Ahmad Asadi

Curriculum Vitae

"The greatest of wealth is the richness of the soul."
Prophet Muhammad (SAVS)

Education

2015–now **Master of Science**, *Amirkabir University of Technology*, Tehran, *Computer Vision and Computational Intelligence Lab*.
Under supervision of prof. Reza Safabakhsh

2011–2015 **Bachelor of Science**, *Amirkabir University of Technology*, Tehran, *GPA – 3.71 out of 4 in WES*.
Specialized in Software Engineering

2007–2011 **High School**, *Shahid Beheshti High School(Sampad)*, Rey, *GPA – 18.30 out of 20*.
National Organization for Development of Exceptional Talents

Experience

Work Experience

2013–now **Web Designer**, Rayan Pardazan Nikro Emertat (RAPNA), Tehran.
Web designer and web development team leader of RAPNA Co.

2014–2015 **Programmer**, Tosan Intelligent Information Systems (SOHATO), Tehran.
Programmer responsible for server side of selling traffic labels on USSD infrastructure. This project was founded by Tehran's municipal.

2013–2014 **Programmer**, Mobin Mahsaz Sharif, Tehran.
Programmer responsible for server side of "Dortan" project, an android application being used with people wanting to decrease their weights under supervision of well educated coaches.

2012–2013 **Programmer**, Pasargad Hirsa Quality (PHQ) holding, Tehran.
Programmer responsible for "Performance Management System" project founded by Eqtesan Novin Bank in first phase

19 Nouri St., Javadieh, RahAhan Sq. – Tehran, Iran 13656-19963
(+98) 936 860 2287 • ahmad.asadi.ir@gmail.com • Linkedin
Research Assistant at Amirkabir University of Technology

Selected Projects

1 **Persian Comment Moderator**, *Implementation in progress*, Start up.
This project is being implemented in order to provide a web service for web sites, web apps, social networks and news agencies to protect user comments online, filter profanities, spam bots, reject advertisements and several other services.

2 **Hand Pose Recognition**, *Improvements in progress*, Computer Vision Course.
This project has been implemented in order to provide an API for intelligent systems to make them able to get visual orders by hand poses from their users.

Detailed approach:
- Used resolution pyramid to speed up the process
- Used Gabor filters to extract hand region
- Used SIFT, HOG and a set of defined features for classification

Achievements:
- Classification of 10 different classes of hand pose (Accuracy: 90%)
- Near real time image classification
- Applicable to frame classification in recognition of visual orders in a sequence of frames.

Future Works:

3 **Quadrotor Movement Detector**, *Accomplished*, Computer Vision Course.
This project has been implemented in order to detection of speed velocity and direction of quadrotors just in time. The main framework of motion analysis following in this project is the *optical flow* analysis approach.

4 **News Classification**, *Completed*, PGM Course.
This project has been implemented in order to classification of 20_newsgroups dataset, a collection of 20 classes of news articles, using naive bayes classifier.

5 **Image Segmentation with Markov Random Fields**, *Completed*, PGM Course.
This project has been implemented in order to propose a Markov random field segmenting gray level and RGM images using simulated annealing to find the best parameters.

6 **MNIST classification using CNN**, *Completed*, ANN Course.
This project has been implemented in MATLAB using MatConvNet to generate a CNN to classify the MNIST characters dataset.

AI Related Works

NOW **Image Auto Captioning using Deep CNNs and RNNs**, *MSc. Thesis*, Amirkabir University of Technology, under supervision of Prof. Reza Safabakhsh.
An application to generate captions for images automatically. Images are not limited to any conditions and captions are not allowed to be in a fixed template format. Generated descriptions should well describe the displayed scene in the image containing objects, their relations, activities and scenes in the images. Also, They are supposed to be syntactically and grammatically correct and well shaped.

Highlighted Features:
- Using multiple instance learning in order to learn phrasal descriptors for each meaningful part of an image.
- Using R-CNN approach to find object regions in images.
- Using RNNs to generate natural language text according to feature vector generated from image understanding step.
- Using bidirectional language translation measures in order to estimate correctness of generated sentences

2015 **Text Auto Filtering**, *BSc. Project*, Amirkabir University of Technology, under supervision of Dr. Ahmad Nickabadi.

