Ali Gholami

COMPUTER ENGINEERING & INFORMATION TECHNOLOGY DEPARTMENT
AMIRKABIR UNIVERSITY OF TECHNOLOGY
ceit.aut.ac.ir/~aligholamee
aligholamee@aut.ac.ir

[꒦] [in] [🐙]

EDUCATION

B.S. Computer Engineering @ AMIRKABIR UNIVERSITY OF TECHNOLOGY
[Global Rank of 97 in CE] @ USNEWS   GPA: 3.6/4
[National Rank of 2] @ ARWU

Mathematics & Physics Diploma @ KAMAL HIGHSCHOOL   GPA: 19/20

RESEARCH INTERESTS

- Visual Question Answering
- Image Captioning
- Image Segmentation
- Deep Learning

RELATED COURSES

Machine Learning @ AMIRKABIR UNIVERSITY OF TECHNOLOGY
Computer Vision @ UDACITY
Deep Learning @ UDACITY
cs231n @ STANFORD UNIVERSITY

RESEARCH EXPERIENCE

CEIT @ AMIRKABIR UNIVERSITY OF TECHNOLOGY   Dec 2018 – Present
Computer Vision — Pattern Recognition

- Implementation of *AlexNet CNN* architecture using *Tensorflow*.
- Implementation of a *DCGAN* to draw *MNIST* characters using *Tensorflow*.
- Implementation of a *Variational Autoencoder* using *Tensorflow*.
- Implementation of various *Deep Learning* techniques using *Tensorflow*.

TECHNICAL REPORTS

Statistical Pattern Recognition
Advisor: Prof. Mohammad Rahmati
- *Introduction to Linear Algebra – Statistics – Probabilities*   [docs]
- *LDA & QDA – Bayesian Classification – Error Bounds*   [docs]

Data Mining
Advisor: Prof. Ehsan Nazerfard
- *Association Rule Mining – Feature Engineering*   [docs]
- *Decision Tree Classifier – Data Cleaning*   [docs]

Design & Implementation of Programming Languages
Advisor: Prof. Mehran S. Fallah
- *Induction & Denotational Semantics – Lambda Calculus*   [docs]
- *Lisp & Garbage Collection – Higher-order Functions*   [docs]
- *Algol & Meta Language – ML Data Types & Patterns*   [docs]
- *Type Safety & Type Inference – Polymorphism*   [docs]

Computer Networks
Advisor: Prof. Siavash Khorsandi
- *Introduction to Computer Networks*   [docs]

- *Packet Transmission Approaches – Congestion Control*   [docs]
- *Queuing & Delay Analysis*   [docs]
- *Queuing & Delay Analysis – Network Protocols*   [docs]

Multi-core Programming
Advisor: Prof. Mahmoud Momtazpour
- *Parallel Architectures – Speedup Metrics*   [docs]

WORK EXPERIENCE	**Internship** @ ARVAN CLOUD	Jun – Sep 2017

Web Application Development
- *HTML, CSS, PHP, Laravel, Javascript, ECMAScript, Node.js, Vue.js, React.js*

Internship @ FANDOGH   Jun – Aug 2017
Mobile Application Development
- *Java, React Native*

TEACHING EXPERIENCE	**T.A.** @ CEIT @ AMIRKABIR UNIVERSITY OF TECHNOLOGY	Sep – Dec 2017

Microprocessors & Assembly Programming
Advisor: Prof. Mahdi Homayounpour

T.A. @ ENG @ KHARAZMI UNIVERSITY OF TEHRAN   Sep – Dec 2015
Foundations of Programming in C++
Advisor: Dr. Azadeh Mansouri

TALKS	**Machine Learning at Scale**	Oct 2017

- Based on the paper *Rules of Machine Learning* by Dr. Martin Zinkevich.

Energy Awareness   July 2017
- Based on the paper *Energy-aware adaptation for mobile applications* by Dr. Jason Flinn.

Metasploit Framework   May 2017
- Introduction to *Metasploit Framework* & *Social Engineering* techniques.

HONORS	**Admitted** to **Amirkabir University of Technology** among all bachelor students at Computer Engineering Department, Kharazmi University of Tehran.	Aug 2018

Ranked top 3 among all bachelor students at Computer Engieering   July 2016
Department, Kharazmi University of Tehran.

Ranked top 0.006 in the Nationwide University Entrance Exam   July 2014
among all students in Mathemathics and physics (approximately 250,000).

SKILLS	**Languages** Persian (*native*), English (*advanced working proficiency*)

Programming *Python, VHDL, C/C++, Java, ARM Assembly, AVR Assembly, Javascript, HTML/CSS, LaTeX, Racket, ML, Scheme.*

Tools & Platforms *Tensorflow, scikit-learn, Numpy, Pandas, Matplotlib, Weka, Arduino, ARM, AVR, CodeVision, Xillinx Vivado, ModelSim, Atmel Studio, Ca-*

dence PSpice, Keil, Dr. Racket, MongoDB, PostgreSQL, MySQL, Visual Studio, TeXstudio.

NOTABLE PROJECTS

Annealing, *Data Cleaning & Preprocessing*
- Preprocessing and cleaning the dataset of annealing. Reached 98% accuracy.
  [docs] [code]

Titanic, *Data Science & Feature Engineering*
- Prediction of Titanic survivals as a part of Kaggle competition. Reached an Accuracy of 83% and Recall of 76%.   [code]

MNIST-Drawer, *Variational Autoencoder*
- Implementation of a *Variational Autoencoder* to draw *MNIST* dataset characters using *Tensorflow*.   [code]

notMNIST, *Convolutional Neural Network*
- Implementation of multiple machine learning classifiers and regularization techniques on the *notMNIST* dataset using *Tensorflow*.   [code]

Freeman, *Hardware Programming & Co-design*
- Implementation of a *Parking Controller* & *Security Controller* using *VHDL*.
  [code]

Numex, *Functional Programming*
- Implementation of an *Advanced Functional Interpreter* using *Racket*.   [code]

Hornburg, *Deep Learning Basics*
- Implementation of *Principal Machine Learning Algorithms* using *Python*. [code]

Iris, *Multi-nomial classification*
- Multi-nomial classification of *Iris* dataset using *scikit-learn*.   [code]

ARMHE, *Advanced RISC Machine Programming*
- Implementation of the *Histogram Equalization* algorithm on the *STMF32F407VGT6* with *ARMv4T* architecture using *ARM Assembly*.   [code]

Cinder, *Low Level Programming*
- Implementation of a basic *Operating System* with *C*.   [code]

Sockets, *Socket Programming*
- Implementation of various types of *Sockets* in *Interprocess Communication* & *TCP/IP Protocol* with *C*.   [code]

Toofan, *Android Application Development*
- Implementation of a *Weather Forecast Application* on the *Android* platform using *Java* & *Android Studio*.   [code]

Huffman, *Huffman Coding*
- Implementation of the *Huffman Text Compression Algorithm* using *Java*. [code]

2048, *C++ Programming*
- Implementation of the *2048 Puzzle Game* with various gameplay tweaks using *C++*.   [code]

Manobase, *VHDL Programming*
- Implementation of the *Morris Mano's Base Computer* using *VHDL*.   [code]