

# Reza Adinepour

Department of Computer Engineering,  
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RESEARCH INTERESTS	◊ AI Hardware Accelerators ◊ Reconfigurable Computing ◊ Parallel and Distributed Systems	◊ Real-time and Embedded Systems ◊ Neuromorphic Computing ◊ Cyber-Physical Systems (CPS)
EDUCATION	<b>M.Sc. in Computer Engineering,</b> Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran ◦ Thesis: “FPGA-Based Hardware Acceleration of Remaining Useful Life Prediction of Rotating Machinery Using Transformer Neural Network” ◦ Advisor: Prof. Morteza Saheb Zamani ◦ GPA: 3.4/4	Sep. 2023 - Present
	<b>B.Sc. in Electrical Engineering,</b> Shahrood University of Technology, Shahrood, Iran ◦ Thesis: “Design Real Time Face Recognition Systems Based on LBP Features on ODROID-XU4 Embedded Computer Board” ◦ Advisor: Prof. Alireza Ahmadyfard ◦ GPA: 3.4/4	Sep. 2019 - Jun. 2023
PUBLICATIONS	◊ <b>Reza Adinepour</b> , Shayan Naghizadeh and Morteza Saheb Zamani. “Edge Deployment of Quantized Transformer Models for Remaining Useful Life Prediction” The 34th International Conference on Electrical Engineering (ICEE 2026). IEEE, 2026. (Under-Review) ◊ <b>Reza Adinepour</b> and Morteza Saheb Zamani. “Real-Time RUL Prediction via a Persistent-Weight Dual-Kernel Transformer Accelerator on FPGA” IEEE Transactions on Computers Journals. IEEE, 2026. (Under-Review) ◊ Shayan Naghizadeh, <b>Reza Adinepour</b> and Morteza Saheb Zamani. “Low-Precision POSIT Arithmetic for Spiking Neural Networks with Kahan Summation” The 11th International Conference on Signal Processing and Intelligent Systems (ICSPIS 2025). IEEE, 2025.	
RESEARCH COLLABORATIONS	◊ <b>FPGA-Based Hardware Acceleration of Vision Transformer (ViT)</b> Aug. 2024 - Jun. 2025 Research Assistant, Supervisor: Prof. Elif Bilge Kavun, Department of Computer Engineering, Dresden University of Technology. · <i>Studies and research focused on Vision Transformer hardware acceleration</i> I was conducting research on the implementation and acceleration of ViT on FPGA with the goal of Deep fake image generation.	
TEACHING EXPERIENCE	<b>Teaching Assistant</b> -Amirkabir University of Technology ◦ Digital Electronics  ◦ Embedded Systems Modeling & Design  ◦ Digital Logic Design 	Fall 2025 Spring 2025 Fall 2024
	<b>Invited Lecturer</b> -Amirkabir University of Technology ◦ Operating System Lab  ◦ Computer Architecture Lab  ◦ Logic Circuits Lab  	Fall 2025 Spring 2025 Spring 2024 and Fall 2023
	<b>Teaching Assistant</b> -Shahrood University of Technology ◦ Digital Electronics ◦ Signal and Systems ◦ Analog Electronic ◦ Circuit Theory	Spring 2023 Spring 2023, Fall 2022, Spring 2022, Fall 2021 Fall 2022 Fall 2020, Spring 2020

HONORS AND AWARDS

- ◊ Direct Admission of Master's Degree at **Amirkabir University of Technology (Tehran Polytechnic)**
- ◊ Ranked 2<sup>nd</sup> (**top 1%**) in Department of Electrical Engineering, Shahrood University of Technology, Among More Than 120 Students. 2023

NOTABLE PROJECTS

- ◊ High-Level to RTL Conversion Framework for CNN Acceleration (In Progress)
- ◊ Secure and High-Performance Firmware Architecture Customization (In Progress)
- ◊ FPGA Implementation of Logic Locking in Deep Neural Networks
- ◊ Research-Oriented SystemC Examples
- ◊ Algorithm Acceleration on HBM-PIM Architecture using PIMSimulator
- ◊ FPGA-Based Implementation of CNN Using High Level Synthesis (HLS)
- ◊ Edge Detector HW/SW Co-design on FPGA
- ◊ HLS-Based Implementation of Vision Transformer (ViT)
- ◊ FPGA-Based Implementation of Neural Network



WORK EXPERIENCE

**Member of Digital System Design Automation Laboratory**  
Tehran, Iran

*Job Description:* Research Assistant

Aug. 2023 - Present

**R&D department Member, at D3H-Group**

Al Maryah Island, Abu Dhabi, UAE

*Job Description:* Biomedical Signal Processing Developer

Jun. 2023 - Sep. 2023

**R&D department Member, at Radan Electronic StartUp**

Mashhad, Iran

*Job Description:* Embedded Software Developer

May. 2022 - Aug. 2022

SKILLS

- ◊ **Programming Languages:**
  - **Back-end:** C, C++, Rust, Java, Python, Matlab,
  - **HDLs:** VHDL, Verilog, HLS, SystemC, Nvidia CUDA, OpenMP
- ◊ **Machine Learning Tools:** PyTorch, TensorFlow, Keras, Scikit-learn, OpenCV, NumPy, Pandas
- ◊ **Applications and Scientific Tools:**
  - **FPGA/Embedded Systems Development:** Xilinx Vivado, Vitis HLS, Vitis AI, FINN, Xilinx ISE, ModelSim, IAR, Keil, CubeMX, Altium Designer, KiCad, Spice, Arduino IDE
  - **Cloud & DevOps Engineering:** Git, GitLab, Docker
  - **Scientific Computing & Research Tools:** MATLAB, Gem5
- ◊ **Operating Systems:** Linux, Microsoft Windows
- ◊ **Typesetting:**  $\text{\TeX}$ ,  $\text{\LaTeX}$ , VIM , Microsoft Word, Gnuplot

REFERENCES

**Prof. Morteza Saheb Zamani**  
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