

Asghar Dehghani

Contact Information

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Education

- **M.Sc. in Computer Science**, New Mexico Institute of Mining and Technology USA
Started: Jan 2010-Present
Thesis Title: Improving the Accuracy of Machine Learning Based Localization in Wireless Sensor Networks
- **B.Sc. in Computer Engineering**, Shahrood University Of Technology Iran 2005 - 2009

Research Interests

- **Machine Learning Theory**
 - Computational learning theory (sample complexity and curse of dimensionality)
 - Tikonov regularization and over-fitting problem in learning machines
 - Semi-supervised learning
 - Non-parametric generative methods
- **Inverse Problems**
- **Optimization**
- **Applications of Machine Learning and Pattern Recognition**
 - NLP
 - Computer vision, medical imaging
 - Bioinformatics, medical knowledge discovery
 - Machine learning-based algorithms in wireless networking

Publication

- **A.Dehghani**, J.Crow, "A Hybrid Regularization Term toward Learning with Noisy Data", In preparation for submission
- J. Zheng, **A. Dehghani**, R. Lee, "Range-free Localization in Wireless Sensor Networks with Neural Network Ensembles" Expert Systems with Applications Journal (to be appeared)
- **A.Dehghani**, J. Zheng, "A New Method to Generate Virtual Samples for Solving Small Sample Set Problems", accepted, ICMLA 2011
- J. Zheng, **A. Dehghani**, "LNNE: A Neural Network Ensembled-Based Localization Algorithm in Wireless Sensor Networks" International Conference on Parallel and Distributed Computing and Systems, 2011 Dallas
- **A.Dehghani**, O.Oduba, R.Reiss, "Cytoinformatic Investigation of Metabolic Dysfunction: A Machine Learning Approach to Identify Non-Coding RNA Rich Regions ", a poster on NMBIS 2011 - New Mexico Bioinformatics and Science Symposium, Santa Fe NM

Professional Experience

- **National Center for Genome Resources (NCGR: <http://www.ncgr.org/>) Santa Fe, USA**
Research Intern, Summer 2011
 - Applying statistical machine learning techniques in bioinformatics
 - Sequence alignment algorithms and short-read sequencing analysis
 - Developing bioinformatics tools

- **Department of Computer Science, New Mexico Institute of Mining and Technology**
Graduate Research Assistant Jan 2010- Present
 - Machine learning theory (Regularization theory and over-fitting problem, sample complexity and curse of dimensionality)
 - Applied machine learning (Bioinformatics, localization in wireless sensor networks, medical imaging)
- **Andishe-Pardaz Company, Shiraz, Iran Senior Programmer, Data Analyst**
2005-2009 (Part-time)
 - Software developer
 - Principle data scientist (data mining and machine learning) 2008-2009

Summary of projects:

 - Implementing the Shiraz University of Medical Sciences global database of otology surgery (FOSDB) system for purpose of knowledge discovery (risk factor discovery, Predictive model construction)
 - Contributing in research and implementing of an OCR engine for Persian Language (machine learning and computer vision)
 - Implementing a data warehousing and reporting system for Middle-East Heart Committee in Iran-Shiraz (<http://www.icrj.ir/UI/Pblc/Home.aspx>)
- **Pars-System Consultants, Tehran, Iran Software Developer Intern Summer 2008**
 - Applying OLAP techniques for business intelligence
 - Applying data mining techniques for costumer behavioral model estimation
- Supported as research assistant at New Mexico Institute of Technology (2010-2011)
- Travel grant award by New Mexico Institute of Technology (twice)
- Second ranked student in my undergraduate study

Honors and Awards

Skills

- **Programming Languages** (Java, C#.Net , Perl, C/C++ , Delphi, Matlab)
- **Web technologies** (JSP, ASP, Ajax, SOA, PHP)
- **Tools** (WEKA, Rational Rose, Hadoop)
- **Databases** (DB2, SQLServer, MySQL)

References

- Dr. Andrew Sung, Professor, Computer Science Department, New Mexico Institute of Mining and Technology, Phone: (575) 835-5949, Email: sung@cs.nmt.edu
- Dr. Mehdi Pirooznia, M.D., Ph.D., Research Associate Faculty, The Johns Hopkins University, School of Medicine, Department of Psychiatry, Phone: (410) 502-5740, Email: mpirooz1@jhmi.edu
- Dr. John A. Crow, Vice President of Informatics, National Center of Genome Resources (NCGR), Santa Fe, New Mexico, Phone: (800) 450-4854, Email: jac@ncgr.org
- Dr. Rebecca A. Reiss, Associate Professor, Biology Department, New Mexico Institute of Mining and Technology, Phone: (575) 835-5347, Email: reiss@nmt.edu