Salar Shakibhamedan

salar.shakibhamedan@tuwien.ac.at linkedin Google Scholar Website
Springergasse 27/8, 1020, Vienna, Austria +4368120284841 Permit: Rot-Weiß-Rot – Karte Plus

Education

2021 – Now **Ph.D.**, TU-Wien, Vienna
"Scalable and Efficient Optimization of Deep Learning Models for Edge AI"

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 for generating healthcare data with a focus on mitigating bias and ensuring fairness.
- Designing and adapting domain-specific LLM pipelines for structured and unstructured healthcare data using real and synthetic sources

May 2020 – Apr 2021 **Machine Learning Engineer-Data Scientist**, PART AI, Tehran
- Developed ML/DL models for commercial use cases in computer vision, speech and music applications
- Performed data preprocessing, exploratory analysis, and feature engineering to extract insights, guide model design, and support real-world deployment

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), Model Optimization, Data Analysis, Digital Signal & Image Processing
LLMs & Generative AI: LangChain, RAG pipelines, OpenAI API, Prompt Engineering
Hardware & Edge AI: Raspberry Pi, Nvidia Jetson, Embedded Deep Learning
Programming Languages: Python, C/C++, MATLAB, Java, R
DevOps & Tools: Git, Docker, Linux, LaTeX

Complementary Skills

Miscellaneous: Academic research, teaching, training, and publishing
Languages: English: Fluent (C1), German: Elementary (A2), Persian: Native

Selected Publications

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. 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*.
3. 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)*.
4. 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*.
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

2024 **Marshall Plan Scholarship**, Vienna
- Austrian funding to transfer of knowledge between USA and 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

Prof. Axel Jantsch **TU Wien**, Full Professor
axel.jantsch@tuwien.ac.at

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