

Armin Shafiee Sarvestani

UNDERGRADUATE ELECTRICAL ENGINEERING STUDENT

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Education

Sharif University of Technology

B.S. IN ELECTRICAL ENGINEERING SPECIALIZED IN DIGITAL SYSTEMS

- GPA: 18.44/20.00 - 3.95/4
- Last Two Years GPA: 18.85/20.00 - 3.97/4

Tehran, Iran

Sep. 2016 - Present

National Organization for Development of Exceptional Talents

JUNIOR HIGH SCHOOL AND HIGH SCHOOL - SPECIALIZED IN MATH AND PHYSICS

- GPA: 20.00/20.00

Shiraz, Iran

Sep. 2009 - Sep. 2016

Research Interests

- Deep Learning & Machine Learning
- Video Processing & Image Processing
- Computer Vision
- Artificial Intelligence
- Signal Processing

Research Experience

Multimedia and Signal Processing Lab | Sharif Uni. of Tech. - Video Quality Assessment Project, Distinguishing Up-scaled Videos from Original Videos for Every Possible Resolution, Detecting the Rate of Up-scaling, Detecting the Software Used to Upscale the Video(In Progress), Developing a Generative Adversarial Network (GAN) to Upscale Original Videos(Our Next Goal), All by Deploying Deep Neural Networks.

RESEARCH ASSISTANT UNDER SUPERVISION PROF. ARASH AMINI

Feb. 2020 - Present

- achieving 99.33% accuracy on test data-set of 744 videos in the task of distinguishing Up-scaled videos from Original videos.
- achieving 96.12% accuracy on test data-set of 232 videos in the task of detecting the rate of up-scaling.
- Collecting a vast data-set of short (10-30 seconds) original videos with different resolutions such as 1080p, 720p, 480p and etc.
- Upscaling gathered original videos to different resolutions using five famous and sophisticated software applications, leading to 90GB dataset of videos till now.
- Extracting different features from video frames, focusing on 2D FFT of the frames as well as measuring blurriness of the frames.
- Working with different Deep learning frameworks, focusing on PyTorch and Keras, and utilizing the best features these frameworks offer.
- Working with PyTorch C++ API (libtorch) to Define our neural networks in C++ to add our developed models into "Namakav" software
- Working with OpenCV library in C++ and Python and getting skilled in using its functions and features to optimize different image processing codes.

Secure Communications and Machine Learning Lab | University of Tehran - Developing a Convolutional Neural Network for Classification Task on Google "Quick, Draw!" Huge Data-set, Real-time Painting Classification by Designing a Software Application Like Google "Quick, Draw!".[\[GitHub\]](#)

RESEARCH INTERN UNDER SUPERVISION PROF. HAMID BEHROOZI AND PROF. MOHAMMAD ALI AKHAEI

Jul. 2019 - Sep. 2019

- Learning basic concepts of Deep Learning, Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN), Long Short-Term Memory (LSTM) and etc.
- Learning PyTorch, Keras and TensorFlow and working with these frameworks.
- Working with different Python libraries such as Numpy, SciPy, Pandas, Scikit-learn, Seaborn, PIL and etc.
- Learning PyQt5 library and developing a software application where user can draw an image to be guessed by the developed model.

Tehran, Iran

Technical Skills

High Level Languages	Python, C/ C++, MATLAB, Java.
Other Languages	Verilog, CUDA GPU Programming, Bash Script, MIPS/ARM/AVR Assembly.
Machine Learning	TensorFlow, PyTorch, Keras, Scikit-learn, Numpy, Pandas, OpenCV, Gensim, PIL.
Simulation and Design	Xilinx ISE, MPLAB, ModelSim, Quartus, Proteus, Mars, PSpice, HSpice, Altium Designer.
Operating Systems	Ubuntu

Honors & Awards

2020	Ranked 3rd among 30 Students , of Digital Systems Specialization, Department of Electrical Engineering, Sharif University of Technology	Tehran, Iran
2020	Ranked in the top 10% , Department of Electrical Engineering, Sharif University of Technology	Tehran, Iran
2016 - Present	Recipient , of the grant for undergraduate students, courtesy of the National Elite Foundation	Tehran, Iran
2016 - Present	Member , of the National Elite Foundation of Iran	Tehran, Iran
2016	Ranked 46th among 160000+ Students , National University Entrance Exam - Math and Physics	Shiraz, Iran
2009	Admitted , in the entry exam to NODET High Schools (National Organization for the Development of Exceptional Talents)	Shiraz, Iran

Selected Course Projects

Design and Implementation of Deep Learning Models for Image Captioning Task on COCO Data-set, Using Transfer Learning and Data Augmentation for Training CNN Model to Extract Features (While Reaching 97.3% Accuracy on Test Data-set), Using Pre-trained CBOW Model for Word Embeddings, Using Attention Layer and Bidirectional LSTM for Training RNN Model to Generate Captions.[\[GitHub\]](#)

SUPERVISED BY PROF. E. FATEMIZADEH

Fall 2019

Design and Implementation of Conditional Variational AutoEncoder (C-VAE) as Well as Generative Adversarial Network (GAN) on MNIST Data-set.[\[GitHub\]](#)

