

Haleh Damirchi

+98 9149122513 • haledamirchi@gmail.com • [in](#) Haleh Damirchi
[thisishale](#)

Academic Qualifications

- **Amirkabir University of Technology** **Tehran, Iran**
M.Sc. Electrical Engineering, GPA: 17.83/20
Thesis: Single-channel Speaker Extraction based on Deep Learning
2017–2020
- **University of Tabriz** **Tabriz, Iran**
B.Sc. Electrical Engineering, GPA: 16.07/20
2012–2016

Research Interests

- Speech Processing
- Medical Signal Processing
- Machine Learning
- Neuroscience

Publications

- H. Damirchi, S. Seyedin, S. M. Ahadi, "Speaker Extraction Using Stacked BLSTM Optimized with Frequency-domain Differentiated Spectrum Loss," in *International Conference on Electrical Engineering (ICEE)*, 2020.
- H. Damirchi, S. Seyedin, S. M. Ahadi, "Improving the Loss Function Efficiency for Speaker Extraction Using Psychoacoustic Effects," submitted to *Applied Acoustics*, 2020.

Teaching Experience

- **Machine Learning TA**
Amirkabir University of Technology, Graduate/Undergraduate *Fall 2019, Spring 2020*
 - Held workshops to teach students to code in python and use frameworks such as tensorflow.
- **Logic Circuits TA**
Amirkabir University of Technology, Undergraduate *Spring 2019, Spring 2020*
 - Second best teaching assistant in the electrical engineering faculty by students' evaluations.
 - Held online classes during Spring 2020 semester.

Extra Courses and Certificates

- **Coursera**
Fundamentals of Reinforcement Learning *July 2020*
- **edX**
Fundamentals of Neuroscience (part one) *April 2020*
- **Coursera**
Deep Learning Specialization *March 2018*
- **Robotic Competition, University of Tabriz**
Certificate of Robotic Training and Participation *January 2013*

Projects

- **Speaker Extraction using Deep Learning**
 - Worked on deep learning models to better extract a speech of interest (DNN, LSTM, CNN) from a mixture of speakers using Tensorflow and Pytorch.
 - Researched for and implemented different loss functions for DNN and LSTM models.
- **Speech Recognition**
 - Used Hidden Markov Models (HMM) and Dynamic Time Warping (DTW) to recognize an utterance.
- **Speech Enhancement of noisy signals**
 - Enhanced the input noisy speech using MMSE and Spectral Subtraction algorithm with Matlab.
 - Used Decision Directed algorithm to estimate the prior SNR.
- **Voice activity detection**
 - Used Ramirez04 Algorithm to detect the activity of speech signals.
- **Packet transmission in wireless sensor networks using swarm intelligence algorithms**
 - Optimized packet sending using GWO (Gray Wolf Optimization), ACO (Ant Colony Optimization) and PSO (Particle Swarm Optimizaton) algorithms with python.
- **Path Planning Algorithm**
 - Implemented genetic algorithm to optimize path planning through obstacles.
- **Prediction of number of flights between cities**
 - Predicted number of flights based on trends and data given by Alibaba company (Amirkabir University Data Analysis Competetion).
- **Car Price Prediction**
 - Extracted car makes and models and other preferred data from Bama car dealership website using BeautifulSoup python library.
 - Predicted the price of cars using machine learning algorithms from sklearn python library.

Skills

C, Python, Tensorflow, Keras, Pytorch, Matlab
AVR, PCB Design, PLC Ladder
Latex, MySQL

Work Experience

- **Aria Kavosh Industrial Corp.** **Tabriz, Iran**
Intern *July 2016 – Dec 2017*
 - Worked with PLC and DELTA HMI.
 - Crafted educational units for power engineering labs in universities.
- **Graph Team - ZAMANA blog** **Tabriz,Iran**
Tech Blogger *Aug 2015 – June 2016*
 - Translated up to date topics to persian and wrote and edited tech related topics for the blog.
 - Wrote topics to attract female readers to technology and engineering.
- **Tabriz Peguh** **Tabriz,Iran**
Intern *Summer 2014*
 - Researched in fluid mechanics field for the project of distinguishing between gasoline and petrol.

Languages

Azeri: Native

Persian: Native

English: TOEFL iBT: 114 (Reading: 30, Listening: 30, Speaking:27, Writing:27)

volunteer work

Organizing committee member in 4th International Conference on Signal Processing and Intelligent Systems (ICSPIS), December 2018 at Amirkabir University of Technology, Tehran, Iran.

References

- Prof. Sanaz Seyedin
sseyedin@aut.ac.ir
- Prof. Seyed Mohammad Ahadi
sma@aut.ac.ir