Sepehr Kazemi Ranjbar

Personal Data

Place and Date of Birth:	IRAN | 9 March 2002
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Education

2020-now **Sharif University**, *B.Sc., Electrical Engineering, Communication Systems.*
Gpa: 18.53/20

2016-2020 **Allameh Tabatabaei High School**, *High School Diploma, Physics and Mathematics.*
Gpa: 19.73/20

Research Interests

- Machine Learning
- Image Processing
- Computer Vision
- Signal Processing
- Probability, Statistics, and Stochastic Processes
- Blockchain

Research Experience

2023-present **Working under supervision of Prof. Arash Amini, Sharif University**
doing research projects about Image Processing and Machine Learning.

2023-present **Working under supervision of Prof. Emad Fatemizadeh, Sharif University**
doing research projects about deep learning and computer vision.

Honors and Awards

2020-present first class honors GPA
2019 Silver Medal of 32th physics Olympiad of IRAN

Languages

English: Fluent
Persian: Native

Skills

Programming Skills: Python, C/C++, Matlab, Java
Computer Skills: PsPice, Proteus, MPLAB, Linux(ubuntu,Kali), Comsol, LaTeX

Selected Projects

SR-GCN: A Graph Convolution Network for Super Resolution

This my method for Super Resolution that I used MRGCN as conulution layer. The results are comparable to state of art approaches like SR-ResNet and SR-GAN. (github)

Transformer-Graph based keyword extraction

In this project we are using Transformers to extract embedding of words appear in captions, then we use graph-based methods to extraction keyword in an unsupervised manner. this model specialized for Persian language due to the lack of an open source model for the Persian language.(*under supervision of Prof. Arash Amini, Prof. Reza kazemi)*(under developing)

Denoising of Images based on Mixture Model

In this project at the first we implemented EM algorithm for fitting parameters of GMMs. then we used this to compute prior distribution of patches of images and next we used MVN model to compute posterior over noise. finally we reconstruct denoised images.(*under supervision of Prof. Sajad Amini)*(github)

Song detection based on its Fourier transform

In this project we created a Shazam program that can detect songs based on their Spectral.(*under supervision of Prof. Arash Amini*)(github)

Social Graph Modeling

In this project we designed a social network with graph.(*under supervision of Prof. Mohammad Ali Maddah-Ali*)(github)

Selected Courses

- Graph Neural Networks (self-study course from link)
- Image Processing ^{grad}(20/20)
- Introduction to Machine Learning(20/20)
- Microprocessor Systems(20/20)
- Digital Signal Processing(19.1/20)
- Communication Systems (20/20)
- Introduction to Robotic Systems (18/20)
- Signal and System (20/20)
- Engineering Mathematics (19.4/20)
- Probability and Statistics (17.2/20)
- Linear Algebra (19/20)

Teaching Assistance

2023 Engineering Mathematics (*Prof. Davood Poreh*)
2022 Electrical Circuits and Lab (*Prof. Emad Fatemizadeh*)