



Esmaeil Farhang

Senior Master Student

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My education in Mathematics and AI and my experience as a Machine Learning R&D Engineer have provided me with a well-rounded background and enabled me to develop my research qualitative and analytical skills. I have the capability to resolve problems and implement solutions in research, which is confirmed through relevant Academic research and technical R&D experiences. In short, I am a hard-working and creative individual with a great passion for research in AI and related fields.

EDUCATION

University of Tehran, Iran

SEP 2017 - SEP 2020

Master of Science, Machine Learning & Artificial Intelligence

Thesis: Effect of Spatial frequency content on the hierarchical object recognition

Supervisor: Dr. Mohammad Reza Abolghasemi Dehaghani **Advisor:** Dr. Babak Araabi

GPA: 17.00/20.00

Shiraz University, Iran

SEP 2011 - SEP 2106

Bachelor of Science, Major in Mathematics & Minor in Computer Science

FIELDS OF INTEREST

- Machine Learning and Deep Learning
- AI in Healthcare
- Machine Vision
- Data Science
- System and Computational Neuroscience
- Speech Processing

EXPERIENCE

Academic Experience

Fall 2018-Spring 2020

Teaching Assistant

- Deep Learning with Applications, University of Tehran (Spring 2019 & 2020)
- Statistical inference, University of Tehran (Fall 2019)
- Pattern Recognition, University of Tehran (Fall 2018)

Our responsibilities included Designing homework and helping students with assignments, delivering the assignment, marking projects, and exams.

Research Assistant

(June 2018 - now)

- University of Tehran Cognitive Systems Lab

Work Experience

July 2019 - July 2020

Machine Learning R&D Engineer at HiBrainy (Roham AI)

- Developing the TTS(Text to Speech) technology for English, French, and Persian and deploying services in the [HiBrainy](#) Platform (used novel deep learning methods).
- R&D on face anti-spoofing, liveness detection, head pose estimation, face depth estimation, and face emotion detection using novel deep learning methods

PROGRAMING SKILLS

- **Programming Languages:** Python, C/C++, R
- **Deep Learning Frameworks:** Pytorch, Tensorflow, Keras
- **Speech Recognition and Synthesis Toolkit:** Kaldi, Espnet, Marytts, HTS
- **Other Languages:** Familiar with Java, Android, and Haskell Languages
- **Linux:** bash, perl
- **Docker / Git**

PUBLICATIONS

- Esmaeil F, Mohamad-Reza A, Babak A. Temporal Dynamic of Spatial Frequency Representation in IT Cortex. Poster presented at: 8th Basic and Clinical Neuroscience Congress; 2019 December 18-20; Iran University of Medical Sciences, Tehran, Iran
- Under Preparation: Esmaeil F, Ramin T, Mohamad-Reza A, Babak A. Is Basic level advantage maintain in HSF and LSF?

SELECTED ACADEMIC PROJECTS

Deep Learning with Applications

Spring 2018

- Implementation Neural Network Combined with RNN and CNN and Use CTC loss for Librispeech data set for converting speech to text.
- Implementation parallel structure Gaussian mixture model -hidden Markov model (GMM-HMM) using the Viterbi and Baum-Welch algorithm, and compare with the gaussian mixture model - Deep Neural Network (GMM - DNN) on Spoken Arabic Digit Data Set.

Cognitive Neuroscience

Spring 2019

- Implement a Behavioral and psychological task
- Brain Neural Data Analysis using machine learning tools

Pattern Recognition

Fall 2017

- Designing and implementation of traditional machine learning classifiers for different problems.

Reinforcement Learning

Fall 2017

- Implementation and comparison of different RL methods such as Q-Learning and SARSA in multi-state environments and Continuous RL methods such as RBF and Fuzzy

Social Networks

Fall 2018

- Creating the relationship graph between the spiking activity of hundreds of neurons in mouse somatosensory cortex slice cultures, using the transfer entropy, Granger causality, and cross-correlation methods and comparing these methods using the social network analysis tools of python and Matlab

Data Analytics

Fall 2018

- Investigating the Variable of Social Trust and Comparing its Effective Factors on the Basis of a Survey on Iranian People From 1999 to 2009 for a descriptive Analytics Project with python.
- Predicting the Saccadic Targets with Individual and Population Neural Response for Predictive Analytics Project with python.

Statistical Inference

Spring 2018

- Analyzing and Visualizing the FIFA Player dataset with R

SELECTED COURSES

- Deep learning with applications (19.5/20)
- Data analytics(19.75/20)
- Cognitive Neuroscience (18.75/20)

LANGUAGES

English (prepare for TOEFL), **Persian** (Native), **Turkish** (Familiar), **Arabic** (Familiar)

REFERENCE

Dr. Mohammad Reza Abolghasemi Dehaghani

- Assistant professor at the college of engineering at the University of Tehran, Tehran, Iran
- Resident Researcher at the School of Cognitive Sciences at the Institute for Research in Fundamental Science, Tehran, Iran
- email: dehaqani@ut.ac.ir

Dr. Babak Nadjari Araabi

- Professor at the college of engineering at the University of Tehran, Tehran, Iran
- email: araabi@ut.ac.ir

Dr Reshad Hosseini

- Assistant Professor at the college of engineering at the University of Tehran, Iran
- email: reshad.hosseini@ut.ac.ir

HONORS

- Ranked 37th among participants in the nationwide university entrance exam in the field of Computer Engineering (AI) and 46th in the field of computer science for a master's degree, Tehran, Iran. (2017)