Sajjad P. Savoji

sj.pakdaman@ut.ac.ir sj.pakdaman 0098-919-591-9545
Gholhak,Tehran Province,Iran

Education

University of Tehran
B.S.c in Electrical Engineering , Major in Communication Systems , Minor in Computer Engineering

- EE Cumulative GPA: 17.69 / 20
- CE Cumulative GPA: 18.88 / 20 (Class rank: 2)

NODET Allameh Helli 8 Branch
Diploma in Mathematics and Physics
National Organization for Development of Exceptional Talents AKA "NODET"

- GPA: 19.73 / 20

Research Interest

Deep Learning, Computer Networks, Information Theory, Source Coding, Massive MIMO, 5G and cellular communication, Object Localization, Artificial Intelligence, Reinforcement Learning, Optimization, Neural Networks.

Selected Courses

Pattern Recognition, Neural Networks and Deep Learning, Artificial Intelligence, Digital Communication Systems, Digital Signal Processing, Communication Systems , Linear Algebra, Statistics and Probability, Operating Systems, Advance Programming, Data Structure, Linear Control Systems, Realtime Digital Processing Lab, Digital Communication Lab.

Awards and Achievements

- 3^{rd}place in Iran and 93^{th} place worldwide in IEEExtreme 11.0 from 2121 teams.
- 8^{th} place in Iran and 733^{th} place worldwide in IEEExtreme 12.0 from 3358 teams.
- Gold medalist(2016) and silver medalist(2017) basketball player in University of Tehran sport festival.
- Gold medalist in city of Tehran 2014 student sport competition.

Experience

- **IEEExtreme 12, 13 and 14 ambassador (International volunteer work)** April 2018 - Agust 2020
- **IEEE Data Science Winter School Mentorship** January 2020
- **RA in computer networks lab at university of tehran** Agust 2019 - Agust 2020
- **Vice Chair of IEEE University of Tehran student branch** April 2018 - April 2019

- **Summer Internship in Secure Communication Lab** June 2019 - September 2019
- **IEEEmadC ambassador (International volunteer work)** April 2018 - November 2019

Educational Experience

- **Pattern Recognition TA** Spring 2020
- **Digital Signal Processing TA** Spring 2020
- **Communication Systems I TA** Fall 2019, Spring 2020
- **Engineering Probability and Statistics TA** Spring 2019, Fall 2019
- **Electronics I TA** Spring 2018

Key Skills

Programming Languages

- Python (numpy, pandas, sklean, pytorch)
- C++ (Advanced)
- C (Advanced)
- System Verilog
- R Language
- HTML5, JS, CSS, Bootstrap

Platorms

- Jupyter Notebook and Google Colaboratory
- MATLAB Simulink & toolboxes
- Hardware simulators: Modelsim , Quartus
- Circuit simulators: Multisim
- Micro controller simulators: Proteus,Codevision
- LaTeX, Microsoft Word

Digital Devices and Microcontrollers

- FPGA
- DSPs
- AVR ATmeg series
- Raspberry Pi 2,3
- Arduino

Academic Projects

Vriational Autoencoder (link) *August 2020*
- A CNN model was trained to serve as a VAE. This model was tested on MNIST dataset.

DCGAN (link) *August 2020*
- A deep concolutional genarative adversial networks was trained on the CIFAR10 dataset.

CGAN and ACGAN (link) *August 2020*
- An Auxiliary classifier genarative adversial networks was trained on the CIFAR10 dataset.

XV6 development (link) *January 2020*
- This project is based on the XV6 operating system developed in MIT University. Each branch of this project is an adds a feature or improves the original XV6 kernel.

Voice Recognition using MLP (link) *April 2019*
- In this project a neural network was trained on the melfrequency coeficients of indivisual's voices to provide an identification systerm based on speech processing.

Face Detection using CNNs (link) *July 2019*
- the goal was to build a Convolutional NN using which the problem proposed by AT&T faces dataset could be solved. To do so, the siamese network alongside with triple-loss cost function were used.

Object Localization (link) *July 2019*
- This project is a simple implementation of YOLO2 network trained on the dataset proposed by kaggle.com to localize and identify different fish.

Humpback Whale Identification (link) *July 2019*

- The goal was to build a Convolutional NN using which the problem proposed by kaggle could be solved. To do so, the siamese network alongside with triple-loss cost function were used.

Transfer Learning for ASL (link) *July 2019*

- This project was a prototype for American Sign Language(ASL) translation, in which few layers of Resnet101 was retrained on the data set provided from kaggle.com.

Smart House *Jun 2018 – August 2018*

- IOT based project tested on a wooden home prototype using mostly Python and Java

Amplitude Modulations (link) *July 2019*

- In this project several amplitude modulations such as AM , DSB and SSB were simulted in MATLAB.

Frequency Spectrum Analyzer *January 2019 - February 2019*

- A real-time frequency spectrum analyzer using C and AVR ATmeg series.

Real-time DC Motor Speed Estimation Using Optocounter *January 2020*

- The goal was to build a device to estimate motor's speed using AVR and IR sensor.

More projects are available in my (Git repository)