

Mahdi Kefayati

Wireless Networking and Communication Group (WNCG)
Electrical and Computer Engineering Department
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RESEARCH INTERESTS

- Wireless Communication
- Computer and Communication Networks
- Information Theory
- Information and Network Security
- Game Theoretic Models, especially their applications in wireless networks
- Distributed Information Fusion and Filtering

EDUCATION

*PhD in Electrical Engineering,
Communications, Networks and Systems
(CommNetS) Track*
Austin, Texas USA.
Supervisor: Prof. Constantine Caramanis

**Dpt. of Electrical and Computer Engineering
The University of Texas at Austin**
2007-2012(expected)

*MSc in Information Technology,
Major in Communication Networks*
Tehran, Iran.
GPA: 19.24/20

**Department of Computer Engineering
Sharif University of Technology**
2004-2007

Thesis: Routing Security Enhancement in Mobile Ad hoc and Wireless Sensor Networks
Supervisor: Prof. Hamid R. Rabiee

*BSc in Electrical Engineering,
Major in Telecommunications*
Tehran, Iran.

**Faculty of Engineering,
University of Tehran**
2000-2004

GPA: 17.67/20, Last two years GPA: 18.35/20

Thesis: Security Analysis of IEEE 802.11-based Wireless Access Networks
Supervisor: Prof. Naser Rezaee

RESEARCH EXPERIENCE

Research Assistant

University of Texas at Austin
Supervised by *Dr. Constantine Caramanis*
Research on the Kalman filtering over lossy networks.

Wireless Comm. and Networking Group
Fall 2007 - Present

Research Assistant and Team Leader

Sharif University of Technology
Supervised by *Dr. H. R. Rabiee*

*Research on secure and reliable routing and data forwarding in mobile ad hoc and wireless sensor networks.
Supervising wireless communication and networks research group including four MSc and six BSc students.*

Digital Media Lab.
Winter 2004 - Summer 2007

Research Assistant

Iran Telecommunication Research Center (ITRC)
Supervised by *Dr. H. R. Rabiee*

Information Technology Center of Excellence
Spring 2006 - Fall 2006

Research on misbehavior and fault resilient secure routing and data forwarding in mobile ad hoc and wireless sensor networks. Game theoretic analysis of cooperation in wireless ad hoc and sensor networks.

Research Assistant

Electrical and Computer Engineering Department,
Faculty of Engineering, University of Tehran
Supervised by *Prof. K. Lucas*

Designing and implementing garbage collection robots.

Control Lab.

Winter 2002 - Winter 2003

PUBLICATIONS

- Mahdi Kefayati, Mohammad S. Talebi, Babak H. Khalaj and Hamid R. Rabiee. “**Secure Consensus Averaging in Sensor Networks Using Random Offsets**,” 14th IEEE International Conference of Telecommunication (ICT 2007), 2007.
- Mahdi Kefayati, Mohammad S. Talebi, Hamid R. Rabiee and Babak H. Khalaj. “**On Secure Consensus Information Fusion over Sensor Networks**,” 2007 ACS/IEEE International Conference on Computer Systems and Applications (AICCSA 2007), 2007.
- Mahdi Kefayati, Mohammad S. Talebi, Hamid R. Rabiee and Babak H. Khalaj. “**Secure Consensus Averaging for Secure Information Fusion in Sensor Networks**,” The 10th International Symposium on Signal Processing and its Applications (ISSPA 2007), 2007.
- Mahdi Kefayati, Hamid R. Rabiee, S. Ghasem Miremadi and Ahmad Khonsari “**Misbehavior Resilient Multi-path Data Transmission in Mobile Ad-hoc Networks**,” The Fourth ACM Workshop on Security of Ad Hoc and Sensor Networks (SASN’06), 2006.
- Mohammad S. Talebi, Mahdi Kefayati, Babak H. Khalaj and Hamid R. Rabiee. “**Adaptive Consensus Averaging for Information Fusion over Sensor Networks**,” The Third IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS’06), 2006.

TEACHING EXPERIENCE

Introduction to Automatic Control - EE362K

Electrical and Computer Engineering Department
The University of Texas at Austin.

Teaching Assistant
Spring 2008

Stochastic Processes

Computer Engineering Department,
Sharif University of Technology,
Tehran, Iran.

Teaching Assistant
Spring 2007

Computer Networks

Computer Engineering Department,
Sharif University of Technology,
Tehran, Iran.

Teaching Assistant
Spring 2005 and Fall 2005

AITC Incident Handling

ASHNA Imen Co.
Tehran, Iran.

Instructor
Fall 2005-Summer 2007

AITC Information Security Management Systems (ISMS) Fundamentals

ASHNA Imen Co.
Tehran, Iran.

Instructor
Winter 2004-Summer 2007

PROFESSIONAL EXPERIENCE

ASHNA Imen Co.

Unit 5, 3rd Floor, No. 49, Aria Vatani Rd,
Shahid Hosseini Street, Shahid Beheshti Ave.,
Tehran, Iran.

