

Behzad Shayegh Boroujeni

University of Alberta, Edmonton, Alberta, Canada

Date: Sep 2022

Research Interests: Natural Language Processing

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Education

M.Sc. at the University of Alberta

Computing Science 2022-Now

B.Sc. at the University of Tehran

Computer Engineering 2017-2022

- Focused in Software Engineering
- Thesis: Persian Address to Postal-Code Converter (Grade: 19.88/20)
- GPA: 18.21/20

Minor in Computer Science

- GPA: 17.16/20

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 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. It is worth mentioning that this is a complicated issue due to the special conditions in the Persian language and the lack of standards in addressing in Iran.

Assis. Prof. MohamadAmin Sadeghi

Languages

Persian Native

English Fluent

IELTS Exam Overall: 7.5

L: 7.5 | R: 8.5 | W: 6.5 | S: 6.5

Skills

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

Work Experience

2022	Data Scientist	Divar ↗
	Python DVC ML Scikit-Learn Visualization Pandas PySpark	
	• Car Price Estimation in Iran	
2019-2020	Data Science Intern	4-Choob ↗
	Python Numpy Shapely PostgreSQL Q-GIS PostGIS	
	• House Prices Estimation over Tehran	Assis. Prof. MohamadAmin Sadeghi ↗

Books

2020-NOW	Discrete Mathematics	OpenBookshelf ↗
	L^AT_EX Discrete Mathematics Persian Open-Source	
	I lead a group of volunteers who are writing an open-source Persian book on discrete mathematics.	
	By-products:	
	• L^AT_EX 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 ↗
		• Multi-Lingual Models	
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

Notable Course Projects

SPRING 2021	Computational Neuroscience Assoc. Prof. Mohammad Ganjtabesh
	<ul style="list-style-type: none"> Text Representation using Recurrent SNN (Temporary suspension) <ul style="list-style-type: none"> Comp-Neuro NLP SNN STDP English Python Spiral Face Representation using Convolutional SNN <ul style="list-style-type: none"> Comp-Neuro Vision CSNN STDP Python PyTorch Understanding the parameters in SNNs (10 Parts) <ul style="list-style-type: none"> Comp-Neuro SNN Python PyTorch
SPRING 2020	Natural Language Processing Assoc. Prof. Hesham Faili
	<ul style="list-style-type: none"> IMDB Sentiment Analysis and Emails Spam Detection using Bert and Elmo <ul style="list-style-type: none"> NLP Text Classification Bert Elmo English Python Keras POS Tagging using RNN and HMM <ul style="list-style-type: none"> NLP POS-Tagging English Python Keras NLTK English to Persian Neural Machine Translation and Persian to English Neural Machine Transliteration <ul style="list-style-type: none"> NLP NMT En2Fa Fa2En Python Open NMT Feed-Forward Neural Network Language Model <ul style="list-style-type: none"> NLP Language Model NN English Python PyTorch Movie Reviews Sentiment Analysis using Naive Bayes <ul style="list-style-type: none"> NLP Text Classification Naive Bayes English Python Persian News Classification using N-gram Language Models <ul style="list-style-type: none"> NLP Text Classification Language Model Persian Python
SPRING 2019	Artificial Intelligence Assis. Prof. MohamadAmin Sadeghi
	<ul style="list-style-type: none"> Emails Spam Detection using Naive Bayes <ul style="list-style-type: none"> NLP Text Classification Naive Bayes English Python Image Classification (CIFAR-10) using CNNs <ul style="list-style-type: none"> 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
2017	Top Ranked in Nationwide University Entrance Exam
	Mathematics and Physics Discipline
	Ranked 544 th among 52808 regional participants
	Ranked 2021 th among 137788 national participants
	Art Discipline
2015	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.

Hobbies and Interests

Hobbies	Interests
Violin	Music Composition
Chess	Creative Writing

References

Sorted alphabetically.

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