Mahshid Shahmohammadian

Drexel University – Department of Computer Science
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Education

Drexel University **Philadelphia, PA**
Ph. D. in Computer Science, GPA: 3.82 out of 4.0 *Fall 2016 - Present*
Advisor: Geoffrey Mainland

Amirkabir University of Technology **Tehran, Iran**
Bachelor of Science in Computer Engineering *Fall 2010 - Spring 2015*
Advisor: Hamidreza Zarandi

Research Experience

High-level Hardware Design of Wireless Systems
Graduate Research *Fall 2016 - Present*
Multiple components from Simulink model of OFDM PHY pipeline are developed both in hand-written VHDL and high-level functional hardware description language. These modules are synthesized to Virtex 7 FPGA to compare and express the efficient performance results of the high-level design.

An Algorithm for Injecting Soft Errors into Integrated Circuits
B. S. Thesis Project *Winter 2015 - Spring 2015*
An algorithm injecting multiple event transient in digital circuits, particularly NoC circuits, after synthesis and placement using Design Compiler, Modelsim and ATLAS simulator

Internship and Teaching Experience

Maxlinear Inc. **Carlsbad, CA**
Full-time ASIC Design Intern *Jun 2019 - Sep 2019*
Optimizing power consumption of optical receiver equalizer filters, designing an FIR filter in Verilog and SystemVerilog which was tested against an equivalent reference model, synthesis netlist and gate-level simulation lead to power consumption estimations with certain stimulus window

Drexel University **Philadelphia, PA**
Teaching Assistant *Sep 2016 - Dec 2016*
System Architecture Course

Iran Telecommunication Company **Tehran, Iran**
Full-time Intern *Jun 2015 - Aug 2015*
Communication and information technology research

Technical Skills

Engineering Softwares: Vivado/ISE Xilinx, MATLAB/Simulink/System Generator, Xcelium Simulator/ SimVision/ModelSim, Genus Synthesis/Design Compiler/SoC Encounter, Joules RTL Power, PSpice/Orcad

Programming Languages: VHDL/Verilog/SystemVerilog, C/C++, Python, TCL/Shell, Java, Haskell

Operating Systems: Linux, MacOS, Windows

Publications

M. Shahmohammadian and G. Mainland. Synthesizing efficient hardware from high-level functional hardware description languages. In *2019 26th IEEE International Conference on Electronics, Circuits and Systems (ICECS)*, pages 634–637, Nov 2019

Honors

Upsilon Pi Epsilon, the International Honor Society for Computing and Information Disciplines: Elected by Drexel University Chapter

Grace Hopper Celebration: GHC'17 AnitaB. Scholar and GHC'19 Speaker in Computer Architecture and Hardware Engineering Poster Session

Selected Course and Collaboration Projects

Advanced Computer Architecture Course
A reinforcement learning-based cache replacement policy for an eDRAM-PCM hybrid memory *Spring 2019*
Python and C++

Machine Learning Course
A music recommendation system using multiple collaborative filtering algorithms *Winter 2019*
MATLAB

Operating Systems Course
Virtual memory manager as well as command-line shell interpreter for UNIX OS *Winter 2018*
C and C++

Artificial Intelligence Course
Implementing reinforcement learning for a radio agent to select transmitting bandwidth *Fall 2018*
Python

Artificial Intelligence Course
Bayesian sentiment classifier of online customer reviews *Fall 2017*
Python

Collaborative Intelligent Radio Networks Course
An intelligent collaborative radio agent, competing with other teams *Spring 2017*
Python and MATLAB

Micro-controller Course
Implementing USB into AVR micro-controller using CodeVision *Fall 2014*

Computer Architecture Course
A base computer using ISE Xilinx synthesizing the design to Spartan 6 FPGA *Winter 2013*
VHDL

Logic Design Course
Logic circuit for Tic-Tac-Toe game using Proteus and ModelSim *Fall 2011*
Verilog

Relevent Courses

Logic Design, Computer Architecture, VLSI Design, Electric Circuits, Electronic Circuits, Advanced Computer Architecture, Signals and Systems, Linear Control Systems, Collaborative Intelligent Radio Networks, Artificial Intelligence, Machine Learning

Language

English: Fluent

Persian: Native