

NEGAR NEDA

School of Electrical & Computer Engineering, University of Tehran, 16th Azar St, Enghelab Sq., Tehran, Iran

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EDUCATION

- **University of Tehran (UT), Tehran, Iran,** Sep. 2018 - present
M.Sc. in Computer Architecture
Cumulative GPA: **17.3/20 (3.53/4)**¹
Thesis: FPGA-based Multi-precision Accelerator for Deep Neural Networks
- **Amirkabir University of Technology (AUT), Tehran, Iran** Sep. 2014 - Sep. 2018
B.Sc. in Computer Engineering, Computer Architecture Systems
GPA (last 3 semesters): **17.81/20 (3.74/4)**
Cumulative GPA: **17.2/20 (3.52/4)**²
Thesis: Implementation of a Tracking System Using LoRaWAN Protocol
- **National Organization for Development of Exceptional Talents (NODET), Birjand, Iran**
Diploma, Mathematics and Physics Sep. 2010 - Jun 2014
Cumulative GPA: **19.68/20**

RESEARCH INTERESTS

- Hardware Accelerators
- Reconfigurable Computing
- Embedded Systems
- FPGA
- Deep Neural Networks
- Approximate Computing

RESEARCH EXPERIENCES

- **Research Assistant in Network on Chip Laboratory,** University of Tehran 2018 - present
Supervised by [Dr. Mehdi Modarressi](#)

In this laboratory, I am working on the implementation of an FPGA based multi-precision accelerator for deep neural networks. This architecture is able to change the working bit-width dynamically according to the minimum bit-width required to preserve the original accuracy. The multipliers and bit-width adaption mechanisms are optimized for the LUT-based structure of FPGAs.

- **Researcher in IoT Lab,** Amirkabir University of Technology 2018
Supervised by Dr. Mehdi Rasti

In this laboratory, I worked on designing a portable Tracking System using ADXL335, NEO-6m and LoRaWAN protocol as my B.Sc thesis.

- **Researcher in Digital System Design Lab,** Amirkabir University of Technology 2017 - 2018
Supervised by [Dr.Mahmoud Momtazpour](#) and [Dr.Morteza Sahebzamani](#)

In this laboratory, we were working on the Amirkabir University of Technology IoT Gateway Project.

TEACHING EXPERIENCES

- **Teaching Assistant,** Computer-Aided Digital Course, Dr. Mehdi Modarressi 2019
- **Lab Instructor,** Logic Circuit Laboratory Course 2018
- **Teaching Assistant,** Computer Networks Course, Dr. Siavash Khorsandi 2017
- **Teaching Assistant,** Digital Design Automation Course, Dr. Morteza Sahebzamani 2017
- **Teaching Assistant,** Electrical Circuit1 Course, Dr. Siavash Khorsandi 2016
- **Teaching Assistant,** Logic Circuits Course, Dr. Mehdi Sedighi 2016

¹Selected Courses GPA: 18.23/20(4/4): Neural Networks 17.7, Computer Arithmetics 19.06, Chip Multiprocessor 19, Advanced Computer Architecture 17.17, Fault-Tolerant Systems 18.7, Interconnection Networks 19.3

²Computer Architecture related courses' GPA: 18.61/20(4/4): Logic Circuits 18.4, Computer Architecture 17.54, Electronic Circuits 19.54, Computer-Aided Digital System Design 18, Digital Electronics 17.2, Operating System Design 19.2, VLSI Systems Design 18.8, Engineering Mathematics 19.5, Embedded & Real-Time Systems 19, Data Communications 19

HONOR & AWARDS

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| Ranked Top 3 in term of GPA , among Computer Architecture Students in AUT | 2019 |
| Eligible to study in two fields simultaneously | 2015 |
| Ranked top 0.6% out of 222,500, Nationwide University Entrance Exam, Mathematics | 2014 |

NOTABLE PROJECTS

- **Utilize OpenMp & CUDA to speed up CNN inference**, (MultiCore Embedded Systems) 2020
- **Forecasting the number of taxi requests by RNN**, (Deep Neural Networks) 2019
- **Image Template Matching with CUDA**, Implemented the Template Matching algorithm in CUDA & OpenMp, on a dataset of coin/face images. (Multi-Core Programming Course) 2018
- **Temperature controller**, using Wi-Fi development board (WEMOS D1) and LM35 to measure the room temperature and transfer to Android-Smartphone, (Computer Interface Design) 2018
- **Implementing various projects on FRDM-KL25Z board**, (Embedded Systems) 2018
- **Implementing a home environment controller**, Co-design of a system including lighting control, temperature control and voice recognition using Xilinx MicroBlaze Soft Processor Core 2017
- **Implementing a 16*4 SRAM**, and 2:4 address decoder using HSpice (Digital Electronics) 2016
- **Implementing an Engineering Calculator**, using CORDIC IP Core 2016
- **Implementing a Basic Computer, Cache and RAM**, by VHDL (Computer Architecture) 2016
- **Implementing Robo Kill game**, using JAVA (Advanced Programming) 2015

ONLINE COURSES

- **"Convolutional Neural Networks"** **Certificate** - Online Course by deeplearning.ai on coursera.org 2020
- **"Neural Networks and Deep Learning"** **Certificate** - Online Course by deeplearning.ai on coursera.org 2019
- **"Improving Deep Neural Networks: Hyperparameter tuning, Regularization, and Optimization"** **Certificate** - Online Course by deeplearning.ai on coursera.org 2019

ATTENDED WORKSHOPS

- **Third IPM³ Advanced School on Computing**, Computer Architecture 2019
- **8th IPM-HPC Workshop** on Multi-core Systems and Parallel Platforms 2019
- **Introduction to FPGA Workshop**, Co-design and hardware implementation, held in AUT 2016

TECHNICAL SKILLS

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| <ul style="list-style-type: none">• Programming: VHDL, Verilog, Co-Design, Python(Keras, Tensorflow, PyTorch), CUDA, OpenMP, C/C++, Java, Assembly• Frameworks: & Scientific Tools: Visual Studio, Qt, MATLAB, Arduino IDE• Typesetting Tools: L^AT_EX, Microsoft office | <ul style="list-style-type: none">• Hardware CAD Tools: Vivado Design Suite, Xilinx ISE Design Suite, PSPICE, HSPICE, Modelsim, Proteus, Keil• Operating Systems: Microsoft Windows, Linux• Language: Persian (Native), English (Fluent) |
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³Institute for Research in Fundamental Sciences