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.

	Grade/20
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
- Computationl 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*
		• FFNN, RNN, and LSTM Language Models	*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**	**Amirkabir University of Technology**
		• A Series of Python Exercises	
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

Computationl Neuroscience
Assoc. Prof. Mohammad Ganjtabesh

SPRING 2021

- 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

Natural Language Processing
Assoc. Prof. Heshaam Faili

SPRING 2020

- 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

Artificial Intelligence
Assis. Prof. MohamadAmin Sadeghi

SPRING 2019

- Emails Spam Detection using Naive Bayes
  NLP | Text Classification | Naive Bayes | English | Python
- Image Classification (CIFAR-10) using CNNs
  Vision | Imgae 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

2017 **Top Ranked** in Nationwide University Entrance Exam
- Mathematics and Physics Discipline
  - Ranked 544th among 52808 regional participants
  - Ranked 2021th among 137788 national participants
- Art Discipline
  - Ranked 731th among 16875 regional participants
  - Ranked 2115th 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 . . . . . to be taken on 22 Nov 2021

References

Sorted alphabetically.

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