SUPERVISED BY PROF. E. FATEMIZADEH

Fall 2019

Implementation of LSTM-Based Seq2Seq Encoder-Decoder and Skip-Gram Models on a Persian Text Data-set Called 'Shahname Ferdowsi'.[\[GitHub\]](#)

SUPERVISED BY PROF. E. FATEMIZADEH

Fall 2019

Analysing "Titanic" Data-set and Extract Useful Features by Data Analysis Techniques as Well as Implementation and Optimization of Logistic Regression, K-NN, SVM, Naive Bayes Classifier, Random Forest and Neural Network Methods on the Analysed Data-set to Achieve Highest Possible Accuracy on Classification Task(Predicting the Survival of Titanic Passengers), Reaching 92% Test Accuracy, Graded as the Best Work of the Course.[\[GitHub\]](#)

SUPERVISED BY PROF. S. SALEH KALEYBAR

Fall 2019

Design and Implementation of a CNN Model with the Least Number of Layers Possible to Achieve 90+ Accuracy for Classification of CIFAR-10 Data-set, Using Different Techniques Like Data Augmentation and Learning Rate Scheduling, Graded as the Best Work of the Course.[\[GitHub\]](#)

SUPERVISED BY PROF. S. SALEH KALEYBAR

Fall 2019

Implementation of K-NN Classification Algorithm Using CUDA on a GPU, Which was Capable of Classifying Huge Data-sets of up to 2^{30} Samples Efficiently and Fast.[\[GitHub\]](#)

SUPERVISED BY PROF. M. HASHEMI

Spring 2019

Implementation of Hough Transform Method to Detect Lines and Circles in Both Noisy and Original Images in MATLAB. [\[GitHub\]](#)

ONLINE COURSE

Fall 2020

Implementation of Wireless LAN Physical Layer (PHY) Standard Both in Transmitter and Receiver Ends on FPGA.

SUPERVISED BY PROF. M. SHABANY

Spring 2020

Implementation of Safety Box Password Panel in ISE Design Suit Using SPARTAN6 FPGA.

SUPERVISED BY PROF. N. MOHAMMADZADE

Fall 2017

Implementation of Pipe-lined MIPS Multi-Cycle and Single-Cycle Datapath and Controller. [\[GitHub\]](#)

SUPERVISED BY PROF. M. MOVAHEDIN

Spring 2018

Simulation of 4-QAM Digital Communication System Using LMS Algorithm-based Equalizer for the Channel Equalization. [\[GitHub\]](#)

SUPERVISED BY PROF. H. BEHROOZI

Fall 2018

Implementation of PAM in Binary Digital Communication. [\[GitHub\]](#)

SUPERVISED BY PROF. H. BEHROOZI

Spring 2018

Implementation of a Semi-Graphical Game in C Language, As the Final Project of Principles of Computer Programming Course

SUPERVISED BY PROF. R. TAHERKHANI

Fall 2016

Designing Amplifier of Temperature Dependent Torque Generator

SUPERVISED BY PROF. M. FAKHARZADEH

Spring 2018

Teaching Experience

Fall 2020 **Deep Learning(Graduate Course)**, Task: TBD

Prof. E. Fatemizadeh

Fall 2020 **Machine Learning**, Task: TBD

Prof. S. Saleh Kaleybar

Fall 2020 **Computer Architecture and Microprocessors**, Head TA of the course, Lab assistant, Homework and exam grading

Prof. S. Bagheri Shouraki

Spring 2020 **Pulse Technique and Digital Circuits**, Homework grading

Prof. S. Bagheri Shouraki

Fall 2019 **Computer Architecture and Microprocessors**, Lab assistant

Prof. S. Bagheri Shouraki

Spring 2019 **Computer Architecture and Microprocessors**, Lab assistant

Prof. M. Hashemi

Spring 2019 **Signals and Systems**, Holding Tutorial Class on MATLAB

Prof. H. Behroozi

Selected Courses

- Deep Learning (Special Topics in BioMed) (Graduate Course), 19.5/20.0, Prof. E. Fatemizadeh
- Machine Learning, 19.8/20.0, Prof. S. Saleh Kaleybar
- Principles of Image Processing, Ongoing Audited Course
- Introduction to Computer Vision, Ongoing Online Course

- Machine Learning, Online Course, Prof. Andrew Ng
- Data Structures and Algorithms, 18.4/20.0, Prof. S. Saleh Kaleybar
- Parallel Programming (Graduate Course), 19.0/20.0, Prof. M. Hashemi
- Digital Signal Processing, 19.0/20.0, Prof. M. Babaie-Zadeh
- Probability and Statistics, 19.3/20.0, Prof. M. Nayebi
- Computer Architecture and Lab, 20.0/20.0, Prof. M. Movahedin
- Pulse Technique and Digital Circuits, 20.0/20.0, Prof. S. Bagheri Shouraki
- Communication Systems, 19.6/20.0, Prof. H. Behroozi
- Signals and Systems, 18.3/20.0, Prof. H. Behroozi

Personal Traits

Highly motivated and eager to learn new things.

Responsible, Focused, Committed, Adventurous, Cheerful, Flexible, Honest.

Ability to work as an individual as well as in group.

Languages

Persian

NATIVE

English

FLUENT

References

Prof. Dr. Arash Amini

Associate Professor,

Electrical Engineering Department, Sharif University of Technology, Tehran, Iran.

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