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EDUCATION

Ph.D. Electrical Engineering, Computer Architecture
University of Tehran, Tehran, Iran, Sept. 2007-2013.
Major: Digital Design, Minor: Computer Architecture.
Dissertation title: "Power Control-Management Techniques in Wireless Sensor Networks"
GPA 19.49 out of 20.00 (All Courses A^+)

M.S., Computer Architecture Design
University of Tehran, Tehran, IRAN, Sep. 2003 – Jul. 2006
Dissertation Title: "Investigation and Optimization Various Layers in Network-on-Chips "
Advisors: Prof. Ali Afzali-Kusha, Prof. Zainalabedin Navabi
GPA 18.57 out of 20.00

B.S., Hardware Engineering
Iran University of Science and Technology, Tehran, IRAN, Sep. 1998 – Jul. 2002
Project Title: "A Stereo Vision Hardware Framework for Robot Applications"
Advisors: Prof. Mahmood Fathi
GPA 16.25 out of 20.00

Diploma, Physics and Mathematics
Hakim Nezami High School, Qom, IRAN, Sep. 1994 – Jul. 1998
GPA 19.21 out of 20.00

HONORS AND AWARDS

Faculty of Computer Award for Top Students, 2001
Faculty of Computer Award for Top Students, 2002
Rank 5 among 7,540 participants of computer engineering M.S. nationwide entrance exam, 2003.

PROFESSIONAL EXPERIENCE

January 2005-Present, R&D Designer, Low Power and High Speed Nano-Technology Lab, ECE Department University of Tehran.
Contributing to the Design, Implementation, and Test of Transaction layer of PCI Express End Point.

PCI EXPRESS Proposal, "Design and Implementation an IP-Core for PCI EXPRESS Endpoint"
Primary Investigator: Dr. Ali Afzali-Kusha
Funding Agency: Hi-Tech Industries Center

RESEARCH EXPERIENCE

Jan. 2004-present, Research Assistant, Low Power and High Speed Nano-Technology Lab, University of Tehran

- Contributing to design and implementation of a NoC Environment.
- Contributing to the implementation of a simple tool for simulation, fault simulation, and fault generation Gate-level Verilog.

Apr. 2003-Jun. 2003, Research Assistant, Research Center of Electrical and computer Engineering, Isfahan University of Technology, Isfahan, Iran

- Contributing to design a USB device

Apr. 2002-Sep. 2002, Image Processing Lab., Iran University of Science and Technology, Tehran, Iran

- Contributing to Implementation a hardware framework for stereo vision in robots using TMS 320C board, OV 7620 cameras, and 80551 micro-controller.

PUBLICATIONS

[1] **M. Nickray**, M. Dehyadgari, A. Sobhani, A.Afzali-kusha, " LPPM: Low Power Partitioned Multiplier" *The 17th Iranian Conference on Electrical Engineering,*13-15 May. **2005**.

[2] **M. Nickray**, M. Dehyadgari, A. Afzali-kusha, "Power and delay optimization for network-on-chip," *Proceedings of the 2005 European Conference on Circuit Theory and Design*.Volume 3, 28 Aug.-2 Sept. **2005** Page(s):III/273 - III/276 vol. 3.

[3] **M. Nickray**, M. Dehyadgari, A. Sobhani, A.Afzali-kusha, "Multiplier for Correlative Input Patterns" *The 17th International Conference on Microelectronics,*13-15 Dec. **2005** Page(s):72 – 74.

[4] M. Dehyadgari**, M. Nickray**, A. Afzali-kusha, Z. Navabi, " A New Protocol Stack Model for Network on Chip," *Emerging VLSI Technologies and Architectures,* **2006**. *IEEE Computer Society Annual Symposium on*, Volume 00, 02-03 March 2006 Page(s):440 – 441.

[5] M. Dehyadgari, **M. Nickray**, A. Afzali-kusha, Z. Navabi, "Evaluation of Pseudo Adaptive XY Routing Using an Object Oriented Model for NOC" *The 17th International Conference on Microelectronics*.13-15 Dec. **2005** Page(s):204 - 208

[6] M. Dehyadgari, **M. Nickray**, A. Afzali-kusha, "Low Power Communication for Network on Chip" *International Symposium on Telecommunications*, 10-12 Sep. **2005**.

[7] **M. Nickray**, A. Afzali-kusha, "An Asynchronous Topology Control for Heterogeneous Wireless Sensor Networks", *WINSYS* **2010** *(International Wireless Internet Conference),* Page(s):75-81, Athens, Greece.

[8] **M. Nickray**, A. Afzali-kusha, "A Robust Topology Control for Heterogeneous Wireless Sensor Networks" IDT **2010**.

[9] **M. Nickray**, A. Afzali-kusha, "MEA-An Energy Efficient Algorithm for dense sector-based Wireless Sensor Networks" *EURASIP Journal on Wireless Communications and Networking,* **2012**. **(IF:0.82)**

[10] **M. Nickray**, A. Afzali-kusha, "A Topology Control Algorithm for Wireless Sensor Networks based on Simultaneous Power Control and Sleep Management" Accepted in *EURASIP Journal on Wireless Communications and Networking,* **2014**. **(IF:0.8)**

TEACHING AND ACADEMIC EXPERIENCE

Teaching **Advanced Computer Architecture (**Text Book: "Computer Architecture: A Quantitative Approach," D. Patterson, J. Hennessy**),Data Communication**, **Computer Network**, Shahed University, Tehran, 2008-09 (Fall&Spring Semester).

Teaching **Computer Architecture**, Shahed University, Tehran, 2007-08 (Fall&Spring Semester), Text Book: "Computer Organization and Design: The Hardware and software Interface," D. Patterson, J. Hennessy.

Teaching **Logic Circuit**, Shahed University, Tehran, 2006-07, Text Book: Logic Design of Morris Manno.

COMPUTER SKILLS

Hardware Description Languages: VHDL, Verilog, SystemC.
EDA Tools: Xilinx EDK**,** Altera Max Plus II, Altera SoPC Builder, ModelSim, Leonardo Spectrum, Tanner L-Edit, HSPICE.
Programming Languages and Libraries: C/C++, NS2, MPI parallel processing library, Windows MFC and API programming.
Operation Systems: Windows, Linux.

REFRENCES

Prof. Ali Afzali-Kusha, University of Tehran, email: afzali@ut.ac.ir
Prof. Zeinalabedin Navabi, University of Tehran, email: navabi@ece.neu.edu