Fahimeh Hajizadeh

Contact

+98-912-944-0785

Fahime.hajizadeh@gmail.com

Std_Fahime.hajizadeh@khu.ac.ir

Research Interests

- *Approximate Computing*
- *Analyzing Approximate Circuits*
- *Reconfigurable Systems*
- *Computer Architecture*
- *Logic Circuits*
- *Embedded Systems*
- *Hardware Security*
- *Digital System Design*

Languages

PERSIAN
First language

ENGLISH
Good

Education

2016-2019 **M. Sc. in Computer Engineering (Hardware Architecture)**, Kharazmi University, Tehran, Iran, GPA: 4/4 (Ranking: 1)

Thesis

A novel design in high precision approximate multiplier by improving frequency, power consumption and area

Supervisors: Dr. MR. Binesh Marvasti and Dr. A. Asghari

2011-2015 **B. Sc. in Computer Engineering (Hardware Architecture)**, Shahid Beheshti University, Tehran, Iran, GPA: 3.2/4

Thesis

Review and Analysis of Image Enhancement Techniques

Supervisor: Dr. A. Mahmoudi Aznaveh

2008-2011 **High School Diploma in Physics and Mathematics Discipline**, National Organization for the Development of Exceptional Talents (NODET), Shirvan, Iran, GPA: 19.46/20.

Academic Experiences

2018-2020 **Research Assistant, Computer Laboratory, Faculty of Electrical and Computer Engineering, Kharazmi University, Tehran, Iran.**

I designed a novel algorithm that presented for the approximate multiplier. The proposed approach was error-configurable and provided a trade-off between hardware resources, accuracy, delay, and power. In addition, it can be adjusted based on target systems or applications. The proposed method, compared to the accurate and other configurable algorithm instances, improved the metrics by using a low power configuration. Meanwhile, according to experimental results, the average error rates was 1.04% for 16-bit multiplication. The percentage of improvements for error, delay, area, and dynamic power of the proposed 16-bit multiplier were 0.02% to 16.71%, 23.8% to 70.6%, -11% to 34.1%, and 42.9% to 81.1%, respectively. Moreover, the proposed multiplier has been employed in Discrete Cosine Transform (DCT) applications and has obtained admirable outputs. I also hope to enhance my knowledge of:

- ✓ Design approximate arithmetic components
- ✓ Hardware accelerator specifically in Machine Learning
- ✓ Reconfigurable design

2016-2018 **Research Assistant, Computer Laboratory, Faculty of Electrical and Computer Engineering, Kharazmi University, Tehran, Iran.**

During the time I was willing to investigate on specific approximate design to improve frequency, power consumption and area in high precision approximate multipliers. As another interesting research, I attended different courses in electrical and computer engineering department of the University of Tehran for expanding my knowledge in the areas of advanced hardware architecture and hardware security. This led to that I collaborated with a top student on detecting Hardware Trojan in presence of side-channel effects in nanotechnology.

2017-2019 **Teacher Assistant, Computer Laboratory, Faculty of Electrical and Computer Engineering, Kharazmi University, Tehran, Iran.**

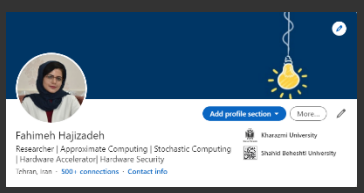
Advanced Hardware Architecture, Digital System Design

Teaching Assistant Experiences

- *C/C++ Programming*
- *Advanced Digital Electronics*
- *Advanced Hardware Architecture*
- *Digital System Design*

Skills and Expertise

- *VHDL Programming*
- *Digital System Design*
- *Intel Quartus Prime*
- *ModelSim*
- *MATLAB*
- *HSpice Simulation*
- *C++ Programming*
- *Git and GitLab*
- *Image Processing*
- *Microsoft office*
- *Photoshop*
- *Illustrator*



2012-2014 **Teacher Assistant, Computer Laboratory, Faculty of Computer Science and Engineering, Shahid Beheshti University, Tehran, Iran.**

Advanced Digital Electronics, C/C++ Programming

Honors and Awards

2019 **Ranked 1st among 12 graduate students of Electrical and computer Engineering, , Kharazmi University, Tehran, Iran.**

2015 **Being one of the top 10% of graduate students of Electrical and computer Engineering, Shahid Beheshti University, Tehran, Iran.**

2011 **Ranked 973rd in the Nationwide University Entrance Exam among over 300,000 participants.**

2009 **Ranked 16th in the Nationwide Physics Olympiad among over 10,000 participants.**

Work Experiences

2019-Present **FPGA Developer at Fanavaran Honamic Co.**

- ✓ Work on FPGA Development and Systems Engineering
- ✓ Design Arithmetic Units
- ✓ Evaluation of Performance Metrics

2018-2019 **Digital Marketing Manager at SAMIM Group Co.**

I'm working on planning and managing marketing campaigns that promote our company's brand, products, and services, and also, analyzing metrics, and identifying trends. I also hope to enhance my knowledge of:

- ✓ SEO (On-Page and Off-Page)
- ✓ Google Analytics
- ✓ Content Strategy
- ✓ Web Development

2017-2018 **Technical Documentation Specialist at SAMIM Group Co.**

Publications

Academic Journal Papers

F. Hajizadeh, M. Binesh Marvasti, SA. Asghari, M. Abbas Mollaei, AM. Rahmani, **Configurable DSI partitioned approximate multiplier**, Future Generation Computer Systems, Volume 115, 2021, Pages 100-114, ISSN 0167-739X, https://doi.org/10.1016/j.future.2020.09.008. Link

Certificates

2018-2019 **Digital Marketing at Industrial Management Institute**

2018 **Photoshop and Illustrator at Tehran Institute of Technology**