

# Salar Shakibhamedan

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## Education

- 2021 – Now     **Ph.D.**, TU-Wien, Vienna  
                  *“Efficient and Scalable Optimization of Deep Learning Models (EU-Funded Project)”*
- 2015 – 2018     **M.Sc.**, K. N. Toosi University of Technology, Tehran  
                  *“Multimodal Blind Source Separation”.*
- 2010 – 2015     **B.Sc.**, K. N. Toosi University of Technology, Tehran  
                  *“(First) Persian Musical Instruments Recognition Model”*

## Experience

- Jan 2025 – July 2025     **Visiting Research Fellow**, University of California, Irvine  
- Developing LLM-powered Agentic AI systems generating healthcare datasets with fairness and bias mitigation.  
- Designed domain-specific LLM pipelines and RAG-based architectures for structured and unstructured medical data (real + synthetic).  
- Collaborated with cross-disciplinary teams, contributing to research at the intersection of Generative AI, fairness, and healthcare applications.
- May 2020 – Apr 2021     **Machine Learning Engineer-Data Scientist**, PART AI, Tehran  
- Developed and deployed ML/DL models for computer vision, first Persian speech recognition model, and music recommendation.  
- Performed data preprocessing, exploratory analysis, and feature engineering to extract insights, guide model design, and support real-world deployment  
- Delivered production-ready ML solutions used in commercial applications.  
- Developed an OCR system for the Persian language.
- Jun 2016 – Apr 2017     **Front Office (FO) Engineer/Data Analyst**, MTN, Tehran  
- Monitored and resolved network issues; found root causes and ensured stability  
- Applied AI-based models for issue analysis; generated professional reports and visualizations for operational insights
- Feb 2016 – Jan 2019     **Teaching & Research Assistant**, K. N. Toosi University, Tehran  
- Contributed to research projects in digital signal processing and machine learning  
- Assisted in teaching Advanced Digital Signal Processing and Digital Image Processing courses

## Technical Skills

- AI/ML:** PyTorch, TensorFlow, Computer Vision (Transformer-Based, Advanced CNNs, OpenCV), Model Optimization, Data Analysis, AI System Designing, Vision language models, Data Visualization
- LLMs & Generative AI:** LangChain, RAG pipelines, OpenAI API, Prompt Engineering, Microsoft Azure, Copilot Studio, AWS/GCP, LangGraph, n8n
- Hardware & Edge AI:** Raspberry Pi, Nvidia Jetson, Embedded Deep Learning
- Programming Languages:** Python, C/C++, MATLAB, Java, R, SQL
- DevOps & Tools:** Git, Docker, Linux, LaTeX, Google Cloud

## Complementary Skills

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**Miscellaneous:** Academic research, teaching, training, and publishing

**Languages:** English: Fluent (C1), German: Elementary (A2), Persian: Native

## Selected Publications

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- 1 [Shakibhamedan, Salar, Nima Amirafshar, Nima Taherinejad, and Axel Jantsch \(2025\)](#). “Heterogeneous Efficient Vision Models Bridging Accuracy and Energy Efficiency (Under Revision Paper-IEEE Transaction)”. In.
- 2 [Nagesh, Nitish\\*, Shakibhamedan, Salar\\*, Mahdi Bagheri, Ziyu Wang, Nima TaheriNejad, Axel Jantsch, and Amir M Rahmani \(2025\)](#). “FairTabGen: Unifying Counterfactual and Causal Fairness in Synthetic Tabular Data Generation”. In: *arXiv preprint arXiv:2508.11810*.
- 3 [Shakibhamedan, Salar, Nima Amirafshar, Ahmad Sedigh Baroughi, Hadi Shahriar Shahhoseini, and Nima Taherinejad \(2024\)](#). “ACE-CNN: Approximate Carry Disregard Multipliers for Energy-Efficient CNN-Based Image Classification”. In: *IEEE Transactions on Circuits and Systems I: Regular Papers*.
- 4 [Salar Shakibhamedan, Anice Jahanjoo, Amin Aminifar, Nima Amirafshar, Nima TaheriNejad, and Axel Jantsch \(2024\)](#). “An Analytical Approach to Enhancing DNN Efficiency and Accuracy Using Approximate Multiplication”. In: *ICML 2024 Workshop on Advancing Neural Network Training: Computational Efficiency, Scalability, and Resource Optimization (WANT@ICML 2024)*.
- 5 [Dewnant Katare\\* Salar Shakibhamedan\\*, Nima Amirafshar Nima TaheriNejad Axel Jantsch Marijn Janssen Aaron Yi Ding \(Submitted\)](#). “Approximation Strategies for Vision Models on Edge Devices: An Accuracy-Efficiency Trade-off”. In: *IEEE Transactions on Pattern Analysis and Machine Intelligence*.
- 6 [Shakibhamedan, Salar, Kooshan Hashemifard, Farhad Faradji, and Mansour Vali \(May 2016\)](#). “Persian Musical Instrument Recognition System”. In: *International Conference on New Research Achievements in Electrical and Computer Engineering*.

## Honors and Awards

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2024 **Marshall Plan Scholarship**, Vienna  
- Knowledge transfer program USA ↔ Austria (10% acceptance rate).

**KUWI Research Grant, TU Wien**, Vienna

2023 **DAC Young Fellowship Program**, San Francisco.

2019-Now **Certifications:** See LinkedIn profile for details.

## References

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Prof. Axel Jantsch **TU Wien**, Full Professor  
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Prof.Nima TaheriNejad **Heidelberg University**, Full Professor  
nima@uni-heidelberg.de