AliSalehi

Computer Engineer & Machine Learning Researcher

Summary

I am a programmer and researcher, pursuing my Ph.D. degree in Computer Engineering. I have the expertise and interests in machine learning algorithms, especially deep learning methods for solving computer vision problems.

I have **3+** years of industry research and development experience. My current research is focused on developing deep learning algorithms for modeling motion in visual data.

Education

Jan 2017–Present
Expected Dec 2019

Ph.D. Computer Engineering

University of Memphis, Memphis, USA

GPA: 3.98

I am working on developing deep learning algorithms using **tensorflow** in **python** for analyzing medical image sequences.
Related Coursework: Machine Learning(A+), Computer Vision(A+), Bayesian Inference(A+), Statistical Learning(A+)

Sep 2011–Jul 2013

M.Sc. Artificial Intelligence

Sharif University of Technology, Tehran, Iran

GPA: 4.0

Developed a hierarchical feature extraction method in Matlab which uses dictionary learning to encode objects. By using SVM as classifier, the method achieved $\approx$ 49% (state-of-the-art) accuracy on the dataset.
Related Coursework: Digital Image Processing(A+), Digital Video Processing(A+), Neural Networks & Fuzzy Systems(A+), Statistical Pattern Recognition(A)

Sep 2008–Sep 2010

B.Sc. Software Engineering

University of Omran and Toseeh, Hamadan, Iran

GPA: 3.96

Implemented Cellular Learning Automatons to find Edges of objects in an images.
Related Coursework: Data Structures and Algorithms, Advanced Computer Programming, Discrete Structures, Object Oriented Programming, Software Engineering 2

Sep 2006–Sep 2008

A.Sc. Software Engineering

Malayer University, Hamadan, Iran

GPA: 3.66

Using **ASP.NET**, **C#** and **SQL Server**, implemented a web based system for students to fill out their loan request forms online. It reduced paper consumption (**10** pages per request) and made the request process easier (**85%** of the 20 test users found it easier).
Related Coursework: Fundamental of Computer Algorithms, Computer Architecture, Computer Networks, Database Design, Information Retrieval, Internet Engineering, Programming Languages, Web Programming, Software Engineering 1, Operating Systems

Work Experiences

Mar 2015–Jan 2017

FANAP ICT Co.

Tehran, Iran

Computer Vision Researcher & Senior Software Developer

- Developed a real-time commercial vehicle type classifier in **C++** which is embedded in a large-scale commercial road surveillance system.
- Improved accuracy of a commercial plate recognition system from **94%** to **96%** by designing a Convolutional Neural Network method.
- Reduced the processing time of the vehicle detection module from **20** milliseconds to **7** milliseconds by utilizing Background Subtraction algorithms which had a huge impact on the frame rate of the system.
- Developed vehicle distance and speed detection algorithms.
- Implemented a cross-platform version of the algorithms (Linux, Windows PCs, and Raspberry Pi systems.

Technical skills: **Scrum**, **Git**, **C++**, Visual Studio, OpenCV, Multithreaded programming in C++, **Caffe**

Contact

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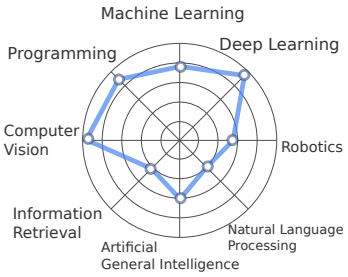
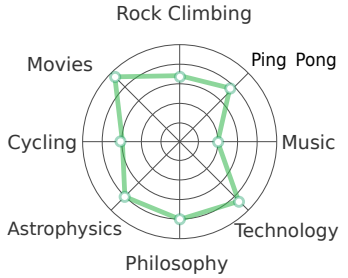
Programming

C++/C ●●●●○
Python ●●●●○
Matlab ●●●●●
C# ●●●●○

Professional Interests



Personal Interests



Jul 2013–Mar 2015 **FANAP ICT Co.** Tehran, Iran
Technical Manager & Software Developer

- Managed the operations of a web development team.
- Design, implement and deploy about **10** modules for an e-commerce system.
- Optimized the whole website by updating all of its core modules. This increased the website speed by about **60%**.
- Worked closely with DBAs, system and network engineers to ensure web system stability.
- Collaborated with other departments of the company to plan and develop high-quality products.
- Managed and developed all the projects based on the Agile methodology.

Technical skills: **PHP**, **MySQL**, **Git**,

Sep 2010–Sep 2011 **Technical and Vocational Training Organization** Hamadan, Iran
Lecturer

- Taught high school students programming languages (C, C++, Pascal)
- Maintained computer lab with over thirty networked stations, including one server.
- Worked closely with more than 200 students to design fun projects.

