

Shahin Roozkhosh

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- RESEARCH INTERESTS
- ◇ Cyber-Physical Systems(CPS)
 - ◇ partially-Reconfigurable Platforms
 - ◇ Multi-core and Many-core Architectures
 - ◇ Parallel and Distributed Systems
 - ◇ Embedded Systems
- EDUCATION
- Ph.D. in Computer Science,** Sept. 2018 - Now
Boston University, Boston, MA, USA
- Thesis: “*Software Defined Platforms on Reconfigurable Cyber-Physical Systems*”
 - Advisor: [Prof. Renato Mancuso](#)
- B.Sc. in Computer Hardware Engineering,** Sept. 2012 - Jan. 2018
Sharif University of Technology, Tehran, Iran
- Thesis: “*Effective Cache Bank Placement for GPUs*”
 - Advisor: [Prof. Hamid Sarbazi-Azad](#)
- Diploma in Mathematics and Physics Discipline,** Sept. 2008 - Jun. 2012
Shahid Dastgheib High School, Shiraz, Iran
- Affiliated with the National Organization for Development of Exceptional Talents (NODET).
- PUBLICATIONS
- ◇ Sadrosadati, Mohammad, Ramin Bashizade, **Shahin Roozkhosh**, Ali Shafiee, and Hamid Sarbazi-Azad. “*A Method to Improve Adaptivity of Odd-Even Routing Algorithm in Mesh NoCs.*” In Parallel, Distributed, and Network-Based Processing (**PDP**), 2016 24th Euromicro International Conference on, pp. 755-758. IEEE, 2016.
 - ◇ Sadrosadati, Mohammad, Amirhossein Mirhosseini, **Shahin Roozkhosh**, Hazhir Bakhishi, and Hamid Sarbazi-Azad. “*Effective Cache Bank Placement for GPUs*” In 2017 Design, Automation Test in Europe Conference Exhibition (**DATE**), pp. 31-36. IEEE, 2017.
- ATTENDED CONFERENCES
- ◇ 1st International Conference on Topics In Theoretical Computer Science (**TTCS**), 2017, Tehran, Iran
 - ◇ 39th IEEE Real-Time Systems Symposium(**RTSS**), Nashville, TN, USA
- RESEARCH EXPERIENCE
- ◇ **Second Reviewer for (**RTAS**) 2019 Conference.** Nov. 2018
 - ◇ **The Institute for Research in Fundamental Sciences (**IPM**)** Jun. 2013 - Jan. 2018
Research Assistant, Supervisor: [Prof. Hamid Sarbazi-Azad](#), [School of Computer Science](#)
Advisor: [Dr. Arash Tavakkol](#) and [Mohammad Sadrosadati](#)
 - *Studies and research focused on **SSDs***
We proposed a **Performance Evaluation of Dynamic Page Allocation Strategies in SSDs**.
Corresponding Paper Published in ACM Transactions on Modeling and Performance Evaluation of Computing Systems (**TOMPECS**)
 - *Technical assistant in implementation of **XMulator***
Xmulator is an object-oriented event-based simulator software for interconnection networks and wireless networks. I contributed to the packages required for Network-on-Chip (NoCS) simulation. Xmulator uses Orion power library for power and energy estimation.

- *Extension and improvement in [DiskSim](#).*

DiskSim is an efficient, accurate, highly-configurable disk system simulator which includes modules for most secondary storage components of interest, including device drivers, buses, controllers, adapters, and disk drives.

- ◇ **High-Performance Computing Architectures and Networks,** Jun. 2013 - Jan. 2018
HPCAN Laboratory

Research Assistant, Supervisor: [Prof. Hamid Sarbazi-Azad](#), Department of [Computer Engineering](#), Sharif University of Technology.

- *Studies and research focused on **GPUs***

The placement of the Last Level Cache (LLC) banks in the GPU on-chip network can significantly affect the performance of memory-intensive workloads. We attempt to offer a placement methodology for the LLC banks to maximize the performance of the on-chip network connecting the LLC banks to the streaming multiprocessors in GPUs.

- *Extension and improvement in [GPGPU-Sim](#).*

GPGPU-Sim provides a detailed simulation model of a contemporary GPU (such as NVIDIA's Fermi and GT200 architectures) running CUDA and/or OpenCL workloads and now includes an integrated (and validated) energy model, [GPUWatch](#).

- *Implementation of a **Genetic algorithm based, intermediate Software***

The software was linked to GPGPU-Sim to process all data collected from previous simulations automatically and lead us to find a new throughput aware metric in The placement of the Last Level Cache (LLC) banks in the GPU on-chip network.

Genetic Algorithm (GA) is a metaheuristic inspired by the process of natural selection that belongs to the larger class of evolutionary algorithms (EA).

- *Studies and research on **NoCs** focused on **Routing Algorithms***

We figured a novel approach, called Preemptive Waiting, which applied to Odd-Even routing algorithm (PWOE). PWOE postpones the saturation traffic rate of NoC compared to OE, under synthetic traffic loads.

