

# NEGAR NEDA

School of Electrical & Computer Engineering, University of Tehran, 16th Azar St, Enghelab Sq., Tehran, Iran  
(+98)9155353543 ◊ negar.neda@ut.ac.ir ◊ ne.neda74@gmail.com ◊ NegarNd.github.io

## EDUCATION

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- University of Tehran, Tehran, Iran,** Sep. 2018 - present  
Master of Science, Computer Architecture  
Cumulative GPA: **17.3/20 (3.53/4)**<sup>1</sup>
- Amirkabir University of Technology, Tehran, Iran** Sep. 2014 - Sep. 2018  
Bachelor of Science, Computer Engineering, Computer Architecture Systems  
Thesis: Implementation of a Tracking System Using LoRaWAN Protocol  
GPA (last 3 semesters): **17.81/20 (3.74/4)**  
Total GPA: **17.2/20 (3.52/4)**<sup>2</sup>
- 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

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

## RESEARCH EXPERIENCES

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- **Network on Chip Laboratory, University of Tehran,** Research Assistant Sep. 2018 - present  
Supervised by Dr. Mehdi Modarressi  
  
Network on Chip Laboratory research is focused primarily on the exploration of high-performance and low-power computer architectures with a current emphasis on highly parallel computer architectures, interconnection networks, and in-memory processing. In this Laboratory, I'm working on a FPGA based, multi-precision accelerator for deep neural networks using approximate multipliers based on FPGA LUTs.
- **Digital System Design Lab, Amirkabir University of Technology,** Researcher 2017 - 2018  
Supervised by Dr. Mahmoud Momtazpour and Dr. Morteza Sahebzamani  
  
Working on Amirkabir University of Technology IoT Gateway Project.

## HONOR & AWARDS

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- Ranked Top 3 in term of GPA**, among students in the field of Computer Architecture in Amirkabir University of Technology 2019
- Eligible** to study in two fields simultaneously because of top GPA 2015
- Ranked top 0.6%**, Nationwide University Entrance Exam, Among Approximately 222,500 Participants in Mathematics and Physics Field 2014

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<sup>1</sup>Selected 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

<sup>2</sup>Computer 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

## FURTHER QUALIFICATIONS

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**Programming:** VHDL, Verilog, Co-Design, Python(Keras, Tensorflow, pyTorch), CUDA, OpenMP, C/C++, Java, Assembly

**Frameworks & Scientific Tools:** Visual Studio, Qt, MATLAB, Arduino IDE

**Hardware CAD Tools:** Vivado Design Suite, Xilinx ISE Design Suite, PSPICE, HSPICE, Modelsim, Proteus, Keil

**Operating Systems:** Microsoft Windows, Linux

**Typesetting Tools:** L<sup>A</sup>T<sub>E</sub>X, Microsoft office (Word, Powerpoint, Excel, Visio)

**Languages:** Persian: Native, English: Fluent

## PRACTICAL EXPERIENCES

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- **"Convolutional Neural Networks" Certificate**, Online Course by deeplearning.ai 2020
- **"Neural Networks and Deep Learning" Certificate**, Online Course by deeplearning.ai 2019
- **"Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization" Certificate**, Online Course by deeplearning.ai 2019
- **Third IPM<sup>3</sup> Advanced School on Computing**, Computer Architecture 2019
- **8th IPM-HPC Workshop** on Multi-core Systems and Parallel Platforms 2019
- **Introduction to FPGA**, Co-design and hardware implementation 2016  
Amirkabir University of Technology
- **Teaching Assistant**, Computer Aided Digital, Under Supervision of Dr. Mehdi Modarressi 2019
- **Lab Instructor**, Logic Circuit Lab 2018
- **Teaching Assistant**, Computer Networks, Under Supervision of Dr. Siavash Khorsandi 2017
- **Teaching Assistant**, Digital Design Automation, Under Supervision of Dr. Morteza - Sahebzamani 2017
- **Teaching Assistant**, Electrical Circuit1, Under Supervision of Dr. Siavash Khorsandi 2016
- **Teaching Assistant**, Logic Circuits, Under Supervision of Dr. Mehdi Sedighi 2016

## NOTABLE COURSE PROJECTS

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- **Utilize OpenMp & CUDA to speed up CNN inference**, (MultiCore Embedded Systems) 2020
- **Forecast the number of taxi requests by RNN**, (Deep Neural Networks) 2019
- **Template Matching using OpenMP & CUDA**, (Multi-Core Programming) 2018
- **Temperature controller**, using Bluetooth module and Arduino (Computer Interface Design) 2018
- **Implementation of various projects for FRDM-KL25Z board**, (Embedded Systems) 2018
- **Implementation of a home environment controller**, using VHDL and Co-Design (Digital Design Automation) 2017
- **Implementation of SRAM**, using HSpice (Digital Electronics) 2016
- **Implementation of an Engineering Calculator**, using CORDIC IP Core 2016
- **Implementation of a Basic Computer, Cache and RAM**, using VHDL (Computer Architecture) 2016
- **Implementation of Robo Kill game**, using JAVA (Advanced Programming) 2015

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<sup>3</sup>Institute for Research in Fundamental Sciences