Kiarash Aghakasiri

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PERSONAL DETAILS

Birth	July 16, 1997
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INTEREST

- Reinforcement Learning / Artificial Intelligence
- Model-Based RL / Planning in Imperfect Domains

EDUCATION

University of Alberta — Edmonton, Alberta, Canada
MSc. Computing Science — September 2019 - Present
(GPA = 4)

Iran University of Science and Technology — Tehran, Tehran, Iran
BSc. Computer Engineering concentration on AI — September 2015 - July 2019
Rank 3rd among Iran universities by QS Ranking
(GPA = 3.87)

Allameh-Helli (NODET) — Tehran, Tehran, Iran
MidSchool, HighSchool, PreUniversity — September 2008 - June 2015
National Organization for Development of Exceptional Talent
(Diploma GPA = 4)

PERSONAL ACHIEVEMENTS

- Succeeded to rank second top student in B.S. with GPA 17.78/20 = 3.87/4
- Winning an award for being the top student of the year 2016 and 3rd top student of the year 2017
- Being in the first 0.1% in national graduate school entrance examination
- Gain an opportunity for going to MSc without taking the national entrance examination from two of Iran best universities (Sharif University of Technology and Iran University of Science and Technology)
- Participate in university booth in the "18th Exhibition of Research, Technology Achievements and Techmart" and Succeeded to Achieve one of the 12th best booths in the exhibition

- Win a second place in intra-university ACM tournament
- Being a member of National Organization for Development of Exceptional Talent for ten years
- Admission at the first stage of Mathematics and Computer Olympiads in high school

PUBLICATIONS

- Fatemeh Karimkhani, H. Rahmani, Arezoo Zare, Raana Sahebnassagh and Kiarash Aghakasiri: Tarvajeh: Word association norms for Persian words. In: Journal of Psycholinguistic Research, 2020

ACADEMIC PROJECTS

M.Sc Projects:

- MSc Thesis (On going) **Supervisors: Dr. Martin Müller**

  -Adapting planning algorithms such as MCTS, for imperfect domains using uncertainty measures

  -Investigating different approaches to capture uncertainty in a model

  -Showing that search with perfect models can in fact increase the performance even when value function capacity is not enough

- Reinforcement Learning I (On going) **Instructor: Dr. Martha White**

  -Is heteroscedastic regression a sound way to approximate model uncertainty? → Proposal

- Reinforcement Learning II **Instructor: Dr. Richard Sutton**

  -Investigating Sensitivity of Step Size and Performance in True online TD(λ) for Different Values of λ → Project Report

- Intro to Machine Learning **Instructor: Dr. Martha White**

  -Applying Variance Reduction Methods to Policy Evaluation for Off-Policy Setting → Project Report

- Deep Learning for NLP **Instructor: Dr. Lili Mou**

  -Named Entity Recognition performance on Out of Vocabulary words → Project Report

B.Sc Projects:

- B.Sc Thesis **Supervisors: Dr. Nasser Mozayani & Dr. Sauleh Eetemadi**

  -Image Captioning using Attention mechanism on translated MSCoCo Dataset, using Tensorflow on Google Colaboratory (working with another B.Sc student)

- Machine Learning Lab **Supervisor : Dr. Nasser Mozayani**

  -Reducing the convergence time for Deep Q-Learning algorithms with Transfer Learning for ATARI games, using Autoencoder and Variational Autoencoder as State Representation (working in a group of 4 people)

- Data Mining Lab **Supervisor : Dr. Hossein Rahmani**

  -Working with a M.S student, crawling twitter using Twint and Python, to gather a dataset for hashtag recommendation

  -Gathering Dataset for Persian language Word Association Norms and analyzing it and publishing the Dataset (working in a group of 4 people)

  -Fraud Detection for German Bank Dataset using SPSS Modeler

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

  -Solving Inverted Pendulum problem with Fuzzy Logic and Reinforcement Learning (Q-Learning)

  -Image Recognition with Multi Layer Perceptron for MNIST database using Numpy,Keras

  -Function approximation with MLP (Multi Layer Perceptron) and RBF (Radial Basis Function)

  -Genetic Algorithm for N-Queen problem

- Natural Language Processing Course **Instructor : Dr. Sauleh Eetemadi**

  -Machine Translation for Poetry to Prose and vice versa using OpenNMT

  -Sentiment Analysis (for tweets that have #worldcup) using AFINN

  -Naive Bayes and Maximum Entropy classifiers for speeches of two famous persian politicians

