Alireza Akhoundi

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Education

2018–Sep 2022	**Bachelor of Technology in Computer Engineering (Website)**. Amirkabir University Of Technology, Iran, Tehran GPA: 17.95/20
2016–2018	**High School Diploma, Mathematics**. Salam Sadeghie High School GPA: 19.35/20

Interests

Deep Learning

Computer Vision

Software Engineering

Reinforcement Learning

Work Experience

Sep 2021–Present	**Research Assistant**, *Under supervision of: Prof. Nickabadi*, Working on: StyleGAN latent space, GAN inversion, image manipulation. Amirkabir University Of Technology, Iran, Tehran
Jul 2021–Sep 2021	**Software Engineering Intern**, As an intern, I have learned: Kotlin, Spring Boot, Apache Kafka, MongoDB. Furthermore, I have been familiarized with the concept of teamwork in a professional group of software engineers. Tapsell, Iran, Tehran

Teaching Experiences

Fall 2020	Teaching Assistant, Data Structures, under supervision of: Dr. Hamid Hoorfar
Spring 2021	Teaching Assistant, Algorithm Design, under supervision of: Dr. Hamid Hoorfar
Spring 2021	Teaching Assistant, Algorithm Design, under supervision of: Prof. Alireza Bagheri
Spring 2022	Teaching Assistant, Robotics, under supervision of: Prof. Mahdi Javanmardi, provided content: link
Spring 2022	Teaching Assistant, Information Retrieval, under supervision of: Prof. Ahmad Nickabadi

Technical Skills

Programming Languages	Advanced: Python, JAVA - Intermediate: Kotlin, C, Javascript
Frameworks	Advanced: Django, Tensorflow - Intermediate: Pytorch, Spring Boot, CUDA, ROS

Operating Systems	Advanced: Linux(ubuntu), Windows
Databases	Advanced: Mysql, Mongodb - Intermediate: Postgresql
Industry Knowledge	Algorithms, Machine Learning, Deep Learning, Reinforcement Learning, Internet of Things
Other skills	Docker, Hadoop, Apache Kafka, Vagrant, Arduino, Git, Latex, Elastic Search

Projects

StyleGAN Latent Manipulation.
Objective: Find the effective channels with disentangled control on the generation of images.
Description: Trying to control some of the specific attributes, for example hair color, without changing the other attributes of an image generated by StyleGAN generator.
Status: In progress.

Autonomous driving amongst pedestrians using deep reinforcement learning.
Objective: Implementation and comparison between three different DRL algorithms (bachelor's thesis).
Description: This project's goal is to design an autonomous driving system focusing on collision avoidance between the ego vehicle and pedestrians. I am implementing three deep reinforcement algorithms (soft actor-critic, proximal policy optimization, and deep Q networks). The environment of experiments is the CARLA simulator. You can find the source code here.
Status: In progress.

AUT gamecraft.
Objective: Designing website for game designing event.
Description: Developing, testing and deploying backend services with Django rest framework, Docker, Celery, Postgresql. Source code is available in my github (source code).
Status: Finished.

Maze Runner.
Objective: Implementing obstacle detection algorithm in ROS with turtlebot.
Description: We have implemented VFH obstacle detection algorithm in the ROS environment, trying to prevent any touch between the robot and walls in a maze in Gazebo (source code) .
Status: Finished.

Certificates and Workshops

1 **Machine Learning at Coursera**

2 **Convolutional Neural Networks at Coursera**

3 **Neural Networks and Deep Learning at Coursera**

4 **Sequence Models at Coursera**

5 **Fundamentals of Reinforcement Learning at Coursera**

6 **Sample-based Learning Methods In Reinforcement Learning at Coursera**

7 **Attended one day workshop on GAN by Amirkabir Artificial Intelligence Summer Summit (AAISS).**

8 **DeepLearning.AI TensorFlow Developer Professional Certificate at Coursera.**

Languages

Persian: Native

English: IELTS overal score: **7.0** band scores:
- Listening: 8.5
- Reading: 6.5
- Speaking: 6.5
- Writing: 6.5

References

Alireza Bagheri, *Associate Professor*.
Member of Software Engineering group, Computer Engineering Dept., AUT, Tehran, Iran.
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Ahmad Nickabadi, *Assistant Professor*.
Member of Artificial Intelligence and Robotics group, Computer Engineering Dept., AUT, Tehran, Iran. **Email**: nickabadi@aut.ac.ir

Hamed Farbeh, *Assistant Professor*.
Member of Computer Architecture group, Computer Engineering Dept., AUT, Tehran, Iran.
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