

# Yasaman Boreshban

## CONTACT INFORMATION

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## RESEARCH INTEREST

Natural Language Processing  
Deep Learning  
Machine Learning  
Information Retrieval  
Data mining  
Image Processing  
Software Engineering

## EDUCATION

**Sharif University of Technology, Tehran, Iran**  
Ph.D. in Computer Engineering (2018 -2022 [Expected])  
Major in Artificial Intelligence  
**Supervisor:** Dr. Gholamreza Ghassem-Sani  
**Adviser:** Dr. Seyed Abolghasem Mirroshandel  
**Thesis Title:** Improving Robustness of Question Answering Systems using Deep Neural Networks  
**GPA : 17.58/20**

Relevant Course Work:  
Machine Learning, Deep Learning ,Image Processing, Stochastic Process, Artificial Intelligence Planning

**Guilan university, Rasht, Iran**  
M.Sc. in Computer Engineering (2013-2016)  
Major in Software Engineering  
**Supervisor:** Dr. Seyed Abolghasem Mirroshandel  
**Thesis Title:** Providing a Question Answering System for Natural Language  
**GPA : 19.71/20**

Ranked first among all entire university computer engineering students.

Relevant Course Work:  
Advanced Software Engineering, Advanced Computer Architecture, Modeling and Evaluation of Computer Systems, Natural Language Processing, Advanced Computer Networks, Distributed Systems, Advanced Operating Systems.

**Shahid Rajaee Teacher Training University, Tehran, Iran**  
B.Sc. in Computer Engineering (2009-2013)  
Major in Software Engineering

**Thesis Title:** Design and Implementation of the School Portal” Under the supervision of Dr. Negin Daneshpour.

**GPA : 17.90/20**

Ranked fourth among the entire university computer engineering students.

Relevant Course Work:

Advanced Programming, Data Structure, Algorithm design, Compilers Theory and Design, Computer Architecture, Internet Engineering, Programming Languages, Software Engineering, Artificial Intelligence, Operating Systems, Database.

**hejab high school, sowmesara, Guilan, Iran**

Diploma in Mathematics and Physics (2005-2009)

**GPA : 19.78/20.0**

Ranked **Second** among all high school students in all years.

## **PUBLICATIONS**

- 1) Boreshban, Y, Mirbostani, S. M, Ghassem-Sani, G, Mirroshandel, S. A, Amiriparian, S, ” *Improving Question Answering Performance Using Knowledge Distillation and Active Learning*”, 2021 (Under review, pre-print version on Arxiv)
- 2) Boreshban, Y, Yousefinasab, H, Mirroshandel, S. A,” *Providing a religious corpus of Question Answering System in Persian*”, Journal of Signal and Data Processing, 2018
- 3) Boreshban, Y. and Mirroshandel, S. A. "A novel question answering system for religious domain in Persian". Journal of Electrical Industries 8(2): Aug. 2017

## **Ongoing Research**

- 1) Creating a novel adversarial attack and deffense method on Question Answering System using Genetic algorithm.
- 2) Designing and developing a open-source adversarial attack and defense framework for question answering systems.
- 3) Applying Meta-Learning methods on question answering systems
- 4) Improving Sperm abnormality detection using Anomaly detection approaches (in this project, in collaboration with Dr. Seyed Abolghasem Mirroshandel, we are leading a team of two bachelor students.)

## **Teaching Experiences (Lecturer)**

Compiler Design course, CE Faculty, Sharif University of Technology, Fall 2021.

Artificial Intelligence course, Engineering Department, Guilan University, Fall 2021.

Natural Language processing course, Engineering Department, Guilan University, Spring 2021

Artificial Intelligence course, Engineering Department, Guilan University, Fall 2020.

Artificial Intelligence, Engineering Department, Guilan University, Fall 2016 and Spring 2017.

Compiler Design course, Tehran university, Fouman Faculty of Engineering, Spring 2017.

Presentation of Scientific and Technical course, Tehran University, Fouman Faculty of Engineering, Spring 2017.

Artificial Intelligence, Tehran University, Fouman Faculty of Engineering, Fall 2016.

**Teaching Experiences  
(Teaching Assistant)**

Deep Learning course, Dr. Hamid Beigy, CE Faculty, Sharif University of Technology, Spring 2021.