Projects

Aug 2017–Nov 2018 **Collaborative Filtering Based Recommender System** University of Memphis
Machine learning course project
Implemented a recommender system in **python** to solve the **Netflix** problem. Given just previous ratings of the users in the database to some movies, the code predicts their possible ratings to other movies in the list that they haven't seen so far.
Technical skills: Python, **Sckikit-learn**

Aug 2017–Nov 2018 **Multimodal Variational Autoencoder** University of Memphis
Independent project
Designed a multimodal autoencoder using **Tensorflow** in Python to map images and corresponding audio to a shared representation that makes it possible to complete noisy data and generate one modality using another one.
Technical skills: **Python**, Tensorflow, **Tensorboard**

Dec 2015–Mar 2016 **Intelligent Billboard** FANAP ICT Co.
Work project
Using **Caffee** and **OpenCV** in **C++**, designed an intelligent billboard that uses deep learning based face recognition methods to recognize the age range and gender of a person who looks at it in order to present appropriate advertisements. The accuracy of the first version was **81%**.
Technical skills: C++, OpenCV, Caffee

Apr 2011–Jul 2011 **Fuzzy Robot Controller** Soshiant Robotics Team
Robotic team project
Developed a sensor based obstacle avoidance controller for a mobile robot using Fuzzy Logic in **visual C#** to operate in unknown environments. This controller increased exploration of the robot by **40%**.
Technical skills: visual C#, Virtual Robot Simulation

Activities & Leadership

Jan 2017–May 2018 **Electrical & Computer Project Class** University of Memphis
Head Teaching Assistant

- Assisted **40+** students to implement their junior projects including hand gesture recognition system on Raspberry Pi, broken light alarm and baby temperature monitoring systems using **Arduino** and smart mirror with face detection system on **Raspberry Pi**.
- Assisted students to debug their codes in **Python** and **C**.

Softwares/Frameworks

Deep learning
Tensorflow ●●●●○
Caffee ●●●●○
Keras ●●○○○
Scikit-learn ●●●●○
Matlab toolbox ●●●●●
Numpy ●●●●●

Image processing
OpenCV ●●●●○
Matlab Toolbox ●●●●●

Operating Systems
Linux (Ubuntu) ●●●●○
Windows ●●●●●

Typesetting
LaTeX ●●●●○
MS Word ●●●●●

Electronics Platform
Raspberry Pi ●●●○○
Arduino ●●●○○

Version Control
Git ●●●●○
SVN ●●●○○

Software Methodology

Scrum ●●●●○
Waterfall ●●●○○

Langues

English (TOEFL:**104**)
Farsi (native)
Azari (native)

Sep 2012–Feb 2013

Machine Learning Class
Sharif University of Technology

Teaching Assistant

- Assisted **30+** graduate students in developing their final projects for the course.
- Held weekly problem solving sessions for 30+ students.

Sep 2010–Oct 2011

Soshiant Robotics Team
Bu-Ali Sina University

Volunteer Developer

- Improved **40%** in exploration of the rescue robot by designing a fuzzy obstacle avoidance controller.
- Reduced exploration time about **60%** by optimizing its decision-making module.

Dec 2006–Sep 2008

Science Student's Association
University of Malayer

President

- Organized several scientific and social events for **500+** attendees each time
- Published about 10 magazines and newsletters
- Held several workshops for 50+ students each time

Nov 2015

Publication
Foundation of Computer Science (FCS), NY, USA

Asgari, F., **Salehi, A.** Biologically Inspired Hierarchical Temporal Memory model for Farsi handwritten digit and letter recognition, International Journal of Computer Applications 129(16):6-11, November 2015. Published by Foundation of Computer Science (FCS), NY, USA.

Honors & Awards

May 2018

Graduate Herff Fellowship
University of Memphis

Award recipient

- One of the two recipients of the Herff Fellowship with financial support for conducting doctoral dissertation research work among 30+ graduate students.

Dec 2014

Outstanding Employee Award
FANAP ICT Co.

Award recipient

- Selected as distinguished employee for consistently performing high quality work as member and manager of the technical team.

Aug 2011

National Graduate University Entrance Exam
Tehran

Honored as Top 0.01%

- Ranked top **0.01%** in the nationwide university entrance exam for graduate degree among **300k+** competitors.
- Received full scholarship for a M.Sc. program in computer engineering.

Sep 2010

Top Student Award
University of Omran and Toseeh

1st Rank

- **1st** Rank, in Cumulative GPA among **100+** B.Sc. software engineering students of the department, 2008 beginners.

Sep 2008

Top Student Award
University of Malayer

1st Rank

- **1st** Rank, in Cumulative GPA among **40+** A.Sc. software engineering students of the department, 2006 beginners.