Amin Naghavi

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Career Interests

- Verilog FPGA Programming
- Embedded Systems programming (ARM/AVR)
- Phyton Developer
- Java Backend Developer
- C++ Programming in Linux
- PHP Web Programming

Professional Skills

Programming and Scripting Languages	Advanced in MATLAB, Python, C/C++, Java Familiar with Qt, Maple, Bash Scripting, Assembly (CORTEX-M3, and ATMEGA32)
Web developing	PHP, HTML5, CSS, JavaScript, Spring FW, Hibernate, JSF, MySQL, PostgreSQL
Deep Learning Frameworks	Café, MatConvNet
HDL Language	Verilog: Advanced
Simulation tools	GEM5, McPAT, Design Compiler, HSpice, SoC Encounter, Modelsim, Orcade, Quartus, Xilinx ISE, Proteus
Hardwares	AVR Microcontrollers, ARM Microcontrollers, FPGA Boards, Raspberrypi, Arduino
Operating Systems	Windows, Linux

Education

2017-present **Master of Science:** Computer Engineering, Computer Architecture
GPA: (17.87/20)
Sharif University of Technology—Tehran, Iran

2013-2017 **Bachelor of Science:** Computer Engineering, Hardware Engineering
GPA: (17.40/20)
Isfahan University of Technology—Isfahan, Iran

2009-2013 **High School Diploma:** Mathematics and Physics Discipline
GPA: (19.05/20),
Shahid Beheshti School (National Organization for Development of Exceptional Talents) —Borujerd, Iran

Academic Awards and Distinctions

2016-2017 • **Ranked 1st among 21 bachelor students** of Hardware Engineering and 2nd among 39 students of Computer Engineering Department in Isfahan University of Technology.

Sept. 2017 • **Admitted as an Exceptional Talent** at Sharif University of Technology for Master of Science programs.

Sept. 2019 • **Eligible for applying to continue my education in the Ph.D. program** at the department of Computer Engineering of Sharif University of Technology.

2011 • **Awarded** in Provincial Mathematical Olympiad (Lorestan, Iran).

Notable Courses Projects

Bachelor of Science Project1
Object tracker robot, *Under Supervision of Dr. Maziyar Palhang*
A tracker robot has been made that could track colorful objects and detect people's faces. The robot could send its camera's data lively to the user interface which is designed for PCs and smartphones.

Interface Circuit Designs
Online RFID authentication, *Under Supervision of Dr. Majid Nabi*
An online authentication device has been made using RFID tags and a web server. The ID of the tag is sent to the web server using GPRS where the server processes requests and sent back data to the device.

Advanced VLSI
Analyzing area, power, and delay in a VLSI design, *Under Supervision of Dr. Somayyeh Koohi*
A design was implemented in RTL (Verilog) and transistor-level (HSPICE) then synthesized based on area, power, and delay constraints by Design Compiler and the final layout was obtained using SoC Encounter.

Interconnection Networks
Implementing Duato routing algorithm for k-ary n-cube networks, *Under Supervision of Dr. Sarbazi-Azad*
Developing Booksim2 simulator by updating its source code to provide it with Duato routing algorithm for k-ary n-cube networks.

On-Chip Communication
Proposing an aging aware routing for NoCs, *Under Supervision of Dr. Somayyeh Koohi*
A thorough research on existing aging aware routing methods has been conducted, and a novel method to address aging in mesh networks have been proposed.

Advanced Computer Architecture
Accelerating an image processing application, *Under Supervision of Dr. Amir Hossein Jahangir*
In this project, we have accelerated an application by different methods such as code optimization, parallel programming, SIMD, using multicore, and multiprocessor.

Special Topics in Computer
Designing an online marketing website, *Under Supervision of Dr. Amin Ghalami*
A shopping website have been designed using Java Spring Framework, Hibernate, and JSF which provides different facilities for clients and vendors and keeps tracks of items, users, and transactions.

