Academic C.V.

Name: Abbas Nayebi

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Keywords: computer science, research, lecturer, engineering, PhD, wireless networks, performance evaluation, interconnection networks, mobility.

SUMMARY

Education in two first rank universities in Iran in computer hardware (BSc), software (MSc), and networks (PhD). Working as a lecturer for three universities and experiencing two research visits from EPFL and KTH universities. Development of a comprehensive simulation tool. More than 30 research papers in the fields of **wireless networks**, **performance evaluation**, **interconnection networks**, and **signal processing**.

EDUCATION

Sharif University of Technology	2004 – 2009 Sep.

- Ph.D. Computer Architecture (Wireless Networks), Avg: 19.62 / 20

Sharif University of Technology (the first ranked university in Iran)	1998-2001

- M.Sc. Software Engineering, Avg: 17.53 / 20

University of Tehran	1994-1998

- B.Sc., Hardware Engineering, Avg: 17.2 / 20

HONORS

- *Selected 2009 PhD graduate among the Computer Engineering PhD graduates*
- *First rank in written entrance exam of Ph.D. (Sharif University)*
- *3rd rank in countrywide M.Sc. entrance exam and rank of 232 among several hundred thousands of applicants for B.Sc. entrance (Top 0.05%)*
- *First rank among computer engineering students (B.Sc.)*

ACADEMIC JOBS AND RESEARCH VISITS

- Assistant Professor, Research Institute of Petroleum Industry (RIPI), confirmed by the Ministry of Science Research and Technology (MSRT), May 2011.
- Manager of HPC Lab, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran, 2010 – 2011
- Conjugate Professor at University of Tehran, 2010-2011
- Research visit: LCN Lab., KTH, Sweden, May-Oct 2008.
- Internship: LMTS Lab., EPFL University, Switzerland, Feb-Mar 2008.

TAUGHT COURSES

University of Tehran

- Internet engineering

Tarbiat Modares University

- Architecture and Programing of Web-based Systems (grad. course)

Azad University of Qazvin

- Internet Engineering, Design of algorithms, Discrete mathematics, System analysis and design, Basics of computer science, Software engineering, Advanced programming, Programming in C, Advanced topics : Java, Advanced topics : Web design, Documentation of information systems

Azad University of Takestan

- Programming, Computer Basics

Payam-e Noor University of Qazvin

- Data structures, Advanced Programming

ACADEMIC PROJECTS

PhD. Thesis Investigation of the effect of mobility on the performance of   2004-2009
infrastructure-less wireless networks

XMulator: An Object Oriented Multi-layered Simulation Framework   2004-now
- Including five packages: Interconnection Networks , Sensor and Wireless Networks, Queuing Networks, Markov Model, Logic Circuits

- About 90,000 lines of code

- More than 40 published papers that used XMulator for their simulation experiments

- Simulation results are used in more than 10 MSc and 3 PhD projects

Registered in SourceForge and published in http://www.xmulator.org (an old version is only available publicly)

SENSA (Sensor Networks for Space Applications)   2008
It is a project defined at LMTS lab. Of EPFL University, Switzerland as a part of European project E-Cube. In this project, a network of few wireless nodes is established and data from sensors are gathered and reported through a web interface.

MSc. Thesis Sound visualization using human auditory model   1999-2001

BSc. Project Design and implementation of a 30 channels audio card in Iran's   1997-1998
Telecommunications Research Center

