

Behzad Shayegh Boroujeni

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Education

Bachelor of Science 2017-2022
University of Tehran

Major in Computer Engineering

- Focused in Software Engineering
- Thesis: Persian Address to Postal-Code Converter (Grade: 19.88/20)
- GPA: 18.41/20 (3.93/4)
- GPA over the last year: 18.71/20

School of ECE

Minor in Computer Science

- GPA: 19.73/20 (4/4)

School of MSCS

Relevant Courses

* indicates graduate courses.

Computational Neuroscience * 19.75
Assoc. Prof. Mohammad Ganjtabesh

Natural Language Processing * 19.1
Assoc. Prof. Heshaam Faili

Reinforcement Learning * 20
Prof. Majid Nili

Statistical Machine Learning * 19.5
Assoc. Prof. Zahra Rezaei Ghahroodi

Artificial Intelligence 20
Assis. Prof. MohamadAmin Sadeghi

Statistical Methods 20
Ph.D. Candidate. Hasan Misaii

Engineering Probability and Statistics 19.7
Assis. Prof. Behnam Bahrak

Research Interests

Natural Language Processing
└ Text Processing

Computational Neuroscience
└ Spiking Neural Networks

Hobbies and Interests

Hobbies

- └ Violin
- └ Chess

Interests

- └ Music Composition
- └ Creative Writing

Research Experience

2021-NOW **Spiking Neural Networks Framework** Spiral

Python Comp-Neuro SNN PyTorch

Spiral is a python package for spiking neural network (SNN) simulation using PyTorch on CUDA or CPU. It tries to bring its design as close as possible to biological observations of how the nervous system functions. I am designing and developing this framework under the auspices of the Computational Neuroscience Research Lab (CNRL) at the University of Tehran.

By-products:

- Add-On Class
- Construction Requirements Integrator
- Matplotlib Dashboard
- Constant Properties Protector

Assoc. Prof. Mohammad Ganjtabesh

2020-2021 **Persian Address to Postal-Code Converter** PAT

Python NLP NLTK Persian Data-Collection

Persian Address Tracer (PAT) is one of the most successful and intelligent systems used for converting the Persian text of an address to a postal code.

Assis. Prof. MohamadAmin Sadeghi

2019-2020 **House Prices Estimation over Tehran** 4-Choob

Python Numpy Shapely PostgreSQL Q-GIS PostGIS

4-Choob was a project aiming at automating house price estimation over Tehran. I was tasked with extracting features, and the result was the extraction of more than 400 efficient price-forecasting features.

Assis. Prof. MohamadAmin Sadeghi

Books

2020-NOW **Discrete Mathematics** OpenBookshelf

LaTeX Discrete Mathematics Persian Open-Source

I lead a group of volunteers who are writing an open-source Persian book on discrete mathematics.

By-products:

- LaTeX Persian textbook template
- Common Mistakes in Discrete Mathematics

Assoc. Prof. Siamak Mohammadi

Teaching Assistance Experience

* indicates head teaching assistant.

FALL	2021	Foundation Models in Natural Language Processing (Graduate Course) Assis. Prof. Yadollah Yaghoobzadeh ↗
FALL	2021*	Engineering Probability and Statistics Assis. Prof. Behnam Bahrak ↗
FALL	2019	• Applied Statistics Tutorial in R
SPRING	2021	Natural Language Processing (Graduate Course) Assoc. Prof. Heshaam Faili ↗ Assis. Prof. Yadollah Yaghoobzadeh ↗
SPRING	2021*	Discrete Mathematics Assoc. Prof. Siamak Mohammadi ↗
FALL	2020*	• Restructuring the syllabus and the coursework
SPRING	2020*	• Creating educational contents
FALL	2019	• Experimenting with additional exercising and evaluation methods
SPRING	2019	
SPRING	2020	Artificial Intelligence Dr. Hakimeh Fadaei ↗ • Genetic Algorithm and ML Models
FALL	2019	Data Structures and Algorithms Assoc. Prof. Heshaam Faili ↗
FALL	2018	Engineering Programming Dr. Noushin Karimian ↗
SPRING	2018	• A Series of Basic C++ Exercises

