Mohammad Mahdi Kamani

Curriculum Vitae

Education

2015–Present **M.Sc. in Information Sciences and Technology**, *Pennsylvania State University*, State College, PA, USA, GPA: 3.9/4.

2013 – 2015 **M.Sc. in Electrical Engineering, Communication Systems**, *Sharif University of Technology*, Tehran, Iran, GPA:3.85/4.

2008 – 2013 **B.Sc. in Electrical Engineering, Communications**, *Sharif University of Technology*, Tehran, Iran, GPA: 3.51/4.

Honors and Awards

2016 **NSF Travel Award**, International IEEE Big Data Conference

2013 Ranked **19th** in the Nationwide Electrical Engineering University Entrance Exam for postgraduates students (among 40,000 participants)

2008 Ranked **7th** in the Nationwide Mathematics and Physics University Entrance Exam (among 300,000 participants)

2008–Present Member of the National Organization of **Exceptional Talents** in Iran

2008–Present Member of the organization of **Exceptional Talents** at Sharif University of Technology

2006 Accepted in the first stage of **National Chemistry Olympiad** (Ranked 4th among 10,000 participants)

Research Interests

- **Machine Learning**
- **Data Analysis**
- **Pattern Recognition**
- **Computer Vision**
- **Big Data & Data Mining**
- **Business Intelligence**
- **Signal Processing**
- **Image Processing**

Publications

Under Review Mohammad Mahdi Kamani, Farshid Farhat, Stephen Wistar, and James Z. Wang. Skeleton matching with applications in severe weather detection. *Applied Soft Computing, Elsevier*, Under Review.

2016 Mohammad Mahdi Kamani, Farshid Farhat, Stephen Wistar, and James Z. Wang. Shape matching using skeleton context for automated bow echo detection. In *2016 IEEE International Conference on Big Data*. IEEE, 2016.

310 Information Sciences and Technology Building
University Park, PA 16802
✉ *kamani@psu.edu* • *www.mmkamani.ir*

2015 Mohammad Mahdi Kamani. Image processing in paintings using multispectral imaging. Master's thesis, Electrical Engineering Department, Sharif University of Technology, Iran, 2015.

Research Experience and Selected Academic Projects

Severe Weather Forecasting

2015–Present **NSF Research Project**, *Advisor: Prof. James Z. Wang*.
In this project we use radar images and apply a novel shape matching technique, along with machine learning algorithms, in order to detect bow echo patterns, which are associated with severe weather conditions.

Image Processing in Cultural Heritage

2013–2015 **Master Thesis**, *Advisors: Prof. Marvasti & Prof. Amini*.
Using Image Processing techniques and Multiband, high resolution images from works of some noted painters in Europe such as Monet in order to investigate them. The ultimate aim of this project is to design a system, which can compare differences in each band layers automatically, and reveal hidden objects in paintings.

Fuzzy Speech Recognition

2011–2012 **B.Sc. Thesis**, *Advisor: Prof. Bagheri Shouraki*.
In this research we investigate former techniques for speech recognition such as Hidden Markov Models (*HMM*), along with our novel fuzzy algorithm called Fuzzy Elastic Matching Machine (*FEMM*). Results reveal that FEMM outperforms HMM specially in noisy envrionments.

Miscellaneous

2014 **Data Networks Project**, *Prof. Pakravan*.
Implementation of Asynchronous Reservation-Based MAC Protocol (MACA/PR) on Opnet

2013 **Adaptive Filters Project**, *Prof. Babaizadeh*.
implementation of different kind of Adaptive Filters for Noise cancelation applications in Audio and Image signals

2011 **Conference on Future Trend of Communications**, *Prof. Fotowat Ahmadi*.
Presentation of a lecture session on the first National Communication Conference on Future Trend of Communications

2010 **Conference on Smart Grid**, *Prof. Fotowat Ahmadi*.
Presentation of a lecture session on the first National Conference on Smart Grid about Phase Measurement Units (PMU)

2010 **Summer Research**, *Prof. Fotowat Ahmadi*.
Research experience on Phase Measurement Units (PMU) in avoshCom Asia R&D Group

2010 **Chromosome Detection Project**, *Prof. Khalaj*.
Implementation of Decision Trees for Chromosome Image Processing Software

2010 **Introduction to C++**, *Prof. Nazerfard*.
Implementation of simplified Excel Software using C++

2009 **Principal of Electronics**, *Prof. Fotowat Ahmadi*.
Design and Implementation of Function Generator

Teaching Assistance Experiences

2016 **Knowledge Management**, *Prof. Guoray Cai*, PennState University.

2016 **Visual Analytics**, *Prof. Guoray Cai*, PennState University.

2014 **Data Networks**, *Prof. Pakravan*, Sharif University of Technology.

2014 **Communication Circuits**, *Prof. Fotowat Ahmadi*, Sharif University of Technology.

2011 **Digital Signal Processing**, *Prof. Shams-o-Ilahi*, Sharif University of Technology.

2010 **Electronic Principles and Laboratory**, *Prof. Shaabani*, Sharif University of Technology.

2009 **Electronic Principles and Laboratory**, *Prof. Fotowat Ahmadi*, Sharif University of Technology.

Computer skills

Advanced **Matlab**(8+ years), **C/C++** (8+ years), **ImageJ** (4+ years), **SQL Server (SSMS, SSIS, SSAS)** (5+ years), **Sharepoint**(5+ years), **LaTeX**(6+ years)

Intermediate **Python**(2+ years), **Java**(1+ years), **HTML** & **CSS**(4+ years), **OpenCV**(2+ years), **Opnet** & **Network Simulator** (NS2 and NS3)(1 year), **AWR Design envrionment** & **Microwave Office**(1 year), **PSpice** & **Orcad**(4 years)

Basic **ArcGIS**(1 year)

Work Experiences

2013 – 2015 **Business Intelligence**, *BI Manager*, Tadbir Pardaz Ltd.

Implementation of **Business Intelligence** based on SQL server services on Automation Reports in Total Broker Solution (TBS). In this project I was responsible for ETL process, creating star schema databases, making data cubes, and visualizing data in different platforms.

2012 – 2015 **Business Intelligence**, *BI Manager* , Tadbir Pardaz Ltd.

Implementation of **Business Intelligence** based on SQL server services on Mutual Funds in Capital Market of Iran. In this project I was responsible for ETL process, creating star schema databases, making data cubes, and visualizing data in different platforms.

Extracurricular Activities

2012–Present *Sports:* **NEARU** Martial Arts, Current level: Purple Belt

2009 –2014 *Music:* **Violin**, Pars School of Music

Languages

English **Fluent**

Persian **Mother tongue**

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