Zahra Bashir

PERSONAL INFORMATION

Birth	April 8, 1998
Phone	(+98) 939-8100426
Mail	zbashir1@ualberta.ca,zahrabashir77@gmail.com
GitHub	https://GitHub.com/zahrabashir98

EDUCATION

B.Sc. in Computer Engineering with a concentration on AI — Sep 2016 - Expected Jul 2020

Iran University of Science and Technology, Tehran, Iran

Ranked **3rd** among Iran Universities based on QS Ranking
GPA(Last 55 credits): 3.85/4 (18.5/20)
GPA (up to now) via 124 units: 3.75/4 (17.72/20)

Diploma in Mathematics and Physics Discipline — 2012-2016

Farzanegan HighSchool, Tehran, Iran

Affiliated with the National Organization for Development of Exceptional Talents — **GPA: 4/4**

AWARDS & HONORS

Iran University of Science and Technology, Tehran, Iran

- Received fully-funded admission offers from University of Alberta, Simon Fraser University, and University of Western Ontario for MSc.
- Winning an award for being the **3rd** top student of the year — Sep 2019
- Permitted to apply for **M.Sc.** program at the Department of Computer Engineering without taking the "National Entrance Exam for Graduate Schools" as an award for exceptional talented students — Sep 2019
- Accepted and qualified in **digikalaNEXT** AI Summer Camp — Jul 2019
- Achieving certificate of Game Development in **"Chillin Wars"** competition (AI competition of my university) — Mar 2019
- Member of scientific association of computer engineering department — 2018 – 2019
- Winning an award for being the **2nd** top student of the year — Dec 2017
- Member of the National Organization for Development of Exceptional Talents — 2016 – Present

Farzanegan High School, Tehran, Iran

- Ranked among the **top 0.2%** of the candidates in the "National Entrance Exam for Graduate Schools" — Aug 2016
- Achieving an award for ranking the first place in the Provincial Computer Olympiads and Going to the national stage — 2014

RESEARCH INTERESTS

- Machine Learning/Deep Learning
- Reinforcement Learning
- NLP/Signal Processing
- Neuroscience/Bioinformatics
- Computer Vision/Image Processing
- Software Engineering

ACADEMIC EXPERIENCE

Machine Learning Researcher at MAS Lab Jun 2019 – Present

- Researching on **"Image Caption Generation"** and customizing image captioning in Farsi and doing some comparisons about two approaches and also gathering a complete Persian data set for the first time which would be useful for others.

Supervisor: Dr. Naser Mozayyani

ChillinWars Developer and Technical Manager Sep 2018 – Feb 2019

- ChillinWars is Iran University of Science and Technology's **AI contest**. It's been held every year in Iran as a well-known programming contest in form of artificial intelligence implementation
- Working as a full-stack developer of Junior Game of this competitions in 2018 -2019 with its exclusive framework

TEACHING EXPERIENCE

Computational Intelligence TA **(Instructor: Dr. Nasser Mozayani)** Feb 2020 – Present

Artificial Intelligence Teaching Assistant **(Instructor: Dr. Taher Pilevar)** Sep 2019 – Present

Signals and systems Teaching Assistant **(Instructor: Dr. Mohammadi)** Sep 2019 – Jan 2020

Software Engineering Mentor **(Instructor: Dr. Mehrdad Ashtiani)** Sep 2019 – Jan 2020

Theory of Languages and Automata TA **(Dr. Hossein Rahmani)** Feb 2019 – Jun 2019

System Analysis Teaching Assistant **(Instructor: Dr. Mehrdad Ashtiani)** Feb 2019 – Jun 2019

Discrete Math Teaching Assistant **(Instructor: Dr. Vesal Hakami)** Feb 2018 – Jun 2018

Programming Basics Teaching Assistant **(Dr. Zeinab Movahhedi)** Sep 2017 – Jun 2018

INDUSTRIAL EXPERIENCE

Back-end developer at D & C (Ravandyar) company July 2018 - Sep 2018

- I worked there for 3 month (in summer). Actually my goal was obtaining some work experience out of university and getting familiar with development tools
- The technology stacks which I used were Django/Python, Git, Jira, etc.
- My task was developing back-end part of an app related to **"BlockChains"** and money transfer

Back-end developer of "Teachent" Project Feb 2018 - Jun 2018

- "Teachent" was an application of a friendly startup of our own in a group of 5.

