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Amir Reza Ahmadi Mehr

Objective:

Pursuing PhD Degree in Electrical Engineering

Education:

Fall 2007 – Present **University of Tehran** **Tehran, Iran**

M.Sc., Circuits and systems, Electronics, Electrical and Computer Engineering.

Thesis: Optimizing Design Techniques for Digital Blocks in Nano-Technology Considering Process Variation Effects.

Advisor: Prof. Ali Afzali-Kusha

GPA: 18.93/20 (so far)

Fall 2002 – Sept. 2007 **Isfahan University of Technology** **Isfahan, Iran**

B.Sc., Electronics, Electrical Engineering.

Thesis: Design and implementation of active power filter based on the digital processor.
(score: 20/20)

Advisor: Prof. Hossein Farzaneh Fard

GPA: 16.23/20

Fall 2001 – May 2002 **Emam Sadegh Pre-University institute** **Isfahan, Iran**

Pre-University Certificate in Mathematics and Physics.

GPA: 18.8/20

Fall 1998 – May 2001 **Beheshti High School** **Isfahan, Iran**

High School Diploma in Mathematics and physics

GPA: 19.07/20

Research Interests:

- Low-Power, High-Performance, Digital Circuits and Systems Design.
- Design and Optimization Techniques to reduce Variation in Nano-scale era.
- Implementation of DSP and Communication Systems.
- Digital RF processor.
- Modeling Communication Systems (e.g. OFDM Transceiver).
- Design and Implementation of Switching Power supply.
- Mixed Signal Integrated Circuits and Systems.
- Computer-Aided Design of VLSI Circuits and Systems.

Current Research:

M.Sc. Thesis: Optimizing Design Techniques for Digital Blocks in Nano-Technology Considering Process Variation Effects.

Advisor: Prof. Ali Afzali-Kusha

- 1) Proposing a novel low runtime SSTA method considering within-die variation

Publications:

1. H. Farzaneh-fard, M.jabari, M.R.Amini, **Amir Reza Ahmadi Mehr**, "*Design and implementation of active power filter based on the digital processor*" The Fifteenth Iranian Conference on Electrical Engineering(ICEE-2007), Power Proceedings.
2. **Amir Reza Ahmadi Mehr**, B. Ebrahimi, A. Afzali Kusha, " *A high speed subthreshold SRAM cell design* ", 1st Asia Symposium on Quality Electronic Design (ASQED), IEEE 2009.
3. S. Kiamehr, **Amir Reza Ahmadi Mehr**, A.Afzali Kusha," *A Novel Low Runtime SSTA Method Considering Within-die Variation*", Ready to be submitted.
4. **Amir Reza Ahmadi Mehr**,M. Tohidian, "*A Design of High-Speed Pipeline CLA Architecture* ", submitted to IEICE Electronics Express.

Accomplished Projects and Term Papers:

- Design and Simulation of a novel high speed FINFET/SOI subthreshold SRAM, Fall 2009
- Investigating on extraction of Strain Silicon current model, Fall 2009.
- Modeling fixed point FIR filters in MATLAB, Spring 2008.
- Modeling of an OFDM transceiver in MATLAB/SIMULINK, Spring 2008.
- Proposing A high speed logic style, Spring 2008.
- Design of a 100 MS/sec Sample & Hold Circuit, Having THD better than 74dB in different corners in 0.18 μ m Technology, Fall 2007.
- Design of high precision Voltage Band Gap in 0.18 μ m Technology, Fall 2007.
- Design and Implementation of an Active Power Filter (APF) based on the digital processor, Spring 2006.
- Design and Implementation of remote home appliances control with AVR Micro Controller Spring 2005.

Research Experiences:

Oct. 2007 – Present

Research Assistant, *Low-Power, High-Performance, Nano-Systems Laboratory*

Advisor: *Prof. Ali Afzali-Kusha*

<http://nanolab.ut.ac.ir>

University of Tehran

- Low-power and high performance digital circuit and system design in deep sub-micron technologies.
- Statistical timing analysis methods.
- Statistical delay, power, yield modeling.
- High speed adder/multiplier design.
- Communication system modeling.
- SRAM Cell Design.
- Effects of PVT process corners on performance of a circuit.
- Verilog Switch-level modeling of digital circuits.
- Verilog RTL modeling of digital systems.
- MATLAB and Simulink system level modeling and computer simulations.
- Verilog modeling of digital filters and FFT engines.
- System-level modeling and HDL coding of complex DSP systems, test bench development and their implementation.
- Comparing different proposed low-power logic styles.
- Advanced MOSFET I-V Modeling.

M.Sc. Courses:

Low-Power Integrated Circuits (20/20)
 Custom Implementation of DSP systems (20/20)
 Nano Devices and Their Integration (20/20)
 SOI Devices and Circuits (19.5/20)
 Semiconductor Devices (19/20)
 Advanced VLSI (18/20)
 Analog Integrated Circuits Design (17.7/20)
 Theory and Technology of Silicon Devices(17.3/20)

Course Presentations:

- “Yield Investigation on Nanoscale Circuits Considering Process Variation”, Presentation in *MSc Seminar Course*, University of Tehran, Sept. 2009.
- “Investigation on Nano Scale VLSI Circuits,” Presentation in *Advanced VLSI Course*, University of Tehran, Dec. 2006.
- “Digital RF Processor (DRP),” Presentation in *Custom Implementation of DSP Systems Course*, University of Tehran, June 2008.
- “A 0.12 μ m CMOS Comparator Requiring 0.5V at 600MHz and 1.5V at 6GHz,” Presentation in *Analog Integrated Circuits Design Course*, University of Tehran, Dec. 2007.

Honors:

- Ranked 3rd Among 20 M.Sc students of the Electrical/Electronic engineering of the University of Tehran, class of 2009.
- Ranked 84th in nation-wide M.Sc. entrance exam in 2007.
- Ranked 754th among more than 450000 students in the undergraduate entrance exam in 2001.

Language Proficiency:

Languages: Native speaker Persian, Fluent in English, familiar with Arabic.

TOEFL: Will be held on 10th October

GRE: Will be held on 24th October

Computer Skills:

Programming Languages:

MATLAB, Simulink, Verilog HDL, Basic, 8085/8086/8051 Assembly Language

CAD Tools and HDL:

HSPICE, PSPICE, ORCAD, LEDIT, SEDIT, ModelSim, , Leonardo Spectrum, Quartus.

Operating Systems and Microsoft Office:

Windows, MS-DOS, Word, Power Point, Excel, Front-Page

Membership:

IEEE Student Member

Industrial Work Experiences:

Isfahan, Information and Communication Technology Institute

(<http://www.icti.ir/>)

- Working on switching power supply, 2006-2007.

Extracurricular Activities and Interests:

- Playing Football, Mountain Climbing, Biking, Hiking, Driving, Music, Movies.

References:

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|--------------------------|----------------------------|------------------------|--|
| ▪ Prof. Ali Afzali-Kusha | <i>Professor</i> | University of Tehran | afzali@ut.ac.ir |
| ▪ Prof. S. M. Fakhraei | <i>Associate Professor</i> | University of Tehran | fakhraie@ut.ac.ir |
| ▪ Prof. H. Farzaneh Fard | <i>Associate Professor</i> | Isfahan Univ. of Tech. | hosein@cc.iut.ac.ir |
| ▪ Prof. B. Forouzandeh | <i>Assistant Professor</i> | University of Tehran | bforooz@ut.ac.ir |