# Ali Gholami


## Contact Information

**Date & Place of Birth:** July 18, 1996 | Tehran, Iran
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## Education

**B.S. Software Engineering**, Amirkabir University of Technology, ***GPA: 3.6/4*** (exp.) 2018

**Mathematics & Physics Diploma**, Kamal Highschool, ***GPA: 19.5/20*** 2014

## Research Interests

- Computer Vision
- Pattern Recognition
- Deep Learning
- Machine Perception

## Research Experience

**Self-education**, Computer Engineering & Information Technology Department Dec 2018 - Present
*Machine Learning | Pattern Recognition*

- Implementation of a *DCGAN* to draw *MNIST* characters using *Tensorflow*.
- Implementation of a *Variational Autoencoder* to draw *MNIST* characters using *Tensorflow*.
- Implementation of various *Regression & Classification* techniques like *Logistic Regression*, *Perceptron*, *Multi-layer Perceptron*, *Gradient Desent*, *Stochastic Gradient Descent*, *L1 & L2 Regularization*, *Dropout*, *Learning Rate Decay*, *Convolutional Neural Networks* using *Tensorflow*.

## Publications & Academic Reports

**Coursework Report**, Computer Engineering & Information Technology Department
*Design & Implementation of Programming Languages by Prof. Mehran S. Fallah* – [Docs]

**Coursework Report**, Mathematics & Computer Science Department
*Machine Learning by Prof. Mohamad E. Shiri* – [Docs]

**Coursework Report**, Computer Engineering & Information Technology Department
*Microprocessors & Assembly Language by Prof. Mahdi Homayounpour* – [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

**Teaching Assistantship**, Computer Engineering & Information Technology Department Sep–Dec 2017
*Microprocessors & Assembly Language by Prof. Mahdi Homayounpour*

**Teaching Assistantship**, Computer Engineering & Information Technology Department Sep–Dec 2016
*Foundations of Programming by Dr. Azadeh Mansouri*

## Talks

**Machine Learning at Scale**, Mathematics & Computer Science Department Oct 2017

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

**Energy Awareness**, Computer Engineering & Information Technology Department July 2017

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

**Metasploit Framework**, Computer Engineering & Information Technology Department — 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 — 2018

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

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

## COMPETENCES

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

## NOTABLE PROJECTS

**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]

## REFERENCES

*Available upon request.*