SKILLS

Computer Skills

Self Learning	*I think this is the most important skill of mine and I've learned my other skills by it.*
Programming	*Proficient at:* Python, C++, MATLAB, C, Java, HTML *Familiar with:* Go, Assembly, CSS, VHDL
Framework, Libraries	Django, Django-Rest, Flask, SDL, PyGame
Learning Tools	TensorFlow, Numpy, Keras, OpenCV, Scikit-learn
NLP Tools	NLTK, Mallet, SRILM, etc
Project Management Tools	TFS, Jira, Trello
Others	Linux, Git, OpenAI Gym, PostgreSQL, NoSQL, Xilinx ISE, Docker , UML, Visual Paradigm , Unity 3D

Language Skills

Persian:	*MotherTongue*
English:	Toefl IBT test score: 104 (27, 27, 25, 25)
	GRE Quantitative: 166

ACADEMIC PROJECTS

BSc Final Project **Supervisor: Dr. Sauleh Eetemadi**

- "NRLP" is a project based on the combination of RL and NLP in a special task

"Detection of Propaganda Techniques in News Articles" **Supervisor: Dr. Taher Pilevar**

- Working on a task for an online competition on CodaLab (See Link)
- My final project in the **Deep Learning** course (GitHub link)

"Assist Teachers using Face Recognition!" **Supervisor: Dr. Mohammadreza Mohammadi**

- Working on the faces of my classmates to detect who is present and who is absent.
- Supporting options, such as detecting **drowsiness** and predicting the efficiency of students
- My final project in the **Computer Vision** course (GitHub link)

"Farsi Neural Image Caption Generation" **Supervisor: Dr. Nasser Mozayani**

- Gathering Farsi Image captioning train, test, and dev set for the first time
- Training the model using the **Attention** mechanism on the mentioned Dataset, using **Tensorflow** on Google Colaboratory (See Link)
- Comparing the accuracy of two approaches considered

Deep Learning Course **Instructor: Dr. Taher Pilevar**

- MLP and preprocessing
- Implement CNN from Scratch
- Image tasks and Visualization
- Transfer Learning and Sequence to Sequence models

Computational Intelligence Course **Instructor: Dr. Nasser Mozayani**

- Solving "Inverted Pendulum" using **Fuzzy Logics** (also using **RL** in Gym env)(GitHub link)
- Finding roots of polynomial equation using **Genetic algorithm**(GitHub link)
- Image **classification** using **Multi-Layer Perceptron** for Hoda Data Set (Like MNIST but in Persian) using Numpy, Keras.And Also designing a CNN with **deep learning** and comparing these two approaches.(GitHub link)
- Designing a noise-robust model using **Hopfield Network** for image detection (GitHub link)
- Function approximation using **RBF** (Radial Basis Function) and MLP (GitHub link)
- Training a **Kohonen's** Self-Organizing Feature Map (SOFM) which can map a dataset of 3-Dimensional data into a 2-Dimensional space (GitHub link)

Natural Language Processing Course **Supervisor: Dr. Sauleh Eetemadi**

- "Detect your political vision!" which was a **text classification** project :(GitHub link)
  - Data collection, Data Extraction, Pre Processing, and primary data analysis
  - Data Splitting, Implementing Language Model's train phase, Implementing **Perplexity** calculation, Implementing **Text Generation** using **Language model**
  - Implementing **Naive-Bayes** Classifier,Implementing **Maximum Entropy** (MaxEnt) Classifiers using Mallet and comparing these two approaches
- Different Phonetics Detection (GitHub link)

Artificial Intelligence Course **Instructor: Dr. Taher Pilevar**

- Smile Detection: (GitHub link)
  - A **Deep-Learning-based** project which can recognize smile the images
- Implementing **Reinforcement Learning** in games like *WaterWorld* or *PixelCopter*
- Solving Pacman practical Projects of **Berkeley** University in the most of AI outlines such as Search Problems, Informed Search, **CSP**, Adversarial Search, **Markov Decision Process**, etc.

Signal Processing Course Instructor: Dr. Mohammadreza Mohammadi

- **Gender Recognition** using signal Processing and signal-based features(GitHub link)
- Dual-Tone Multi-Frequency (DTMF) signaling (GitHub link)
- Yes-No Detection simulation practice (GitHub link)

ONLINE COURSES

Reinforcement Learning Course, University of Alberta, Adam White, Martha white
Machine Learning Course, Standford University, Andrew NG
Natural Language Processing Course, Standford University, Jurafsky and Manning
Reinforcement Learning Course, Berkeley University resourses

SELECTED ACADEMIC COURSES

Computational Intelligence	A^+	Discrete Mathematics	A^+
Computer Vision	A^+	Electrical Circuits	A^+
Natural Language Processing	A^+	Basic Programming	A^+
Artificial Intelligence	A	Theory of Languages and Automata	A^+
Deep Learning	A	Software Engineering	A^+
Signals And systems	A^+	Database Design	A^+
System Analysis	A^+	Advanced Programming	A

PUBLICATION

"Farsi Image Caption Generation via two approaches". (In Progress - LREC Confrence)