

# Reza Adinepour

Department of Computer Engineering,  
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## RESEARCH INTERESTS

- ◇ AI Hardware Accelerators
- ◇ Reconfigurable Computing
- ◇ High Level Synthesis
- ◇ Real-time and Embedded Systems
- ◇ Cyber-Physical Systems (CPS)
- ◇ Neural Networks and Deep Learning

## 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

## RESEARCH COLLABORATIONS


- ◇ **FPGA-Based Hardware Acceleration of Transformer Neural Network** Aug. 2023 - Now  
**Research Assistant,** Supervisor: [Prof. Morteza Saheb Zamani](#), Department of [Computer Engineering](#), Amirkabir University of Technology.
  - *Studies and research focused on **Transformer hardware acceleration***  
I am conducting research on the implementation and acceleration of Transformer neural networks on FPGA with the goal of time series forecasting.
- ◇ **Real Time Embedded Face Recognition System** Sep. 2022 - Jun. 2023  
**Research Assistant,** Supervisor: [Prof. Alireza Ahmadyfard](#), Department of [Electrical Engineering](#), Shahrood University of Technology.
  - *Studies and research focused on **LBP Features***  
I design an embedded systems that can detect and recognition human face, based on LBP features. This algorithm implement on **Odroid** embedded computer.

## 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

- ◇ **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	◇ <b>High-Level to RTL Conversion Framework for CNN Acceleration</b>	(In Progress)
	◇ <b>Secure and High-Performance Firmware Architecture Customization</b>	(In Progress)
	◇ <b>FPGA Implementation of Logic Locking in Deep Neural Networks</b>	
	◇ <b>Research-Oriented SystemC Examples</b>	
	◇ <b>Algorithm Acceleration on HBM-PIM Architecture using PIMSimulator</b>	
	◇ <b>FPGA-Based Implementation of CNN Using High Level Synthesis (HLS)</b>	
	◇ <b>Edge Detector HW/SW Co-design on FPGA</b>	
	◇ <b>HLS-Based Implementation of Vision Transformer (ViT)</b>	
	◇ <b>FPGA-Based Implementation of Neural Network</b>	
WORK EXPERIENCE	<b>Member of Digital System Design Automation Laboratory</b> Tehran, Iran <i>Job Description:</i> Research Assistant	Aug. 2023 - Present
	<b>R&amp;D department Member, at <a href="#">D3H-Group</a></b> Al Maryah Island, Abu Dhabi, UAE <i>Job Description:</i> Biomedical Signal Processing Developer	Jun. 2023 - Sep. 2023
	<b>R&amp;D department Member, at <a href="#">Radan Electronic StartUp</a></b> Mashhad, Iran <i>Job Description:</i> Embedded Software Developer	May. 2022 - Aug. 2022
	<b>R&amp;D department Member, at <a href="#">Integrated Circuit Laboratory</a></b> Shahrood, Iran <i>Job Description:</i> Head of The Hard Ware department on OAE Project	Jun. 2021 - Sep. 2022
SKILLS	◇ <b>Programming Languages:</b> <ul style="list-style-type: none"> <li>◦ <b>Back-end:</b> C, C++, Rust, Java, Python, Matlab,</li> <li>◦ <b>HDLs:</b> VHDL, Verilog, HLS, SystemC, Nvidia CUDA, OpenMP</li> </ul> ◇ <b>Machine Learning Tools:</b> PyTorch, TensorFlow, Keras, Scikit-learn, OpenCV, NumPy, Pandas	
	◇ <b>Applications and Scientific Tools:</b> <ul style="list-style-type: none"> <li>◦ <b>FPGA/Embedded Systems Development:</b> Xilinx Vivado, Vitis HLS, Vitis AI, FINN, Xilinx ISE, ModelSim, IAR, Keil, CubeMX, Altium Designer, KiCad, Spice, Arduino IDE</li> <li>◦ <b>Cloud &amp; DevOps Engineering:</b> Git, GitLab, Docker</li> <li>◦ <b>Scientific Computing &amp; Research Tools:</b> MATLAB, Gem5</li> </ul> ◇ <b>Operating Systems:</b> Linux, Microsoft Windows         ◇ <b>Typesetting:</b> T <sub>E</sub> X, L <sup>A</sup> T <sub>E</sub> X, VIM, Microsoft Word, Gnuplot	
REFERENCES	<b>Prof. Morteza Saheb Zamani</b> Professor, Dept. of Computer Engineering Amirkabir University of Technology Email: <a href="mailto:szamani@aut.ac.ir">szamani@aut.ac.ir</a>	<b>Prof. Mehdi Sedighi</b> Professor, Dept. of Computer Engineering Amirkabir University of Technology Email: <a href="mailto:msedighi@aut.ac.ir">msedighi@aut.ac.ir</a>
	<b>Dr. Hamid.R Zarandi</b> Associate Professor, Dept. of Computer Engineering Amirkabir University of Technology Email: <a href="mailto:h_zarandi@aut.ac.ir">h_zarandi@aut.ac.ir</a>	<b>Dr. Hamed Farbeh</b> Assistant Professor, Dept. of Computer Engineering Amirkabir University of Technology Email: <a href="mailto:hfarbeh@aut.ac.ir">hfarbeh@aut.ac.ir</a>