MOSTAFA ABBAS MOLLAEI

Contact

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Research Interests

- *Approximate Computing*
- *Reconfigurable Systems*
- *Hardware Security*
- *Computer Architecture*
- *Cyber Physical System*
- *Embedded Systems*

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Languages

PERSIAN
First language

ENGLISH
Good

EDUCATION

2015 - 2018 **M. Sc. in Computer Engineering**, University of Tehran, Tehran, Iran, GPA: 18.36/20

THESIS

Decreasing the Effect of Process Variation on Detection of Hardware Trojan in Nanotechnology

Supervisors: Dr. Siamak Mohammadi

2011 - 2015 **B. Sc. in Computer Engineering**, Shahid Beheshti University, Tehran, Iran, GPA: 17.12/20

THESIS

Modeling of PID Controller with Finite Accuracy Computations

Supervisors: Dr. Hamidreza Mahdiani

2007 - 2011 **High School Diploma in Physics and Mathematics Discipline**, National Organization for the Development of Exceptional Talents (NODET), Qom, Iran, GPA: 19.4/20.

ACADEMIC EXPERIENCES

2018 - Present **Research Assistant**

I collaborated in designing a new algorithm for an approximate multiplication of unsigned numbers. The algorithm is error-configurable and provides a trade-off between hardware resources, accuracy, delay and power. Also it is a configurable multiplier, and it can be adjusted according to target system or application. CDSI tool was developed by graphical C++ language and provides a user interface to select customized configurations in order to report different error reports.

2017 - 2018 **Researcher, Dependable Systems Design Laboratory, Faculty of Electrical and Computer Engineering, University of Tehran, Iran.**

My research led to develop a graphical tool using C++ to parse the benchmark circuits and extract possible Hardware Trojan residence. Suspicious parts are determined using extra information from stimulating the circuit by HSpice tool after applying inter-die and intra-die side-channel variations. Finally, I defended my dissertation by a high score.

2016 - 2017 **Researcher, Dependable Systems Design Laboratory, Faculty of Electrical and Computer Engineering, University of Tehran, Iran.**

I focused on defining my proposal during the second year of my master. Accordingly, I read many papers in several interesting fields of computer architecture such as Approximate Computing, Hardware Security and Processing-In-Memory and 3D Network-on-chip. Actually, the Hardware Security held my attention and made me encourage to read more papers about it. I defined my proposal on Hardware Security especially on detecting Hardware Trojan.

2015 - 2016 **Researcher, Dependable Systems Design Laboratory, Faculty of Electrical and Computer Engineering, University of Tehran, Iran.**

During this year, I took apart in several courses at the Electrical and Computer department and did different projects about the courses.

Teaching Assistant Experiences

- *C Programming*
- *C++ Programming*
- *Digital Electronics*
- *Algorithm Design*
- *Data Structure*

Skills and Expertise

- *VHDL and verilog*
- *Digital System Design*
- *ModelSim*
- *C++ Programming*
- *Qt Framework*
- *Socket Programming*
- *Git and GitLab*
- *Hspice*
- *MATLAB*
- *Postgresql*
- *GIS Programming*
- *Image Processing*
- *Microsoft office*

Hobbies

- *Watching movies*
- *Listening to music*
- *Playing guitar*
- *Various sports including Football and Shooting*
- *Traveling to countries for exploring new cultures*
- *Learning new languages*

HONORS AND AWARDS

2018 — **Ranked 3rd among 20 graduate students of Electrical and Computer Engineering, University of Tehran, Tehran, Iran.**

2015 — **Ranked 87th in the Nationwide University Entrance Exam among over 80,000 participants (for Graduate Education).**

2015 — **Ranked 3rd among 90 students of Computer Science and Engineering, Shahid Beheshti University, Tehran, Iran.**

WORK EXPERIENCES

2016 - Present — **Embedded System Engineer at SAMIM Group Co.**

I have worked at SAMIM Group Co. since 2016. I have collaborated in several projects and I am responsible for designing new embedded architectures of some products and implementing and developing them. Also, I have experience in the following topics:

- ✓ C++ Programming
- ✓ Qt Frontend/Backend Framework
- ✓ Linux Scripting
- ✓ Embedded Linux
- ✓ Cross-platform programming and deploying (using Yocto)
- ✓ Multi-thread programming
- ✓ Setup hardware peripherals
- ✓ Testing and Profiling Software
- ✓ GIS Programming

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

2015 — **CompTIA Hardware A+ at Tehran Institute of Technology**

2014 - 2015 — **MCSE course at Tehran Institute of Technology includes:**

Windows 8

Windows Server 2012 R2

Administrating Windows Server 2012 R2