Co-Founder and Information Security Expert

Fall 2002 - Present

<http://www.ashnasecure.com/>

- Member of the steering committee.
- Head of intrusion detection system research, design and development group.

- BS7799 information security auditor.
- Member of Information Security Management Systems (ISMS) group.
- Instructor (AITC ISMS Fundamentals, AITC Incident Handling, AITC Penetration Testing, Linux+).

ASHNA Co.

Unit 1, 1st Floor, No. 49, Aria Vatani Rd,
Shahid Hosseini Street, Shahid Beheshti Ave.,
Tehran, Iran.
<http://www.ashnaco.com/>

- Member of network security team.

Network Security Expert

Fall 2001 - Fall 2002

**University of Tehran Informatics Center
(UTIC)**

No. 286, Keshavarz Blvd.,
University of Tehran, Informatics Center (UTIC)
Tehran, Iran.
<http://utic.ut.ac.ir/>

Designer and Developer

Fall 2001 - Fall 2002

- Designing and implementing a network-based intrusion detection system based on open source software.

CERTIFICATES

- AITC Certified Incident Handler, ASHNA Imen, Summer 2005.
- BS7799 (recently ISO27000) Lead Auditor (LA) Trained, British Standards Institution, Summer 2004.

AWARDS AND HONORS

- Ranked **1st** among IT M. Sc. students and **2nd** among all M. Sc. of computer engineering department of Sharif University of Technology, 2006.
- Ranked **31st** among more than 100,000 graduate applicants in the Iranian Nationwide Graduate University Entrance Exams (Arshad Konkoor), 2004.

ACCOMPLISHED PROJECTS

- **Misbehavior Resilient Data Transmission over Mobile Ad hoc Networks**
(*Analysis and Design of Fault Tolerant Systems course, Fall 2005*)
 - Proposing a new multi-path method for data forwarding robust to various misbehaviors even in highly hostile conditions, Published in SASN'06.
- **Distributed Computing over Wireless Networks**
(*Wireless Communication course, Fall 2005*)
 - Proposing a new framework for secure information fusion over sensor networks called *Blind Information Fusion Framework (BIFF)*, Published in AICCSA 2007.
 - Proposing a new method for secure consensus averaging over sensor networks called *Random Offsets Method (ROM)*, Published in ICT 2007.
 - Proposing a new method for secure consensus averaging over sensor networks called *Random Projections Method (RPM)*, Published in ISSPA 2007.
 - Proposing an adaptive method for distributed consensus averaging over sensor networks to improve convergence behavior of current methods, Published in MASS'06.
- **Key Management in Mobile Ad hoc Networks**
(*Fundamentals of Cryptography course, Fall 2004*)
- **Performance Analysis of Desktop Grids**
(*Network-based Computing course, Fall 2004*)

- Proposing a model for assessing and predicting the performance of desktop grids for optimized resource allocation as well as job completion time prediction.
- **A Survey on Security Mechanisms for IEEE 802.11-based Wireless Access Networks**
(*B. Sc. Project, Fall 2003*)
- **Design and Implementation of an Anomaly Detection Plug-in for SnortTM**
(*Computer Networks course, Fall 2003*)
- **Design and Analysis of an E-plane Horn Antenna**
(*Antennas course, Fall 2003*)

TECHNICAL SKILLS

- **Programming Languages:** Proficient in C++, C, Object Pascal and Delphi; Familiar with Java, Tcl, Perl, PHP, Bash.
- **Operating Systems:** Proficient in Linux and MS Windows; Familiar with BSD operating systems especially OpenBSD.
- **Design and Simulation Environments:** Proficient in MATLAB, OMNet++, OrCAD, PSPICE and HSPICE; Familiar with ns-2 and OPNET Modeler.
- **Graphical Design and Typesetting Environments:** Proficient in L^AT_EX, MS Office and Adobe Photoshop.

ACTIVITIES

- Elsevier Journal of Computer Communications; Reviewer, 2006- 2007.
- 4th International Conference on Information Technology : New Generations (ITNG 2007), Las Vegas, Nevada, USA; Reviewer, 2006.
- IEEE; student member, Winter 2000-Present.
- ACM; student member, Winter 2001-Present.
- Second Iranian Network Security Symposium; Member of program committee, Spring 2004.
- First Iranian e-Learning Symposium; Member of executive committee, Spring 2003.
- The Journal of Electrical and Computer Engineering Department (BARKAM), Faculty of Engineering, University of Tehran; Vice editor in chief, Fall 2001-Winter 2002.
- First Iranian Network Security Symposium; Member of program committee, Summer 2002.
- First Control Engineering Symposium; Member of IT committee, Fall 2002.
- Mars Robotic Team; Member, Fall 2001-Fall 2002.
- Fourth Iranian Student Conference on Electrical Engineering (ISCEE'01); Member of IT, automation and network and public relations committees, Summer 2001.

REFERENCES

Available upon request.