

Amir Rahmati

Department of Computer Engineering
Sharif University of Technology
Azadi Avenue, Tehran, Iran, 11155-11365

Cell Phone: +98-912-4753918
Email: amir [at] rahmati.com
Homepage: amir.rahmati.com

RESEARCH INTERESTS

- ◇ Mobile, Embedded, and Pervasive Systems
- ◇ Computer Networks
- ◇ Security and Reliability
- ◇ Game Theory

EDUCATION

- ◇ **Sharif University of Technology**, Tehran, Iran (2007 - 2011)
B.S. in Computer Engineering
- ◇ **Tehran Allameh Helli High School**, Tehran, Iran, (2003 - 2007)
Affiliated with the National Organization for the Development of Exceptional Talents (NODET)
- ◇ **Naperville North High School**, Naperville, Illinois, USA, (2004 - 2005)

PUBLICATIONS

- ◇ Mahdi Fazeli, Seyed-NematAllah Ahmadyan, **Amir Rahmati**, Seyed-Ghassem Miremadi, "Power Aware Reliable Register File Partitioning for Embedded Processors", In Preparation.
- ◇ Mahdi Fazeli, Seyed-NematAllah Ahmadyan, **Amir Rahmati**, "Register File Partitioning for Reliability" Sharif University Technical Report (in Persian), 2010
- ◇ A. Shamsaie, D. Jalali, **A. Rahmati**, et al. "A Comparative Study of Real Time Operating Systems" Sharif University Technical Report (in Persian), 2010

TEST SCORES

- ◇ **TOEFL: 115/120**, Reading 30/30, Listening 30/30, Speaking 26/30, Writing 29/30
- ◇ **GRE: Verbal 530/800**, Quantitative 800/800, Analytical 3.0/6.0
- ◇ **GRE Subject: Computer Science 830/900**

HONORS AND AWARDS

- ◇ Ranked **1st** at **Sharif Freshmen ACM Challenge** (2007)
Programming contest held for the freshmen entering the Sharif University; it challenged the problem solving, coding ability and time-management skills of the participating teams.
- ◇ Admission to **Sharif University of Technology** (2007)
Sharif University is the university of choice for the top ranking students attending the nationwide universities entrance exam (Konkour) which has more than 1 million participants each year.
- ◇ Member of The **National Organization for Development of Exceptional Talents** (2000 - present)
NODET student selection exam is held every year nationwide for students starting middle and high school. The organization is responsible for a number of schools across the country and training the top students on a more advanced level on every field of study.

TEACHING EXPERIENCE

- ◇ **Presenter for Algorithmic Graph Theory study group** (2009 - present) Under the supervision of Prof. Mohammad Ali Safari
- ◇ **Teaching Assistant for Digital System Design course** (Fall 2010) for Prof. Maziar Goudarzi
- ◇ **Teaching Assistant for Operating Systems course** (Spring 2010) for Prof. Hamid Beygi
- ◇ **Teaching Assistant for Discrete Structures course** (Spring 2010) for Prof. Mohammad Izadi

- RESEARCH EXPERIENCE
- ◇ **Research Assistant in the Dependable Systems Laboratory**
 - **Thesis Project:** Enhanced Scan Chain Triple Modular Redundancy (ScTMR). ScTMR reuses the scan chain flip-flops (for testability purposes) to restore the correct state of a TMR system in the presence of transient or permanent errors. I am designing a protection method for the ScTMR control unit and designing a technology independent implementation. I will evaluate this technique both against and alongside other protection techniques using fault injection on the Xilinx Virtex 6 platform.
 - Designing a Reliable Register File System for Embedded Processors. Our technique uses register file partitioning, previously used for energy efficiency, as a method to increase reliability. We achieved 65% vulnerability reduction and 13% power reduction. I have been involved in the design and implementation of the algorithms and writing the related sections of the paper.
 - Comparative study of Real-time operating systems. We developed a standard environment and benchmark applications, and compared various performance metrics for a number of RTOS. Published as a Sharif University Technical Report in Persian.
 - ◇ Member of **The Algorithmic Graph Theory study group** (2009 - present) Under the supervision of Prof. Mohammad Ali Safari; the group has presented a great opportunity for teamwork and learning besides developing teaching and presenting skills. We studied a wide variety of graphs and also worked on Cops & Robbers problem.
- PROJECTS
- ◇ **Customizable and Reconfigurable Network-Zone (CUREZ):** Under the supervision of Prof. Mehdi Kharrazi; The goal of CUREZ project is to implement a P2P Overlay Network to create a Distributed DB with the ability to inject query into the overlay network. Various techniques such as network coding is used to increase throughput.
 - ◇ **Designing & Implementing an Elevator Controller:** Microprocessor course project, written in Verilog using CodeVision AVR, simulated using Proteus VSM, implemented on an Atmel Mega32 platform.
 - ◇ **Developing a Chat Client & Server application:** Computer Networks course project, written in C++, using sockets and multiple threads.
 - ◇ **Developing a Download Manager:** Computer Networks course project, written in C++, using sockets and multiple threads. We implemented the HTTP protocol and resuming support.
 - ◇ **Implementation and synthesis of a Sign Bit Reduction multiplier:** Digital Systems Design course project. I further implemented a normal multiplier and compared their speed and power consumption.
- SKILLS
- ◇ Programming: C, C#, C++, Java, Basic, Assembly, Verilog HDL, VHDL, Prolog
 - ◇ Web: HTML, JavaScript, PHP, MySQL
 - ◇ Software Tools: Network Simulator, Packet Tracer, Wireshark, Eclipse, Visual Studio, Netbeans
 - ◇ Hardware Tools: ModelSim, Synplify, Altera Quartus, CodeVision AVR, Proteus, Xilinx ISE, HSPICE
 - ◇ OS: Windows, Linux, OS X
 - ◇ Languages: Persian (native), English (semi-native), German (minimal)
- ACTIVITIES
- ◇ **Elected Member** of the Computer Engineering Dept. **Student Scientific Chapter (SSC)** (2010) SSC is the student committee concerned with directing the department extra-curriculum activities.
 - ◇ **Computer & IT Editor and freelancer** for Sharif Daily, Sharif's official newspaper (2009-2010) Writing has always been attractive to me and I have written several articles for the science page of Sharif Daily newspaper. I was also the editor of Computer & IT page for a three month term.
 - ◇ **Technical Manager** 11th ACM/ICPC Asia Region (2009) I directed and managed the IT team to assemble, setup, and manage over 100 PC workstations and their network for the contest, many from individual components, on a very short timeframe (5 days). It proved to be a strong technical and management challenge requiring 24x7 attention and devotion.
 - ◇ Design & Construction of a **Path-Finder Robot** (2003-2004) We designed and build a path-finding robot, involving interdisciplinary challenges regarding mechanics, programming, and interfacing. My focus was on the implementing and interfacing the mechanics.