

# Mehrdad Mahdavi

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## CONTACT INFORMATION

Theory Group, No. 324  
Department of Computer Engineering  
Sharif University of Technology  
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## RESEARCH INTERESTS

- Algorithm Design and Analysis (approximation, randomized, online)
- Data Mining (stream, web text retrieval, social networks, graph data)
- Algorithmic Game Theory (permutation betting, pricing, information diffusion)
- Graph Theory
- Evolutionary Computing and Machine Learning (online algorithms, distance metric learning)

## EDUCATION

### Sharif University of Technology, Tehran, Iran

PhD candidate, Computer Engineering (Software), September 2008 - now

- Advisor: Dr. Abolhassani
- Some PhD Courses:  
Stochastic Processes(20/20), Game Theory(17/20)

### Sharif University of Technology, Tehran, Iran

MSc, Computer Engineering (Software), September 2004 - 2007

GPA: 18.26/20 (*last two years*)

- Thesis Topic: "*Parallel coarse grained ranking of web pages*"
- Advisor: Prof. Mohammad Ghodsi
- Some Graduate Courses:  
Advanced Algorithms(17/20), Parallel Algorithms(18/20), Data Mining(20/20),  
Distributed Systems(17.5/20), Performance Evaluation of Computer Systems(17.2/20),  
Design and Analysis of Computer Networks(17.5/20)

### Amirkabir University of Technology, Tehran, Iran

BSc, Computer Engineering (Software), September 2000 - 2004

GPA: 16.8/20

- Thesis Topic: "*Performance evaluation of scheduling algorithms in Grid Computing environments*"
- Advisor: Dr. Hosseini Nezhad

## HONORS AND AWARDS

- 2008: Accepted as a PhD student in Sharif University of Technology, the best university of Iran.
- 2008: Accepted as a PhD student in Amirkabir University of Technology (Tehran Polytechnic).
- 2007: Recognized as "Elite" by Iranian Elites Organization
- 2004: Ranked **18th** in "National Entrance Exam for M.Sc. Program" among more than 10'000 participants
- 2000: Ranked **126th** in "National Entrance Exam for B.Sc. Program" among more than 400'000 high school students

- 1998: Semifinalist of "National Mathematics Olympiad"

## PUBLICATIONS

### Journal papers

- **Harmony K-means Algorithm for Document Clustering**  
(joint work with H. Abolhassani )  
in *Data Mining and Knowledge Discovery, Springer, DOI:10.1007/s10618-008-0123-0*
- **An Improved harmony Search Algorithm for Solving Optimization Problems**  
(joint work with M. Fesanghary and E. Damangir )  
in *Appl. Math. and Comput., Volume 188, Issue 2, 15 May 2007, pp. 1567-1579*
- **Top 25 Hottest Articles**  
[http://top25.sciencedirect.com/index.php?subject\\_area\\_id=16&journal\\_id=00963003](http://top25.sciencedirect.com/index.php?subject_area_id=16&journal_id=00963003)
- **Novel Meta-heuristic Algorithms for Clustering Web Documents**  
(joint work with M.H. Chehreghani, H. Abolhassani, and R. Forsati )  
in *Appl. Math. Comput., Volume 201, Issues 1-2, 15 July 2008, pp. 441-451*
- **Hybridizing Sequential Quadratic Programming with HS Algorithm for Engineering Optimization**  
(joint work with M. Fesanghary and M. Minary, Y. Alizadeh )  
in *Computer Methods in Applied Mechanics and Engineering, Volume 197, Issues 33-40, 1 June 2008, pp. 3080-3091, Elsevier*
- **Global Best Harmony Search**  
(joint work with M. G. H. Omran )  
in *Appl. Math. Comput., (2008), doi:10.1016/j.amc.2007.09.004*
- **Bandwidth Delay Constrained Least Cost Multicast Routing**  
(joint work with R. Forsati and M. T. Haghighat )  
in *Computer Communications, Volume 31, Issue 10, 25 June 2008, pp. 2505-2519, Elsevier*

### Conference papers

- **Algorithms for Concurrency Control in Sliding Window Query Processing**  
(joint work with R. Forsati and M. Mahmoodi )  
in *15th Iranian Conference on Electrical Engineering(ICEE2007) , Tehran, Iran*
- **Web Page Recommendation Based on Distributed Learning Automata and PageRank Algorithm**  
(joint work with M. Meybodi and R. Forsati )  
in *Information and Knowledge Discovery (IKT2007), pp. 235-242, Mashhad, Iran*
- **An Algorithm for Bandwidth Dealy Constrained Multicast Routing**  
(joint work with A. Movaghar, and R. Forsati )  
in *13th Int'l CSI Computer Conference (CSICC'2008), March 9-11, 2008, Kish Island, Persian Gulf, Iran, Proceeding of Springer Lecture Notes on Computer Communication*
- **Web page Clustering Using Harmony Search Optimization**  
(joint work with R. Forsati, M. Kangavari )  
in *IEEE Canadian Conference on Electrical and Computer Engineering(CCECE 2008), Symposium on Computer Systems and Applications, May 2008, pp. 1601-1604*
- **NPI: New Representation for Multicast Trees**  
(joint work with R. Forsati, A.T. Haghighat )  
in *IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2008), Symposium on Communications and Networking, May 2008, pp. 1641-1646*

