

Reza Adinepour

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RESEARCH INTERESTS

- ◇ AI Hardware Accelerators
- ◇ Real-time and Embedded Systems
- ◇ Reconfigurable Computing
- ◇ Neuromorphic Computing
- ◇ Parallel and Distributed Systems
- ◇ Cyber-Physical Systems (CPS)

EDUCATION

- M.Sc. in Computer Engineering,** Sep. 2023 - Present
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
- B.Sc. in Electrical Engineering,** Sep. 2019 - Jun. 2023
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




PUBLICATIONS

- ◇ **Reza Adinepour**, 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)
- ◇ **Reza Adinepour** 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, **Reza Adinepour** 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

- ◇ **FPGA-Based Hardware Acceleration of Vision Transformer (ViT)** Aug. 2024 - Jun. 2025
Research Assistant, Supervisor: [Prof. Elif Bilge Kavun](#), Department of Computer Engineering, [Dresden University of Technology](#).
 - Studies and research focused on **Vision Transformer hardware acceleration**
I was conducting research on the implementation and acceleration of ViT on FPGA with the goal of Deep fake image generation.

TEACHING EXPERIENCE

- Teaching Assistant**-Amirkabir University of Technology
- **Digital Electronics**  Fall 2025
 - **Embedded Systems Modeling & Design**  Spring 2025
 - **Digital Logic Design**  Fall 2024
- Invited Lecturer**-Amirkabir University of Technology
- **Operating System Lab**  Fall 2025
 - **Computer Architecture Lab**  Spring 2025
 - **Logic Circuits Lab**   Spring 2024 and Fall 2023
- Teaching Assistant**-Shahrood University of Technology
- **Digital Electronics** Spring 2023
 - **Signal and Systems** Spring 2023, Fall 2022, Spring 2022, Fall 2021
 - **Analog Electronic** Fall 2022
 - **Circuit Theory** Fall 2020, Spring 2020

HONORS AND AWARDS	<ul style="list-style-type: none"> ◇ Direct Admission of Master's Degree at Amirkabir University of Technology (Tehran Polytechnic) ◇ Ranked 2nd (top 1%) in Department of Electrical Engineering, Shahrood University of Technology, Among More Than 120 Students. 2023 	
NOTABLE PROJECTS	<ul style="list-style-type: none"> ◇ 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	<p>Member of Digital System Design Automation Laboratory Aug. 2023 - Present Tehran, Iran <i>Job Description:</i> Research Assistant</p> <p>R&D department Member, at D3H-Group Jun. 2023 - Sep. 2023 Al Maryah Island, Abu Dhabi, UAE <i>Job Description:</i> Biomedical Signal Processing Developer</p> <p>R&D department Member, at Radan Electronic StartUp May. 2022 - Aug. 2022 Mashhad, Iran <i>Job Description:</i> Embedded Software Developer</p>	
SKILLS	<ul style="list-style-type: none"> ◇ Programming Languages: <ul style="list-style-type: none"> ◦ 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: <ul style="list-style-type: none"> ◦ 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: T_EX, L_AT_EX, VIM, Microsoft Word, Gnuplot 	
REFERENCES	<p>Prof. Morteza Saheb Zamani Professor, Dept. of Computer Engineering Amirkabir University of Technology Email: szamani@aut.ac.ir</p> <p>Prof. Hamid.R Zarandi Associate Professor, Dept. of Computer Engineering Amirkabir University of Technology Email: h_zarandi@aut.ac.ir</p>	<p>Prof. Mehdi Sedighi Professor, Dept. of Computer Engineering Amirkabir University of Technology Email: msedighi@aut.ac.ir</p> <p>Prof. Hamed Farbeh Assistant Professor, Dept. of Computer Engineering Amirkabir University of Technology Email: farbeh@aut.ac.ir</p>