# Ali Gholami

Computer Engineering & Information Technology Department
Amirkabir University of Technology
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**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

**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**

**Design & Implementation of Programming Languages**
*Advisor: Prof. Mehran S. Fallah* – [docs]

**Machine Learning**
*Advisor: Prof. Mohamad E. Shiri* – [docs]

**Microprocessors & Assembly Programming**
*Advisor: 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

**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 Department, Kharazmi University of Tehran. — July 2016

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

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

## NOTABLE PROJECTS

**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]