kashan 2018

Work Experience

- Molavi Carpet: Software Engineer & Board Member** 2015 – Present
 - Integrated multimodal generative AI into the production pipeline for product imagery and marketing videos.
 - Lead the corporate web platform team and administer the company’s Linux servers and network infrastructure.
- ModAI: Computer Vision Developer** Jul. 2024 – Feb. 2025
 - Developed object detection and instance segmentation models (YOLOv8, SAM-based) for fashion-product catalogs.
 - Designed a custom image compression pipeline that reduced payload size by 75% and improved application response time.
- TechnoFarsh (carpet-industry marketplace): Founder & Developer** 2017 – 2020
 - Founded a B2B/B2C/C2C marketplace; incubated at the University of Kashan Innovation & Commercialization Center.
 - Built a Unity-based AR application for virtual eyewear try-on and in-room carpet visualization.

Technical Skills

- Programming:** Python (PyTorch, NumPy, Pandas), C/C++, MATLAB, SQL, Julia, R, VHDL, Verilog
- ML & Systems:** model compression (pruning, quantization), distributed training on Slurm clusters, FFmpeg video pipelines, Linux
- server administration, Google Cloud Platform, Git
- Web & Deployment (industry):** Django, FastAPI, React, Node.js
- Typesetting Tools:** $\LaTeX$, Microsoft office
- Languages:** English (IELTS Academic 7.5), Persian (Native)

Selected Teaching Experiences

- Trustworthy AI**, Head T.A., (Dr. Tavassolipour) @ UT 2023 - Now
- Generative Models**, T.A., (Dr. Sadeghi) @ UT 2023 - 2022
- Data Analysis**, T.A., (Dr. Sadeghi) & Abolghasemi @ UT 2022
- Data Analysis**, T.A., (Dr. Sadeghi) @ UT 2021
- Neural Networks & Deep Learning** T.A., @UT 2021
- Machine Learning**, Head T.A., (Dr. Salimi) 2022
- Discrete Mathematics**, Head T.A., (Dr. Ebrahimpour) 2021
- Artificial Intelligence**, Head T.A., (Dr. Ebrahimpour) 2020
- Matlab Laboratory**, Head T.A., (Dr. Ebrahimpour)@UK 2020
- Java Programming**, Teacher, Khayatzade HighSchool 2017

Selected Academic Projects

- Denoising Diffusion Probabilistic Models (DDPM)** 2024
 - Implemented a DDPM from scratch for image denoising and generation, studying the forward/reverse diffusion process and the role of variance scheduling in sample quality.
- Semantic Segmentation with U-Net** 2023
 - Developed a U-Net model for pixel-level segmentation of road, vehicle, and pedestrian classes on a self-driving car dataset.
- Car Detection with YOLO** 2022
 - Built a YOLO-based detection pipeline for street imagery, producing bounding-box predictions on a real-world vehicle dataset.
- LSTM-Based Music Generator** 2022
 - Trained a multi-layer LSTM for multi-genre music generation, exploring Delta-RNN and quantization for inference efficiency.
- Bio-Inspired Computing : Optimization Algorithms** 2021
 - Implemented Genetic Algorithm, Particle Swarm Optimization, K-Means, and Ant Colony Optimization for classical problems including ZOE and Vehicle Routing.

- **Parkinson's Disease Classifier**  2021
 - Designed and benchmarked 15 classifiers (KNN, DNN, SVM, ensembles) on a 700+ feature clinical dataset, achieving 98.3% accuracy.
- **Generative Adversarial Networks (GAN) Suite**  2021
 - Constructed and compared DCGAN, C-GAN, SR-GAN, and WGAN architectures, analyzing convergence and output fidelity.

Selected Online Courses

- **"Creative Thinking Tools for Success and Leadership" Certificate** - Offered by Imperial College London 2026
- **"Machine Learning Specialization" Certificate** - Offered by Stanford University 2024
- **"2023 Oxford Machine Learning Summer School - Health" Certificate** - Offered by OxML 2023
- **"2023 Oxford Machine Learning Summer School - Finance & NLP" Certificate** - Offered by OxML 2023
- **"Deep Learning Specialization" Certificate** - Offered by deeplearning.ai 2023
- **"Professional Neuroscience & Systems course"** - offered by **IPM School of Cognitive Science** 2021 - 2022
- **"Generative Adversarial Networks (GANs) Specialization" Certificate** - Offered by deeplearning.ai 2022
- **"Deep Neural Networks with PyTorch" Certificate** - Offered by IBM 2021

Voluntary & Extracurricular Activities

- **"Medium writer"**, Writing about various Computer Science and Deep Learning related topics, **My Profile** 2021 - Now
- **"YouTube Content Creator"** about various computer science related topics, **Channel Link** 2020 - Now
- **"Kashan's introduction to neuroscience workshop"**, Member of Executives 2016 - 2018
- **"University of Kashan Computer Engineering Association (CESS)"**, Member of Executives 2017 - 2018

ATTENDED WORKSHOPS

- **"2024 Oxford MLx GENERATIVE AI THEORY, AGENTS, PRODUCTS)" Certificate** - Offered by AI for Global Goals 2024
- **"8th Winter Seminar Series (WSS)" Certificate** - Offered by Sharif University of Technology 2023
- **"ReACT 2023" Certificate** - Offered by Sharif University of Technology 2023
- **Scale TransformX 2022 & 2021** 2022 & 2021
- **"How to be a Teaching Assistant" Certificate** - Offered by University of Tehran 2022
- **"Sixth IPM Advanced School on Computing & Artificial Intelligence" Certificate** 2022
- **"Fifth IPM Advanced School on Computing & Artificial Intelligence" Certificate** 2021

References

- | | |
|---|---|
| <ul style="list-style-type: none"> • Dr. Mehdi Modarressi <ul style="list-style-type: none"> • ASSOCIATE PROFESSOR- UNIVERSITY OF TEHRAN ✉ modarressi@ut.ac.ir • Dr. Mohammad Amin Sadeghi <ul style="list-style-type: none"> • SENIOR SCIENTIST - QATAR COMPUTING RESEARCH INSTITUTE (QCRI) ✉ msadeghi@hbku.edu.qa | <ul style="list-style-type: none"> • Dr. Javad Salimi Sartakhti <ul style="list-style-type: none"> • ASSOCIATE PROFESSOR - UNIVERSITY OF KASHAN ✉ salimi@kashanu.ac.ir • Dr. Mostafa Tavassolipour <ul style="list-style-type: none"> • ASSISTANT PROFESSOR - UNIVERSITY OF TEHRAN ✉ tavassolipour@ut.ac.ir |
|---|---|