[BookSim](#) which is a cycle-accurate simulator developed in C++ was as our Simulation Environment.

TEACHING
EXPERIENCE

Teaching Fellow-Boston University

- [Embedded Systems Development](#)

Spring 2019

Teaching Assistant-Sharif University of Technology

- **Digital System Design**
- **Automata and Compiler**
- **Computer Structure and Language**
- **Discrete Structures**
- **Logic Design**
- **Computer Architecture**
- **Advanced Programming**
- **Fundamentals of Programming**

Fall 2015

Spring 2015

Fall 2015

Fall 2015

Fall 2014

Fall 2014

Fall 2013

Fall 2013, Spring 2013

Tutor-Tehran, Iran

- **Private C and C++ Programming Tutor**
- **Private English Tutor**

2013 - Jan. 2018

2016 - Jan. 2018

HONORS AND
AWARDS

- ◇ **Ranked 285th (top 0.1%) in the National University Entrance Examination,** 2012
Among more than 380,000 participants, Iran
- ◇ Member of National Organization for Development of Exceptional Talents ([NODET](#)) 2005 - 2012
- ◇ **Selected to study in [Shahid Dastgheib High school](#),** Sept. 2008

Through an exam with less than 1% acceptance rate.

- ◇ Semifinalist in 27th, 28th, 29th [Iranian National Olympiad in Mathematics](#) 2009, 2010, 2011
- ◇ Semifinalist in 19th and 20th [Iranian National Olympiad in Informatics \(INOI\)](#) 2009, 2010

NOTABLE PROJECTS

- ◇ **Implementation of Multiple Face Detection in Real-Time**
Top mark project in the course of Fundamentals of Programming, Sharif University of Technology, Tehran, Iran
- ◇ **Implementation of a Graphical Strategic Game using QT Framework**
Top mark project in the course of Advanced Programming, Sharif University of Technology, Tehran, Iran
- ◇ **Implementation of Minesweeper Game using QT Framework**
Course Project for Advanced Programming, Sharif University of Technology, Tehran, Iran
- ◇ **Design and Implementation of a Compiler using LEX and YACC Tools**
Course Project for Principles of Compiler Design, Sharif University of Technology, Tehran, Iran
- ◇ **Simulation and FPGA Implementation of a Simple Computer using VHDL and Xilinx ISE**
Course Project for Computer Architecture lab, Sharif University of Technology, Tehran, Iran
- ◇ **Design and Implementation of a 16-bit ALU using Proteus**
Course Project for Computer Architecture, Sharif University of Technology, Tehran, Iran
- ◇ **Design and Implementation of MIPS Processor on FPGA**
Course Project for Computer Digital System Design, Sharif University of Technology, Tehran, Iran
- ◇ **Implementation of an HTTP Proxy Server using Java**
Course Project for Computer Networks, Sharif University of Technology, Tehran, Iran
- ◇ **Implementation of Basic USB Flash using AVR Assembly and Proteus**
Top mark project in the course of Micro Controllers, Sharif University of Technology, Tehran, Iran
- ◇ **Implementation of a Noise Reduction Filters using Nvidia CUDA**
Course Project for Multicore Computing, Sharif University of Technology, Tehran, Iran

WORK EXPERIENCE

Android Developer at [Appetizer](#) Mobile App. Jun. 2017 - Jan. 2017
Tehran, Iran

Appetizer is an Integrated Management System for Food Services and Clients which inform them about features like Checkin, Reserve, Takeaway and more Services

Android Developer at [Peeyade](#) Mobile App. Jun. 2016 - May 2016
Tehran, Iran

Peeyade is a media application that gives users location-based information about Tehran

Full-Stack Developer at [Green Bird Studio](#) Jun. 2013 - Oct. 2013
Tehran, Iran

Job Description: Developing Android mobile applications and Implementing back-end services using PHP.

SKILLS

- ◇ **Programming Languages:** C, C++, C#, Java, OpenMP, Nvidia CUDA, Pthread, VHDL, Verilog HDL, PLC, Matlab, Python, PHP, HTML, CSS, Javascript, Assembly
- ◇ **Applications and Scientific Tools:** Eclipse, Shell Scripting, SimpleScalar, GPGPU-Sim, DiskSim, BookSim, CACTI, MS Office, Quartus, ModelSim, Xilinx SDK, CodeVision, Microsoft Visual Studio, Qt Framework, ISE, Eclipse, OpenCV
- ◇ **Operating Systems:** GNU Linux(Ubuntu), Microsoft Windows
- ◇ **Typesetting:** \TeX , \LaTeX , VIM, Microsoft Word, Gnuplot

HOBBIES

- ◇ **Adventure:** Hiking, Hitchhiking, Camping
- ◇ **Art:** Professional Photography
With a concentration in Portrait and Documentary Photography.
Photography is also my avocation.

◇ **Other Hobbies:** Freelance Blog Writer, Reading

I love the feeling of sharing my experiences with others through my blog.