- Artificial Intelligence & Expert Systems Course **Instructor : Dr. Behrouz Minaei-Bidgoli**

  -Face Recognition for LFW (Labeled Face in the Wild) dataset using OpenCV

- Advanced Computer Programming Course **Instructor : Dr. Adel Torkaman Rahmani**

  -Prototype of Social Network Website with comment, like, and post abilities

  -Web Scraper and Search Engine using Scrapy

  -File Manager with python

TECHNICAL SKILLS

Programming and Scripting Languages

Proficient at: Python, C++, C, Pascal
Familiar with: Assembly 8086, Matlab

Operating System

Mac OSX, Linux

Tools and Frameworks

Learning Tools: PyTorch, TensorFlow, Numpy, Keras, OpenCV, Scikit-learn
NLP Tools: Vowpal Wabbit, OpenNMT
Web Application Tools: BeautifulSoup, Selenium , Scrapy, Twint
System Tools: PThreads, Nachos
Data Mining Tools: SPSS Modeler(Clementine)
Hardware Tools: Xilinx ISE, AVR Studio, Code Vision AVR, Logisim

ACADEMIC EXPERIENCE

University of Alberta Edmonton, Alberta, Canada

Intro to Foundations of Computing TA September 2020 - Present
Teaching Python to Undergrad students
Instructors: Dr. Sadaf Ahmed, Dr. Joerg Sander

Basics of Machine Learning TA January 2020 - April 2020
Teaching basics of statistics (MLE, MAP), function optimization, classification, regression
Instructor: Dr. Martha White

Intro to Foundations of Computing TA September 2019 - December 2019
Teaching Python to Undergrad students
Instructors: Dr. Geoff Hollis, Dr. Sadaf Ahmed, Dr. Joerg Sander

Iran University of Science and Technology Tehran, Tehran, Iran

Machine Learning Researcher June 2018 - July 2019
Transfer Learning for RL Agents / Image Captioning for Persian Language
Supervisor : Dr. Nasser Mozayani

Data Mining Researcher January 2016 - July 2019
Fraud Detection / Persian Word Association Norms / Dataset for Hashtag Recommendation
Supervisor: Dr. Hossein Rahmani

Computational Intelligence Tutor January 2019 - June 2019
Teaching Neural Networks basics to undergraduate students and assigning small projects in Keras (Python)
Instructor: Dr. Nasser Mozayani

Natural Language Processing Tutor January 2019 - June 2019
designing small projects for undergraduate student in regard to Persian language
Instructor: Dr. Sauleh Eetemadi

Artificial Intelligence and Expert Systems Tutor September 2018 - January 2019
Teaching undergraduate students, assigning weekly assignments and give them projects in python
Instructor: Dr. Mohammad Taher Pilehvar

Theory of Languages & Automata Tutor September 2017 - January 2018
Teaching undergraduate students theoretical aspects of Automata, giving them homework, and checking the answers
Instructor: Dr. Hossein Rahmani

Foundations of Computer & Programming Tutor September 2016 - January 2017

Teaching undergraduate students python programming and giving them small projects

Instructor: Dr. Adel Torkaman Rahmani

CERTIFICATES & ONLINE COURSE

- Reinforcement Learning Specialization — Fall 2019

  Instructed by Martha White and Adam White

- Deep Learning Course — Fall 2018

  Doing Three projects (Multi Layer Perceptron, CNN, RNN) with TensorFlow and working on multi-GPU servers at Sharif University of Technology

- Sequence Models — Spring 2018

  Instructed by Andrew Ng

- Reinforcement Learning Course — Summer 2016

  Introducing and working with Reinforcement Learning models and taking projects (Learning ATARI games) at Iran University of Science & Technology

SELECTED ACADEMIC COURSES

MSc Courses

Reinforcement Learning II	A
Intro to Machine Learning	A
Deep Learning for NLP	A

BSc Courses

Natural Language Processing	A^+	Computational Intelligence	A
Artificial Intelligence and Expert Systems	A^+	Discrete Mathematics	A
Analysis and Design of Algorithms	A	Signals & Systems	A
Operating Systems	A^+	Theory of Languages and Automata	A
Data Structure	A	Advanced Computer Programming	A

LANGUAGE SKILLS

Persian	mother tongue
English	Toefl Overall Score: 106
	GRE Quantitative: 168

REFERENCES

Available upon request.