AMIRHOSSEIN KIAMARZI

ABOUT ME

Passionate Computer Engineer with 6+ years of hands-on experience in designing a High-Performance Computing (HPC) architecture on hardware platforms.

CONTACT

PHONE:

EMAIL:

Address:

EDUCATION

University of Bologna, Bologna, Italy
PhD, Department of Electrical, Electronic, and
Information Engineering "Guglielmo Marconi"   **2022 – Present**
Advisor: Giuseppe Tagliavini
Co-Advisor: Davide Rossi, Andrea Bartolini

Shiraz University, Shiraz, Iran
M.Sc., Computer Engineering   **Sep 2016-Feb 2020**
Major: Computer Architecture
Thesis: **A New Approach for High-Level Synthesis**
of Iterative Computational Algorithm on FPGA
(defended with highest mark)
Advisor: Prof. Reza Sameni
GPA: 16.61/20 (3.57/4 in U.S. grading scale)

Shiraz University, Shiraz, Iran
B.Sc., Computer Engineering   **Sep 2011-Jul 2016**
Major: Hardware Engineering
Thesis: **Implementing online-sorting on FPGA**
GPA: 18.16/20 (ranked 2nd among all B.Sc. students) (3.87/4)

RESEARCH INTERESTS

High Performance Computing | Machine Learning Accelerators | Embedded Systems | Computer Architecture | Hardware Security and Hardware trust | Hardware/Software Co-Design | Multiprocessor Architectures | High Level Synthesis

SELECTED COURSES

- Logic Circuits
- Advanced Computer Architecture
- Computer Designs of Digital Systems
- Signals and Systems
- Digital Signal Processing
- Electrical and Electronic Circuits

- GPU Programming
- Hardware Security and Trust
- Cryptographic Engineering
- Advanced Microprocessors
- Fundamentals of Computer and Programming (Python)
- Principles of Programming (C/C++)
- Advanced Programming (Java)

KEY WORK EXPERIENCE

Ayria Tech.
Co-founder and hardware specialist   Sep 2017- Jan 2020
Fars Science and Technology Park, Shiraz, Iran

Computer Engineering Scientific Group
Committee Member   Sep 2014- Jul 2016
Shiraz University, Shiraz, Iran

Computer Engineering Hardware Group
Committee Member   Sep 2015- Jul 2016
Shiraz University, Shiraz, Iran

Network Administration Team
Committee Member   Jul 2012- Sep 2014
Shiraz University, Shiraz, Iran

ACM group
Committee Member with two times attendance at
14th and 16th Asian regional contest in Iran   Sep 2013- Sep 2015
Shiraz University, Shiraz, Iran

Signal Processing Center
Intern   Summer 2014
Design and implementation of an image processing motion detection
hardware core.
Shiraz University, Shiraz, Iran

TEACHING EXPERIENCE

Teaching Assistant: Signals and systems
Shiraz University Spring 2019 – Fall 2019

Teaching Assistant: Fundamental of Digital Logic
Shiraz University Spring 2018

Teaching Assistant: Data Structures and Algorithms
Shiraz University Fall 2017

Lab Instructor: Digital Systems Design Lab
Shiraz University Fall 2017

Teaching Assistant: Computer Architecture
Shiraz University Spring 2016

Teaching Assistant: Fundamental of Digital Logic
Shiraz University Spring 2013 – Fall 2014

Lab Instructor: Computer Architecture Lab
Shiraz University Spring 2014 – Fall 2015

Lab Instructor: Digital Logic Lab
Shiraz University

PUBLICATIONS AND PAPERS

Kiamarzi, Amir-Hossein, Pezhman Torabi, and Reza Sameni. "Hardware Synthesis of State-Space Equations; Application to FPGA Implementation of Shallow and Deep Neural Networks." arXiv preprint arXiv:2105.07131 (2021).

Amirhossein Kiamarzi, Davide Rossi, and Giuseppe Tagliavini. 2024. QR-PULP: Streamlining QR Decomposition for RISC-V Parallel Ultra-Low-Power Platforms. In Proceedings of the 21st ACM International Conference on Computing Frontiers (CF '24). Association for Computing Machinery, New York, NY, USA, 147–154. https://doi.org/10.1145/3649153.3649210

KEY SKILLS

- **Hard working**, capable of handling pressure
- **Self-organized,** responsible and **multi-tasking**
- Strong social communication and **team player**
- **Super-fast learner** and **self-motivated**
- Strong in coding

SKILLS

Programming Languages: C/C++, Java, Python, SystemC, MATLAB, CUDA, x86 Assembly, Android, MATLAB
HDL: Verilog, VHDL
Typesetting: Microsoft Office and LATEX
Hardware and Simulation Tools: Xilinx ISE, Xilinx Vivado HLS, Xilixn Vivado, HSpice, MATLAB Simulink and some signal processing toolboxes, Proteus, Quartus, Modelsim, Altium Designer.

HONORS AND AWARDS

- Recipient of the Scholarship and Membership of Iranian National Elites Foundation
  (For Outstanding Academic Success) Sep 2016- Present
- Ranked 2nd student among all B.Sc. students (Shiraz University) Jul 2015

- Recipient of the Best Computer Engineering Student award from Shiraz University Alumni Association (Shiraz University) Mar 2015
- Ranked 1st among all candidate in Nationwide Entrance Exam Jul 2020

- Best T.A at CSE, Shiraz University, Shiraz, Iran. According to the students' poll. Signals and Systems course, supervised by Dr. R. Boostani

LANGUAGES

- Persian (native speaker)
- English (IELTS: 7 (S: 6, L: 7.5, R: 8, W: 6))

SELECTED PROJECTS

- Implementation of edge detection algorithm on FPGA
- Implementation of motion detection algorithm on FPGA
- Implementation of CNN for traffic signs detection on FPGA
- Implementation of ColorFill game on FPGA
- Implementation of HDMI controller on FPGA
- Implementation of VGA controller on FPGA
- Implementation of AES and DES encryption and decryption module on FPGA
- Parallel implementation of FIR filters on GPU