- **Hybridization of K-means and Harmony Search Methods for Web Page Clustering**  
(joint work with R. Forsati, M. Meybodi )  
in *IEEE/WIC/ACM International Conference on Web Intelligence (WI-08)*, Accepted

**Book Chapter**

- **Harmony Search Algorithms: Theory and Applications**  
(Editor: Prof. Z. W. Geem )  
in *Springer (the Studies in Computational Intelligence series)*

PROFESSIONAL  
ACTIVITIES

**Referee for**

- Information Science, Elsevier
- Applied Mathematics and Computation, Elsevier
- Journal of the Franklin Institute, Elsevier
- Transactions on Evolutionary Computation, IEEE
- Transactions on Systems, Man, and Cybernetics, IEEE
- Journal of Applied Mathematics and Computation, Springer

**Member of:**

- Theory Group, *Department of Computer Engineering, SUT*
- Web Intelligence Group, *Department of Computer Engineering, SUT*  
Working on "Online Machine Learning" and "Distance Metric Learning"
- Algorithmic Game Theory Group, *Department of Computer Engineering, SUT*  
Working on "Permutation betting" and "Pricing in Social networks problems".

**Teaching Assistance (TA):**

- Data Mining, *Msc Course, Dept. of Computer Engineering, SUT* Fall 2007  
Duties involved planning and coordinating the research projects and grading home-works.
- Advanced Algorithms, *Msc Course, Dept. of Computer Engineering, SUT* Fall 2008  
Duties involved holding office hours, leading sections, designing and grading home-works and tests.

TEACHING  
EXPERIENCE

**Zanjan University**

- Advanced Database (MSc course) Spring 2008

**Zarandieh Institute of High Education (ZIHE)**

- C Programming Fall 2006
- Algorithm Design Course Fall 2006
- Artificial Intelligence Spring 2007
- Database Spring 2007
- Computer Graphics Spring 2007

**Technical and Engineering Faculty of Bonab, branch of Tabriz University**

- Modern Information Retrieval Fall 2006
- Artificial Intelligence Fall 2006
- Algorithm Design Spring 2006
- Data Structures Spring 2006

## COMPUTER SKILLS

- Languages: Groovy, Java, C++, Pascal, MPI parallel processing library, OpenGL
- Databases: Oracle, MySQL
- J2EE:
  - Test: JUnit, EasyMock, DbUnit
  - Web: JSP, Servlet, JSF, GWT, AJAX
  - Enterprise: EJB3, ActiveMQ, RMI, Hibernate, Doozer
  - Framework: Seam, Rails
  - Container: JBoss, Tomcat, Jetty
  - Build: Ant, Maven, Gant
  - Subversion: CVS, SVN, Git
  - General: AspectJ, GEF, oAW, OSGi, Drools, jBPM, Reflection
  - Public Tools: Eclipse, Jira, Mylyn, Confluence
- Software Engineering:
  - Design: Object Oriented Design, Domain Driven Design, Test Driven Design, Behaviour Driven Design
  - Methodology: RUP, Agile (XP and Scrum)
  - Patterns: Enterprise, OO, Enterprise Integration
- Typesetting: L<sup>A</sup>T<sub>E</sub>X, T<sub>E</sub>X, Microsoft Office

## WORK EXPERIENCE

- Persian E-commerce Co., E-commerce project Feb. 2004 - Sep. 2005  
Involved in developing e-commerce infrastructure for Persian Bank of Iran.
- DP Co. : ISMN (Iran Switch Management Network) project Jan. 2006 - Jan 2007  
Involved in a nationwide project for managing communication switches in all of the country.
- ITOrbit Co.: SPL (Software Product Line) project Feb. 2007 - present  
Involved in developing a software based on Software Product Line paradigm.

## TEST SCORES

- **TOEFL IBT** (January 5, 2008) : 108/120  
Reading ( 27/30), Listening ( 29/30), Speaking ( 28/30), Writing ( 24/ 30)
- **GRE General** (October 24, 2008)  
Quantitative (800), Verbal (310), Analytical (3)

## REFERENCES

- **Professor Mohammad Ghodsi**  
Department of Computer Engineering  
Sharif University of Technology  
Email: ghodsi@sharif.edu  
Home Page: <http://sharif.edu/~ghodsi>
- **Professor Ali Movaghar**  
Department of Computer Engineering  
Sharif University of Technology  
Email: movaghar@sharif.edu  
Home Page: <http://sharif.edu/~movaghar>
- **Dr Hassan Abolhassani**  
Department of Computer Engineering  
Sharif University of Technology  
Email: abolhassani@sharif.edu  
Home Page: <http://sharif.edu/~abolhassani>