An application working on Persian informal short comments, extracting their sentiment and considering social constraints, automatically filtering abnormal and inappropriate comments, using a combinational approach of rule based and statistical models.

Detailed approach:

- Used a rule-based approach to certainly rejecting or approving sentences, making evident improvement in learning phase accuracy by omitting certain sentences including more than 60% of dataset.
- Used statistical approach (LDA algorithm) to model sentences do not be decided by rule-based module.

Achievements:

- Meeting need to 32 operators for approving or rejecting comments manually.
- Satisfying users waiting long times for comment apprivement from operators and be able to see their comments.
- Reducing a large amount of receiving double comments from client side.

2014 **Generating Conceptual Maps of Articles**, Amirkabir University of Technoloty.

An application extracting an articles keywords, finding keyword relations with contribution of using related verbs used in article and drawing conceptual map of article using association rules.

2016 **Necrotizing Enterocolitis (NEC) Detection**, Shahid Beheshti Hospital, Kashan.

An application figuring out babies suffering from NEC using multilayer perceptrons.

2015 **Stock Prediction**, Occupation of free times!, Tehran.

A Matlab implementation of Elman stochastic sequence predictor neural network to predict real stock data of some indexes.

Teaching Assistants

Spring 2016 **Algorithm Design**, *Under supervision of Dr. S. R. Mousavi*.
Responsibilities include giving lectures, giving exercises, defining final project and grading

Spring 2014 and Fall 2014 **Compiler Design**, *Under supervision of Dr. M. R. Razzazi*.
Responsibilities include giving lectures and grading

Fall 2014 **Design of Programming Languages**, *Under supervision of Dr. M. S. Fallah*.
Responsibilities include holding discussion sessions around given exercises

Spring 2014 **Discrete Mathematics**, *Under supervision of Dr. M. S. Fallah*.
Responsibilities include holding discussion sessions around given exercises

Spring 2014 and Fall 2014 **Software Engineering 1**, *Under supervision of Mr. B. Pourvatan*.
Responsibilities include giving lectures, giving exercises and grading

fall 2013 and Fall 2014 **Data Structures**, *Under supervision of Dr. M. Dehghan T. F.*.
Responsibilities include giving lectures and grading

Fall 2013 and Fall 2014 **C Programming**, *Under supervision of Dr. B. Bakhshi S.*.
Responsibilities include giving lectures and grading

Spring 2014 **Advanced Programming (Programming in JAVA)**, *Under supervision of Mr. B. Pourvatan*.
Responsibilities include giving lectures, giving exercises, defining final project and grading

Awards

2015 1st place in Computer National Olympiad among Tehran's students in semi-final competition

2015 12th place in Computer National Olympiad among Iran's students in final competition

2015 1st place in "Deminer Robots" League in AUT CUP.

2015 1st place in "Deminer Robots" League in Iran Open 2015.

2014 Data Mining Cup, 21st place as a member of university's expedited team, Berlin, Germany

2014 2nd place in "Deminer Robots" League in Iran Open 2014.

2013 2nd place in "Deminer Robot's Technical Challenge" League in Iran Open 2013

2010 Ranked top 0.5% in the Nation Wide University Entrance Examination among all Iranian Students(among 360,000 participants, Rank 1511)

Computer skills

Advanced Java/SE/2EE, C/C++, Matlab, OpenCV, Web Development Languages, AVR Microprocessors_Programming(using codevision in C), Weka, Linux, LaTeX

Intermediate Java Spring, Struts and Hibernate frameworks, C#, Visual Studio

Basic R, PYTHON, Android programming

Languages

Persian **Native**

English **Professional**

Turkish **Intermediate**

Interests

- Travelling
- Philosophy
- Listening to artworks of Alireza Ghorbani and Siavash Ghomayshi
- Cognitive Science
- Teaching
- Hanging out with my family

19 Nouri St., Javadieh, RahAhan Sq. – Tehran, Iran 13656-19963
(+98) 936 860 2287 • ahmad.asadi.ir@gmail.com • Linkedin
Research Assistant at Amirkabir University of Technology