Compiler Design course, Dr. Gholamreza Ghassem-Sani, CE Faculty, Sharif University of Technology, Spring 2021

Deep Learning course, Dr. Hamid Beigy, CE Faculty, Sharif University of Technology, Fall 2020.

Image Processing course, Prof. Shohreh Kasaei, CE Faculty, Sharif University of Technology, Spring 2020.

Advanced Programming Course, Dr. Seyed Abolghasem Mirroshandel , Engineering Department, Guilan University, Spring 2015 and Spring 2014.

Compiler Design Course, Dr. Seyed Abolghasem Mirroshandel , Engineering Department, Guilan University, Spring 2015 and Spring 2014.

Artificial Intelligence Course, Dr. Seyed Abolghasem Mirroshandel, Engineering Department, Guilan University, Fall 2014.

Data Structure Course, Dr. Seyed Abolghasem Mirroshandel , Engineering Department, Guilan University, Fall 2014.

Database Course, Dr. Zahra Mirzamomen, Computer Engineering Department, Shahid Rajaei Teacher Training University, Spring 2013.

**SELECTED COURSE  
PROJECTS**

**Course: Deep Learning**

Deep learning packages: Pytorch, Keras  
selected projects:

- Transfer learning for CNN classification (datasets: CIFAR-100, CIFAR-10)
- Times series prediction using GRU, LSTM(dataset: Apple Inc.s stock price)
- Generative adversarial network (dataset: MNIST)
- Sequence generation using LSTM (dataset: Shakespeare)
- Denoising Autoencoder and Conditional Variational Autoencoder (dataset: MNIST)

### **Course: Machine Learning**

Machine Learning libraries: Numpy, Pandas, Matplotlib

selected projects:

- Classification using SVM, logistic regression, Adaboost, and random forest in different datasets
- Clustering using K-means algorithm

### **Course: Image Processing**

Image processing packages: OpenCV

selected projects:

- Histogram equalization
- Deconvolution and inverse filtering
- Morphological Image Processing Functions
- Hough Transform
- Image Smoothing using denoising algorithms
- Image style transfer

### **Course: Natural Language Processing**

- Language Models in Spell Correction (dataset: HolbrookCorpus)

## **SKILLS**

**Programming and Developing:** Proficient in python, C++, Java, C#; Familiar with Matlab, ASP.Net, HTML, CSS, JQuery and SQL JavaScript.

**Deep Learning Frameworks:** Pytorch, Keras, Tensorflow,

**Natural Languages:** Persian (Native) , English (Proficient)

## **WORKING EXPERIENCES**

**Telecommunication Research Center** (<https://www.itrc.ac.ir/>), Research Assistant (Remote), 2021 (6 months)

Project: Artificial Intelligence applications in Agriculture, Smart City, and Education

**EideBekreMobin Company** (<http://ibm.co.ir/>), Research & Develop (Remote), 2014.

**Tebyan Company** (<http://www.tebyan.net/>), Web Programming (Internship), 2013.

## **RESEAECH EXPERIENCES**

### **NLP Research Group, Sharif University of Technology (2018-Now)**

Membership in a research group in Sharif University for working on NLP projects under the supervision of Dr. Gholamreza Ghassem-Sani

### **NLP Research Group, University of Guilan (2013- Now)**

Membership in a research group in Guilan University for working on NLP projects under the supervision of Dr. Seyyed Abolghasem Mirroshandel.

### **Ph.D. Thesis (2018- 2022[expected])**

I'm Working on Robustness of Question Answering Systems using Deep Neural Networks.

### **M.SC. Thesis (2013-2016)**

“Providing a Question Answering System for Natural Language”  
Under the supervision of Dr. Seyyed Abolghasem Mirroshandel.

### **B.SC. Thesis (2013)**

“Design and Implementation of the School Portal” Under the supervision of Dr. Negin Daneshpour.

## **REFERENCES**

### **Dr. Gholamreza Ghassem-Sani**

Associate Professor at Sharif University of Technology

Email: [sani@sharif.edu](mailto:sani@sharif.edu)

Home: <http://sharif.edu/~sani/>

### **Dr. Seyed Abolghasem Mirroshandel**

Associate Professor at University of Guilan

Email: [mirroshandel@guilan.ac.ir](mailto:mirroshandel@guilan.ac.ir)

Home: <https://nlp.guilan.ac.ir/mirroshandel/>