PUBLISHED PAPERS

Journal Papers:
- A. Nayebi and Hamid Sarbazi-Azad, "Optimum Hello Interval for a Connected Homogeneous Topology in Mobile Wireless Sensor Networks," to be appeared in journal of Telecommunication Systems, Springer.
- A. Nayebi and Hamid Sarbazi-Azad, "Analysis of Link Lifetime in Wireless Mobile Networks," to be appeared in Wireless Networks, Elsevier.
- S. Maleki, M. M. Sepehri, Abbas Nayebi, H. Farvaresh, R. Sawhney, "Multi-layer hybrid wired-cum-wireless sensor network design," to be appeared in International Journal of Communication Networks and Distributed Systems (IJCNDS).
- A. Nayebi, "A Comment on Link Dynamics and Protocol Design in a Multi-Hop Mobile Environment," Wireless Sensor Networks Journal, Vol 3, Issue 3, DOI: 10.4236/wsn.2011.33012, Scientific Publishing, Mar. 2011.
- A. Nayebi and Hamid Sarbazi-Azad, "Analysis and Improvement of the LEACH Protocol for Mobile Wireless Sensor Networks," Journal of Parallel and Distributed Computing (JPDC), Vol. 71, Issue 6, Elsevier, June 2011.
- A. Nayebi, Gunnar Karlsson, Hamid Sarbazi-Azad, "Evaluation and design of beaconing in mobile wireless networks," Ad hoc Networks, Vol. 9, Issue 3, Elsevier, 2011.
- R. Moraveji, H. Sarbazi-Azad, A. Nayebi, K. Navi, "Modeling the Effects of Hot-spot Traffic Load on the Performance of Wormhole-Switched Hypermeshes," Computers & Electrical Engineering, Vol. 37, Issue 1, Elsevier, Jan 2011.
- A. Nayebi, Hamid Sarbazi-Azad, and Gunnar Karlsson, "Performance Analysis of Opportunistic Broadcast for Delay-Tolerant Wireless Sensor Networks," Journal of Systems and Software, Vol. 83, Issue 8, pp. 1310-1317, Elsevier, Aug. 2010.
- Abbas Nayebi, Hamid Sarbazi-Azad, "Analysis of k-Neigh Topology Control Protocol for Mobile Wireless Networks," Computer Networks, Vol 53, Issue 5, pp. 613-633, doi: 10.1016/j.comnet.2008.10.024, Elsevier, 2009.
- Hamid Shokrzadeh, A. T. Haghighat, Abbas Nayebi, "New routing framework base on rumor routing in wireless sensor networks," Computer Communications, Vol. 32, Issue 1, pp. 86-93, doi: 10.1016/j.comcom.2008.09.027, Elsevier, 2009.

Conference Papers:
(I presented the items marked by **[**])
- M. Zolghadr, K. Mirhosseini, S. Gorgin,   A. Nayebi, "GPU-based NoC simulator," In Proc. of 9th

IEEE/ACM International Conference on Formal Methods and Models for Codesign (MEMOCODE), pp. 83-88, July 2011.

- Abbas Nayebi, Amin Dehesh, H. Sarbazi-Azad, "Providing Mobile Internet Service Using MOnetary Wireless Networking (MOWNET)," In Proc. of The 36th IEEE Conference on Local Computer Networks (LCN), Bonn, Germany, Oct. 2011.

- Hamideh Sadat Cheraghchi, Abas Nayebi, "Human Society Inspired Routing For Wireless Sensor Network," In Proc. of The 36th IEEE Conference on Local Computer Networks (LCN), Bonn, Germany, Oct. 2011.

- Abbas Nayebi, Gunnar Karlsson, "Beaconing in Wireless Mobile Networks," In Proc. of IEEE Wireless Communications and Networking Conference (WCNC), Budapest, 2009.

- ** Abbas Nayebi, Hamid Sarbazi-Azad, and Gunnar Karlsson, "Routing, Data Gathering, and Neighbor Discovery in Delay-Tolerant Wireless Sensor Networks," In Proc. of IEEE International Parallel & Distributed Processing Symposium (IPDPS), Rome, 2009.

- Arash Shamaei, Abbas Nayebi, Hamid Sarbazi-Azad, "A Simple and Efficient Fault-Tolerant Adaptive Routing Algorithm for Meshes," LNCS 5022, Algorithms and Architectures for Parallel Processing, pp. 54-57, Springer, 2008.

- A. Nayebi, H. Sarbazi-Azad, and K. Alishahi, "Analysis of k-Neigh Topology Control Protocol for Wireless Networks," In Proc. of HWISE-2008 workshop (AINA), 2008.

- A. Nayebi, H. Sarbazi-Azad, "Analysis of the Effect of Nodes' Mobility on the Performance of Wireless Networks," (in Persian) In Proc. of The First International E-city Conference, Tehran, Iran,2008.

