

# Reza Adinepour

Department of Computer Engineering,  
Tehran Polytechnic,  
Tehran, Iran

Homepage: <https://rezaadinepour.github.io/>  
E-mail: [adinepour@aut.ac.ir](mailto:adinepour@aut.ac.ir)  
Cell Phone: +98 (935) 470 5561

## RESEARCH INTERESTS

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

## EDUCATION

**M.Sc. in Computer Engineering,** Sept. 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](#)

**B.Sc. in Electrical Engineering,** Sept. 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 Ahmadifard](#)
- GPA: 3.28/4
- GPA of Last 1 Years: 3.43/4 (32 credits)

**Diploma in Mathematics and Physics Discipline,** Sept. 2015 - May. 2019  
**Seyyed Ahmad Khomeini High School,** Mashhad, Iran

- Diploma GPA: 3.66/4

## ATTENDED CONFERENCES


- ◇ *The Annual Conference on Prospects of Electrical Engineering* ([ReACT2023](#))
- ◇ *The Annual Conference on Prospects of Electrical Engineering* ([ReACT2022](#))
- ◇ *5th Iranian Conference on Communications Engineering* ([ICCE2021](#))
- ◇ *The Annual Conference on Prospects of Electrical Engineering* ([ReACT2021](#))
- ◇ *Amirkabir University of Technology Robotics Summer School* ([AUTSS2021](#))

## 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 Ahmadifard](#), 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 Logic Design** 

Fall 2024

	<b>Invited Lecturer</b> -Amirkabir University of Technology <ul style="list-style-type: none"> <li>◦ <b>Logic Circuits Lab</b> </li> <li>◦ <b>Logic Circuits Lab</b> </li> </ul>	Spring 2024 Fall 2023
	<b>Teaching Assistant</b> -Shahrood University of Technology <ul style="list-style-type: none"> <li>◦ <b>Digital Electronics</b></li> <li>◦ <b>Signal and Systems</b></li> <li>◦ <b>Analog Electronic</b></li> <li>◦ <b>Circuit Theory</b></li> </ul>	Spring 2023 Spring 2023, Fall 2022, Spring 2022, Fall 2021 Fall 2022 Fall 2020, Spring 2020
	<b>Tutor</b> -Shahrood, Iran <ul style="list-style-type: none"> <li>◦ <b>Private Altium Designer Tutor</b></li> </ul>	Apr. 2023 - Aug. 2023
	<b>Tutor</b> -Mashhad, Iran <ul style="list-style-type: none"> <li>◦ <b>Private Python Programming Tutor</b></li> <li>◦ <b>Private MATLAB Programming Tutor</b></li> <li>◦ <b>Private C and C++ Programming Tutor</b></li> </ul>	2021 - Jan. 2022 2021 - Jan. 2022 2020 - Jan. 2022
HONORS AND AWARDS	<ul style="list-style-type: none"> <li>◊ <b>Direct Admission</b> of Master's Degree at <b>Amirkabir University of Technology (Tehran Polytechnic)</b></li> <li>◊ <b>Ranked 2<sup>nd</sup> (top 1%)</b> in Department of Electrical Engineering, Shahrood University of Technology, <b>Among More Than 120 Students.</b></li> <li>◊ <b>Chief of Student Scientific Association</b> of Electrical Engineering</li> </ul>	 2023 2022
NOTABLE PROJECTS	<ul style="list-style-type: none"> <li>◊ <b>FPGA-Based Implementation of CNN Using High Level Synthesis (HLS)</b></li> <li>◊ <b>Edge Detector HW/SW Co-design on FPGA</b></li> <li>◊ <b>HLS-Based Implementation of Vision Transformer (ViT)</b></li> <li>◊ <b>FPGA-Based Implementation of Neural Network</b></li> <li>◊ <b>QRS Complex Detection in ECG Signals</b></li> <li>◊ <b>Design Real Time Face Recognition Systems Based on LBP Features on ODROID Embedded Computer Board</b></li> <li>Bachelor Thesis, Shahrood University of Technology, Shahrood, Iran</li> <li>◊ <b>Real Time Object Detection Using YOLO Network</b></li> <li>Course Project for Neural Networks, Shahrood University of Technology, Shahrood, Iran</li> <li>◊ <b>Real Time Face Mask Detection Using MobileNetV2</b></li> <li>Course Project for Neural Networks, Shahrood University of Technology, Shahrood, Iran</li> <li>◊ <b>Persian Handwritten Digit Recognition Using MLP</b></li> <li>Course Project for Neural Networks, Shahrood University of Technology, Shahrood, Iran</li> <li>◊ <b>SDI Based Fire Detection Application</b></li> <li>Course Project for Advanced Programming in C++, Shahrood University of Technology, Shahrood, Iran</li> <li>◊ <b>Car Tracking Using C++ &amp; OpenCV</b></li> <li>Course Project for Advanced Programming in C++, Shahrood University of Technology, Shahrood, Iran</li> <li>◊ <b>Object Tracking Using Python &amp; OpenCV</b></li> <li>◊ <b>Real Time Face Recognition Using Python &amp; <i>Face Recognition Lib</i></b></li> <li>◊ <b>Vehicles Counting on Images Using YOLO</b></li> <li>◊ <b>License Plate Recognition Using Python &amp; OpenCV</b></li> </ul>	                          

◇ Real Time Color Recognition Using Python & OpenCV



◇ Design and Implementation of Mano Basic Computer Using VHDL

## WORK EXPERIENCE

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

Aug. 2023 - Present

*Job Description:* Research Assistant

**R&D department Member, at [D3H-Group](#)**

Jun. 2023 - Sep. 2023

Al Maryah Island, Abu Dhabi, UAE

*Job Description:* Biomedical Signal Processing Developer

**R&D department Member, at [Radan Electronic StartUp](#)**

May. 2022 - Aug. 2022

Mashhad, Iran

*Job Description:* Embedded Software Developer

**R&D department Member, at [Integrated Circuit Laboratory](#)**

Jun. 2021 - Sep. 2022

Shahrood, Iran

*Job Description:* Head of The Hard Ware department on OAE Project

## SKILLS

- ◇ **Programming Languages:** C, C++, Python, Matlab, VHDL, Verilog HDL, HLS
- ◇ **Machine Learning Tools:** PyTorch, TensorFlow, Keras, Scikit-learn, OpenCV, NumPy, Pandas
- ◇ **Applications and Scientific Tools:** Xilinx Vivado, Vitis HLS, Vitis AI, FINN, Xilinx ISE, Gem5, Matlab, IAR, Keil, CubeMX, CodeVision AVR, ModelSim, Altium Designer, KiCad, ADS, Spice, Proteus, Atmel Studio, Arduino IDE, Microsoft Visual Studio, Git, JetBrains Pycharm & Clion
- ◇ **Operating Systems:** Linux, Microsoft Windows
- ◇ **Typesetting:** T<sub>E</sub>X, L<sup>A</sup>T<sub>E</sub>X, VIM, Microsoft Word, Gnuplot

## LANGUAGES

- ◇ **Persian:** Native Language
- ◇ **English:** Intermediate Listener, Novice Speaker, Advanced Reading and Writing

## HOBBIES

- ◇ **Adventure:** Hiking, Hitchhiking, Camping
- ◇ **Art:** Guitarist
- ◇ **Other Hobbies:** Classic Music, Freelance Blog Writer, Reading  
I love the feeling of sharing my experiences with others through my blog.