

AMIRALI ABDOLRASHIDI

<http://www.aabdolrashidi.com>

EDUCATION

University of California Riverside, Riverside, CA Sep 2015 – Present
Ph.D. Candidate, **Computer Science**, GPA: 3.9/4
Supervised by Prof. Daniel Wong

New York University Tandon School of Engineering, Brooklyn, NY May 2014
Master of Science, **Electrical Engineering**, GPA: 3.7/4
Thesis title: “Neural Spike Processing on Reconfigurable Hardware”
Supervised by Prof. N. Sertac Artan

Sharif University of Technology, Tehran, Iran Jul 2012
Bachelor of Science, **Electrical Engineering**
Area of Concentration: Digital Systems
Thesis title: “Design and Implementation of an Automatic Programmable Spin Coater”
Supervised by Prof. M. Fardmanesh

SKILLS

Coding	C++, (Proficient)	Python, (Experienced)	Java, (Familiar)	Verilog/VHDL, (Experienced)	Assembly x86,	CUDA,	HTML	SQLite (Familiar)
Others	Linux,	Visual Studio,	NetBeans,	Xilinx ISE,	MATLAB,	LaTeX		

NOTABLE PROJECTS

Neural network-based object detection for embedded hardware accelerators Nov 2017 – Present
○ Developing neural networks for resource-constrained embedded GPU and FPGA platforms, and train/test it with large image dataset to maximize accuracy, FPS, and minimize power consumption.

Optimizing data center power management in smart grids Jul 2017 – Present
○ Exploring the interaction of data center power management with electricity market frequency regulation services
○ The goal is to develop power management techniques to follow frequency regulation signals from utility providers in order to minimize power consumption and electricity cost.
○ We develop small-scale testbeds, integrate frequency regulation market into data center simulator, and develop frequency regulation signal following techniques in servers.

WIREFRAME: Implementing data dependency awareness in GPUs Jul 2016 – Present
○ Proposed and developed cross-stack software-hardware techniques to support data dependent parallelism in GPUs. Project proposed new programming paradigm and hardware scheduling techniques, resulting in **45% speedup**.
○ Evaluated by modifying GPGPU-Sim simulator in C++ and modifying CUDA benchmarks

LLVM compiler block and edge profiling Mar – Apr 2016
○ Using C++, modified LLVM to profile an arbitrary program written in C++ for number of basic blocks, edges and loops

A compact AES-256 encryption/decryption module on FPGA with graphic interface Apr 2015
○ Used **Visual C++** to create the software interface to control and transfer data to FPGA remotely;
○ Used **VHDL** to design the stages of AES-256 on hardware and interact with the PC interface.

Developing a sequence memory game for Android Mar 2015
○ Used **Java** to create a game for Android 2.3+ in which the user must remember and repeat an expanding sequence of patterns.

Low-area streaming image processor Apr – May 2013
○ Used **VHDL** to design the processing elements and a part of the external memory controller
○ Project consisted of one processing element which could load pixels from an image file in an external memory, process them using an input custom kernel, and store them in the memory.

An automatic programmable spin coater (B.S. thesis) Dec 2011 – May 2012
○ Developed the software for the system’s **PIC** chip using **C** to control the device up to 6000rpm;
○ Used **Visual C++** to design a GUI which can communicate with the device via RS-232.

An optical spectrum analyzer with the precision of 0.01nm using Brillouin scattering

Jul – Aug 2010

- Used **MATLAB** to control an apparatus to measure the spectrum of light within optical fibers.

TEACHING EXPERIENCE

University of California Riverside, Riverside, CA

Teaching Assistant, CS100 (Software Construction)

Sep – Dec 2016

- Conducted office hours and supervised 40 students in 8 lab assignments regarding code patterns such as strategy, iterator, etc.

Teaching Assistant, EE217 (GPU Architecture & Parallel Programming)

Sep – Dec 2016

- Responsible for conducting office hours and grading CUDA coding assignments for over 40 students

New York University Tandon School of Engineering, Brooklyn, NY

Teaching Assistant, Digital Logic & State Machine Design

Sep 2013 – May 2014

- Supervised about 80 students performing 6 experiments and a final project

Teaching Assistant, Introduction to VLSI

Jan – May 2014,

- Participated in designing and grading homework and lab assignments for over 100 students

Jan – May 2013

- Revised the lab tutorials

COURSES COMPLETED

Computer Architecture	GPU Architecture & Parallel Programming	Operating Systems
FPGA & Reconfigurable Systems	Computer Graphics	Compiler Construction
Synthesis of Digital Systems	Computer Vision	High-Performance Computing
VLSI & VLSI Testing	Real-time Embedded Systems	Algorithms

PUBLICATIONS

Abdolrashidi, A., Tripathy, D., Belviranli, M. E., Bhuyan, L. N., Wong, D., “**WIREFRAME: Supporting Data-dependent Parallelism through Dependency Graph Execution in GPUs,**” 50th Annual International Symposium on Microarchitecture (MICRO 50), IEEE/ACM, 2017. (*Acceptance rate: 18.6%*)

Minaee, S., **Abdolrashidi, A.**, Wang, Y., “**Iris Recognition Using Scattering Transform and Textural Features,**” Signal Processing and Signal Processing Education Workshop (SP/SPE), IEEE, 2015.

Minaee, S., **Abdolrashidi, A.**, Wang, Y., “**Screen Content Image Segmentation Using Sparse-smooth Decomposition,**” 49th Asilomar Conference on Signals, Systems and Computers, IEEE, 2015. (*Student paper award finalist*)

Minaee, S., **Abdolrashidi, A.**, “**Highly Accurate Palmprint Recognition Using Statistical and Wavelet Features,**” Signal Processing and Signal Processing Education Workshop (SP/SPE), IEEE, 2015.

Minaee, S., **Abdolrashidi, A.**, “**Multispectral Palmprint Recognition Using Textural Features,**” Signal Processing in Medicine and Biology Symposium (SPMB), IEEE, 2014.

ADDITIONAL INFORMATION

Awards & Achievements:

Graduate of NODET High School (National Organization for Development of Exceptional Talents), Iran	Sep 2001 – Jun 2008
Ranked 79 out of over 317,000 (top 0.03%) in the national university examination, Iran	Jul 2008
Admitted into Sharif University, the top engineering school in Iran	Aug 2008
2nd place in Senior Undergraduate Project Competition, Sharif University	Jun 2012
Awarded the MICRO Student Travel Grant	Sep 2017

Languages: English (Fluent), Persian (Native), Spanish (Intermediate), Arabic (Basic)