Workshop Mentoring Experience

SPRING	2020	Introduction to Data Science • A Series of Python Exercises ↗ Amirkabir University of Technology
WINTER	2020	Data Science Winter School Khatam University
WINTER	2020	Data Science Winter School IEEE, University of Tehran
SUMMER	2019	Summer of Code, AI Branch ACM, University of Tehran

Skills

	Programming Languages	Python Libraries & Frameworks	Software & DBMSs	Other Tools & Frameworks
Expert	Python	Pandas NumPy Spiral	Git PostgreSQL LaTeX	Spreadsheet
Proficient	R SQL Bash	PyTorch Matplotlib NLTK Scikit-Learn	MySQL PostGIS	HTML CSS Jupyter Colab
Familiar	C++ C Java Verilog JavaScript	Keras BindsNET Shapely SciPy.stats	Q-GIS	ReactJS VueJS
Beginner	MATLAB C#	Sympy	MongoDB Elasticsearch	Spring

Notable Course Projects

SPRING 2021	Computational Neuroscience <i>Assoc. Prof. Mohammad Ganjtabesh</i> ↗
	Text Representation using Recurrent SNN (Temporary suspension) ↗ Comp-Neuro NLP SNN STDP English Python Spiral
	Face Representation using Convolutional SNN ↗ Comp-Neuro Vision CSNN STDP Python PyTorch
	Understanding the parameters in SNNs (10 Parts) ↗ Comp-Neuro SNN Python PyTorch
SPRING 2020	Natural Language Processing <i>Assoc. Prof. Heshaam Faili</i> ↗
	IMDB Sentiment Analysis and Emails Spam Detection using Bert and Elmo ↗ NLP Text Classification Bert Elmo English Python Keras
	POS Tagging using RNN and HMM ↗ NLP POS-Tagging English Python Keras NLTK
	English to Persian Neural Machine Translation and Persian to English Neural Machine Transliteration ↗ NLP NMT En2Fa Fa2En Python Open NMT
	Feed Forward Neural Network Language Model ↗ NLP Language Model NN English Python PyTorch
	Movie Reviews Sentiment Analysis using Naive Bayes ↗ NLP Text Classification Naive Bayes English Python
	Persian News Classification using N-gram Language Models ↗ NLP Text Classification Language Model Persian Python
SPRING 2019	Artificial Intelligence <i>Assis. Prof. MohamadAmin Sadeghi</i> ↗
	Emails Spam Detection using Naive Bayes ↗ NLP Text Classification Naive Bayes English Python
	Image Classification (CIFAR-10) using CNNs ↗ Vision Image Classification CNN NN Python PyTorch

Honors

2017- NOW	Among 15 percent of high-ranked Computer Engineering B.Sc. students at the University of Tehran, including more than 100 students.
2017	Admission and a scholarship to the University of Tehran
	Top Ranked in Nationwide University Entrance Exam
2017	Mathematics and Physics Discipline
	Ranked 544 th among 52808 regional participants
	Ranked 2021 th among 137788 national participants
	Art Discipline
	Ranked 731 th among 16875 regional participants
	Ranked 2115 th among 48673 national participants
2015	The best regional student violinist according to the vote of the Ministry of Education.

Languages

Persian	Native
English	Fluent
IELTS Exam	Soon to be taken
GRE Exam	Soon to be taken

References

Sorted alphabetically.

Assis. Prof. Behnam Bahrak ↗	Mail ✉
Assoc. Prof. Siamak Mohammadi ↗	Mail ✉
Assis. Prof. MohamadAmin Sadeghi ↗	Mail ✉
Assis. Prof. Yadollah Yaghoobzadeh ↗	Mail ✉