- Mohammad Mirza-Aghatabar, Arash Tavakkol, Hamid Sarbazi-Azad, Abbas Nayebi, "An Adaptive Software-Based Deadlock Recovery Technique," In Proc. of AINA, pp. 514-519, IEEE Press, Japan, 2008.

- A. Nayebi, A. Shamaei, S.G. Miremadi, "Traffic Analysis of f-cube Fault-Tolerant Routing Algorithm in Mesh Interconnection Networks", In Proc. of CSICC, Iran, 2007.

- A.Shamaei, A. Nayebi, H. Sarbazi-Azad, "Performance Evaluation of Fault-Tolerant Routing in Mesh Interconnection Networks", In Proc. of CSICC, Iran, 2007.

- A. Nayebi, A. Shamaei, H. Sarbazi-Azad, "Improving of f-cube fault-tolerant routing algorithm based on detailed traffic analysis," In proc. of HPCC 2007, Houston USA, LNCS 4782, pp. 766-775, Springer, 2007.

- R. Moraveji, H. Sarbazi-Azad, A. Nayebi, K. Navi, "Performance Modeling of Wormhole Hypermeshes under Hotspot Traffic," LNCS 4649, Computer Sceience-Theory and Applications, Springer, Sep. 2007.

- S. Meraji, A. Nayebi, and H. Sarbazi-Azad, "Simulation-Based Performance Evaluation of Deterministic Routing in Necklace Hypercubes," In proc. of AICCSA 2007, Jordan, IEEE Press, 2007.

- H. Shokrzadeh, A. T. Haghighat, A. Nayebi, F. Tashtarian, "Directional Rumor Routing in Wireless Sensor Networks," In Proc. of ICI 2007, IEEE Press, Tashkent, Uzbekistan, 2007.

- ** A. Nayebi and H. Sarbazi-Azad, "Lifetime Analysis of the Logical Topology Constructed by Homogeneous Topology Control in Wireless Mobile Networks," In Proc. of 13th International Conference on Parallel and Distributed Systems (ICPADS2007), IEEE Press, Hsinchu, Taiwan, 2007.

- Arash Shamaei, Abbas Nayebi, Hamid Sarbazi-Azad, "Fault-tolerance improvement of planar adaptive routing based on detailed traffic analysis," In proc. of 22nd international symposium on Computer and information sciences (ISCIS), IEEE Press,2007.

- H. Shokrzadeh, M. Mashaiekhi, A. Nayebi, "Improving Directional Rumor Routing in Wireless Sensor Networks," In Proc. of The 4th International Conference on Innovations in Information Technology, IEEE Press, November 18 – 20, UAE, 2007.

- A. Nayebi, M. Rahimi, H. Sarbazi-Azad, "Analysis of time based random waypoint mobility model for wireless mobile networks," Proceedings of International Conference on Information Technology- New Generations (ITNG2007), IEEE Press, April 2-4, 2007, Las Vegas, USA.

- ** A. Nayebi, A. Khosravi, H. Sarbazi-Azad, "On the Link Excess Life in Mobile Wireless Networks," Proceedings of International Conference on Computing:Theory and Applications ICCTA, IEEE Press, India, 2007.

- A. Nayebi, A. Khosravi, H. Sarbazi-Azad, "The impact of stationary nodes on the performance of wireless mobile networks," Third International Conference on Wireless and Mobile Communications (ICWMC2007), IEEE Computer Society Press, March 4-9, 2007, Guadeloupe, French Caribbean.

- S. Meraji, A. Nayebi, H. Sarbazi-Azad, "Empirical Performance Evaluation of Adaptive Routing in Necklace Hypercubes: A Comparative Study," Proceedings of International Conference on Computing:Theory and Applications ICCTA, IEEE Press, India, 2007.

- A. Nayebi, S. Meraji, A. Shamaei, H. Sarbazi-Azad, "Xmulator: A listener-based integrated simulation platform for interconnection networks," Proceedings of Asian Modelling Symposium (AMS2007), IEEE Press, Thailand, 2007.

