Ebrahim M. Songhori

ECE MS-366, Rice University
P.O. Box 1892
Houston, TX 77251-1892
(832)-538-8848

ebrahim(at)rice.edu
e.songhori(at)gmail.com

Education

Ph.D. in Electrical and Computer Engineering 2012–expected 2017
Rice University, TX, GPA: 3.90/4
Supervisor: Dr. Farinaz Koushanfar
Graduate Courses: High Performance Computer Architecture, Advance VLSI, Parallel Computing, Architecting Modern Learning Algorithms, Computer Architecture, Random Process, and Digital Signal Processing.

B.Sc. in Computer Engineering 2007-2011
University of Tehran, Iran, GPA: 17.94/20
Ranked 1st out of 150 computer engineering students.
Relevant Courses: VHDL Design, Computer Architecture, VLSI, Micro-controllers, Compiler, Operating Systems, Computer Networks, Algorithm Design, Artificial Intelligence, Database, Theory of Computation and Automata.

Technical Skills

HDL:	Verilog, VHDL
Programming	C, C++, C#, java, Python
Parallel programming	OpenMPI, OpenMP, Cilk, Cilk++, CUDA, Pthread
Other	Amazon EC2, Xilinx ISE, ModelSim, Xilinx AutoESL, Quartes II, MATLAB, GraphLab, Apache Hadoop

Employment Experiences

Software Engineer Intern, Nadco., Tehran, Iran 2009-2010
Designed and implemented of an application and compiler for educational robots in Windows platform using C# in an robotic startup (www.nad-co.com).

Research Assistant, Rice University, TX 2012-Present
Accelerating Big Data Learning Problem on Distributed Computing Platforms.
Enabling Ultra-low Power ASIC Devices to Run High Energy Consuming Application (e.g., Cryptographic Algorithms) by adding Checkpoints at HLS Level.

Teaching Assistant, Rice University, TX 2012-Present
TA of Digital Logic Design, Implementation of Digital Systems.

Teaching Assistant, University of Tehran, Iran 2009-2011
TA of Computer Architecture Lab, Computer Architecture, Advance Programming, .

Course Instructor, Tehran, Iran 2007-2010
Instructor of high school Physics II and III.

Technical Projects

B.Sc. Honor Thesis, Prof. Z. Navabi 2011
Communication Synthesis and Mapping to Standard on-chip Communications.

Parallel Computing Project 2012
Implemented of Gaussian Elimination using OpenMP, OpenMPI, and Pthread and Bitonic Sort using CUDA

Computer Architecture Lab TA 2011
Designed and implemented of a dynamic Huffman decoder in Verilog on FPGA.

Computer Architecture Lab 2010
Designed and implemented of a pipelined MIPS processor in Verilog on FPGA.

Computer Aided Design 2009
Implemented of a domain transform module of H264/AVC using VHDL on FPGA and test it with NOIS II.

Awards and Honors

Fellowship, Houston, TX 2012
Rice University ECE Graduate Fellowship.
Olympiad, Tehran, Iran 2006—2010
Silver Medal in the National Scientific Olympiads for Students in Physics.
Ranked 5^{th} among students of computer engineering of Iran Universities National Scientific Olympiads for University Students in Computer Engineering.
National Entrance Exam, Tehran, Iran 2010-2011
Ranked 16^{th} in Computer Architecture in 2011, 20^{th} in Computer Architecture, and 15^{th} in Artificial Intelligence in 2010 among 18000 students on National Entrance Exam for Master of Science.

Extracurricular Activities

President, The Duncan Hall Fridge Room Club, Rice University, Houston, TX 2013–Present.
Secretary, ACM Student Chapter, ECE, University of Tehran, Iran 2009–2010.
Editor, 88, The Reformist Students of University of Tehran, the socio-political student publication, University of Tehran, Iran 2008–2009.
Member of the general council of Student Association of University of Tehran and Tehran University of Medical Science (the main opposition and reformists political group among student associations in Iran), University of Tehran, Iran 2008–2011.
Secretary of Public Relations, The Central Council of Student Association of Collage of Engineering, University of Tehran, Iran 2009–2010.
Members of the central council of Student Association of ECE, University of Tehran, Iran 2008–2009.

Publications

A. Mirhoseini, **E. M. Songhori**, F. Koushanfar. Idetic: A High-level Synthesis Approach for Enabling Long Computations on Transiently-powered ASICs." IEEE Pervasive Computing and Communication (PerCom) 2013

A. Mirhoseini, **E. M. Songhori**, F. Koushanfar. Automated Checkpointing for Enabling Intensive Application on Energy Harvesting Devices." IEEE Low Power Electronics and Design (ISLPED) 2013