Advanced programming
Designing Super Mario game using SDL game engine, *Under Supervision of Dr. Ali Shalbaf-Zadeh*
In this project, the super Mario game have been designed using C++ and SDL game engine.

Publications

- Sepideh Safari, Amin Naghavi, and Shaahin Hessabi. **"Tolerating Permanent Faults with Low Energy Overhead in Multicore Mixed-Criticality Systems"** (2020) (Submitted to Transaction on Parallel and Distributed Systems)

Research Experience

Master of Science Thesis
Sep. 2017-present
Reliability Aware Energy Management for Mixed-Criticality Systems on Multi-Cores,
Under Supervision of Dr. Shaahin Hessabi, *Sharif University of Technology*—Tehran, Iran
Employing semi-partitioned scheduling with the standby-sparing method to tolerate permanent faults with little energy overhead and negligible loss of quality of service for sporadic Mixed-Criticality task model.

Bachelor of Science Thesis
Jan. 2017-Sep. 2017
Methods for recognizing objects in pictures using semantic segmentation,
Under Supervision of Dr. Shadrokh Samavi, Isfahan University of Technology—Tehran, Iran
Implementing two semantic segmentation methods (SegNet and Matconvnet-fcn) with two deep learning frameworks (Café and Matconvnet). Tutoring the two neural networks and assessing each method.

Internship and Work Experience

Jun. 2017-Agu. 2017
Internship at support and services of Bank Melli Iran (SADAD Informatics corp.) *—Borujerd, Iran*
Under Supervision of Dr. Shadrokh Samavi —Isfahan, Iran

Jul 2015-Sep. 2015
Designing a gaming website using PHP and JavaScript *—Borujerd, Iran*

Language Skills

Farsi (persian) Native

English Toefl iBT (Nov. 2019): 107/120

Reading: 28/30 Listening: 30/30 Speaking: 24/30 Writing: 25/30

Selected Courses

Undergraduate Courses		Graduate Courses	
Data Structure	20/20	On Chip Communication	19.3/20
Electronics	19.2/20	Advanced Computer Architecture	17.1/20
Microcontroller	20/20	Hardware Security and Trust	17.8/20
Embedded Systems	20/20	System on Chip Design	20/20
Robotic and Automation	19.65/20	Advanced VLSI Design	16.9/20
VLSI Design	20/20	M.Cs. Seminar	19.8/20
Statistics Mathematics	19.4/20	Fault-Tolerant System Design	17.8/20

Teaching Experience

Winter 2019 **Teaching Assistant** of "System on Chip", Under supervision of Dr. Shaahin Hessabi
Sharif University of Technology—Tehran, Iran

Summer 2018 **Lab Instructor** of "Logic Circuits Lab", Under supervision of Dr. Alireza Ejlali
Sharif University of Technology—Tehran, Iran

Winter 2019 **Lab Instructor** of "Digital System Design Lab", Under supervision of Dr. Alireza Ejlali
Sharif University of Technology—Tehran, Iran

Summer 2019 **Lab Instructor** of "Digital System Design Lab", Under supervision of Dr. Alireza Ejlali
Sharif University of Technology—Tehran, Iran

Fall 2019 **Lab Instructor** of "Digital System Design Lab", Under supervision of Dr. Alireza Ejlali
Sharif University of Technology—Tehran, Iran

Extracurricular Activities

Sports Mountaineering, Mountain biking, Swimming, Judo (Awarded), Chess (Awarded)

Arts Professional photography (awarded in two photography competitions in Borujerd, Iran)

References

Dr. Shaahin Hessabi: Computer Engineering Faculty of Sharif University of Technology—Tehran, Iran
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Dr. Shadrokh Samavi: Computer Engineering Faculty of Isfahan University of Technology—Isfahan, Iran
Professor, PhD, University of Michigan—Ann Arbor, USA
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Dr. Alireza Ejlali: Computer Engineering Faculty of Sharif University of Technology—Tehran, Iran
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