- A. Nayebi, M. Rahimi, H. Sarbazi-Azad, "Time-based Random Waypoint Mobility Model for Wireless Mobile Networks," Proceedings of The Australian Telecommunication Networks and Applications Conference (ATNAC2006), Dec. 4-6, 2006, Melbourne, Australia.
- A. Khonsari, M. Ould-Khaoua, A. Nayebi, H. Sarbazi-Azad, "The impact of timing constraints on virtual channels multiplexing in interconnection networks," Proceedings of 25th IEEE International Performance Computing and Communications Conference (IPCCC'06), March 28-30, 2006, Phoenix, Arizona, USA.
- A.Nayebi, "Improving Dynamic Spectrogram using Inverse Color Method and Base-band Representation," In Proc. of ICEE 2005, 2005.

TECHNICAL REPORTS

- Abbas Nayebi and Gunnar Karlsson, "Neighbor Discovery in Mobile Wireless Networks," Technical Report #TRITA-EE_2008_066, Royal Institute of Technology (KTH), Sweden, 2008.
- A. Nayebi, A. Dehesh, A. Khosravi, and H. Sarbazi-Azad, "An Introduction to Mobility in Wireless Sensor Networks and Wireless Ad hoc Networks", Technical report #HPCAN-TC-07-101, HPCAN lab., Sharif Uni. of Tech., Iran, 2007.
- A. Nayebi and H. Sarbazi-Azad, "Fault-Tolerant Routing in Interconnection Networks ,"Gozaresh Computer Mag., Issue 168, pp 18-29, 2006.

WORKSHOPS

- "An Introduction to the Service Lifecycle in Information Technology Infrastructure Library (ITIL)", RIPI, Iran, Aug. 2010.
- "Neighbor Discovery in Mobile Networks", Iran Telecom. Research Center (ITRC), Feb. 2009.
- "Beaconing in Wireless Mobile Networks", EuroNF workshop on wireless and mobility, Stockholm, Sweden, October 23-24 2008.
- "Simulation of Interconnection Networks", IPM, Iran, Jun. 2007

ACADEMIC ACTIVITIES

- Program Committee member of The 19th Euromicro International Conference on Parallel, Distributed and Network-Based Computing (PDP2011)
- Chair of "IPM One Day Workshop on GPU Programming," School of Computer Science, IPM, Tehran, Iran, 2010/05/27.
- Chair of "One Day Workshop on IBM Cell/BE Programming," School of Computer Science, IPM, Tehran, Iran, 2010/04/22.
- Manager of the HPC Center, School of Computer Science, IPM, Iran (2010 Feb. – now)
- Initiating the Parallel Computing Division, RIPI, 2009
- Initiating the "New technologies in education and research" office of IAUQ, 2003
- Coach of the first ACM programming contest team of Islamic Azad Uni. Of Qazvin, 2002-2003
- Manager of technical committee of the first Iranian Mechatronics Conference, 2003
- Reviewer for

  IEEE Transactions on Computers, International Journal of Communication Systems, Wiley - Computer Communications, Elsevier - Journal of Systems Architecture, Elsevier - Journal of Systems and Software, Elsevier - Cluster Computing, Springer - Special issue on the Theoretical and Algorithmic Aspects of Wireless Ad Hoc and Sensor Networks of the Computer Communications Journal, Elsevier - CSI Journal on Computer Science and Engineering - International Journal of Computers and Applications, Acta press - Iranian Journal of Electrical and Computer Engineering (IJECE) - World Applied Sciences Journal - IEEE International Conference on Communications (ICC 2010) - ACS/IEEE International Conference on Computer Systems and Applications (AICCSA-10) - First Asia International Conference on Modeling and Simulation (AMS2007) - The 15th CSI Symposium on Computer Architecture & Digital Systems (CADS 2010) - The Third International Workshop on Performance Modeling and Analysis of Communication in

Wired and Wireless Networks (PMAC 2WN 2007) - The Sixth International Conference on Information, Communications and Signal Processing (ICICS 2007) - 3rd Information and Knowledge Technology Conference (IKT 2007) - Computer Society of Iran Computer Conference (CSICC 2007).

LANGUAGE PROFICIENCY

English: IELTS (Listening 8/9, Reading 9/9, Writing 7.5/9, Speaking 7.5/9, Overall 8/9)