

# Amir Abbasi

## Education

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- **B.S. in Computer Engineering**  
University of Guilan  
GPA: 18.30/20

Sep 2017 - Jul 2021

## Personal info

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**Name:** Amir Abbasi

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**Phone number:** +98(0)9363242510

**Homepage:** amir.abbasii.github.io

## Research Interests

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**Primary areas:**

- **Autonomous Vehicles:** I mainly research about utilizing reinforcement learning in self-driving cars. This is the main area which I am currently working on.
- **Reinforcement Learning:** This is the area that I am very interested in and I work in it as the main area.
- **Adversarial learning:** I'm seeking to utilize this type of learning in other learning methods(especially in RL).Also I'm interested in using GANs to generate unrealisitic images.

**Secondary areas:**

- **Computer Vision**
- **Medical Imaging:** I worked on a medical imaging task and I think it's very interesting to use AI in heathcare.

## Academic background

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Machine Learning,Deep learning,Adversarial Learning,Reinforcement Learning  
Transfer Learning,Multi-task Learning

## Research Assistant Experiences

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### Sperm abnormality detection

Sep 2019 – Aug 2020

Under supervision of Dr. S. A. Mirroshandel

· I worked on a Computer Vision task to make some models to detect sperm abnormality detection and we utilized transfer and multitask learning.

### Transfer learning in Generative models for generating medical images

Nov 2020-Present

Under supervision of Dr. S. A. Mirroshandel

· I'm currently working on a medical imaging task to use GANs for generating medical images.

### D3DQN:A Distributional Dueling Double DQN architecture for

Feb 2021-Present

## self-driving cars

Under supervision of Dr. Mahdi Rezaei

· In this project, we are going to train a vehicle to drive in a highway. We're using RL as our framework.

## Research Papers

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- Effect of deep transfer and multi-task learning on sperm abnormality detection  
**A. Abbasi**, E. Miah, S. A. Mirroshandel  
Computers in Biology and Medicine, Jan. 2020. (published)
- Transfer-GAN: Data augmentation using a fine-tuned GAN for sperm morphology classification  
**A. Abbasi**, S. Bahrami, S. Hemmati, S. A. Mirroshandel (under review)
- D3DQN: A Distributional Dueling Double DQN architecture for self-driving cars  
**A. Abbasi**, M. Rezaei (in prep.)

## Course Assistant Experiences

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### Fundamentals of Reinforcement Learning

Oct 2020-Present

Instructors: Adam White, Martha White

Coursera

This course is the first course of Reinforcement Learning Specialization which is one of MOOC courses offered by University of Alberta and it's used in some of Reinforcement Learning courses as assignment in University of Alberta. (According to link)

Duties: Answering students' questions and guiding them in assignments and quizzes (scientific questions, issues in code)

## Teaching Assistant Experiences

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- **Artificial Intelligence:** Fall 2020  
· I designed some of assignments and final project of course. The project was about using A\* algorithm to play a game.
- **Computational Intelligence: Head TA** Winter 2020  
· I designed list of final projects (with collaboration of the teacher) and also recorded some videos to teach Pytorch.
- **Data Structures: Head TA** Fall 2020  
· We designed 3 programming assignment (each assignment has about 5 questions) and also a final project. Finally we evaluated projects.
- **Advanced Programming: Head TA** Winter 2020  
· It was a very hard semester due to spreading of Corona virus and was the first time that I had to lead students online. We designed 6 projects, held discussion sessions online and evaluated projects. Fortunately it finished well like a normal semester.
- **Data Structures: Head TA** Fall 2019  
· I designed several projects (2 of 5) and also held discussion sessions. Also I evaluated projects of students (with collaboration of other TAs).
- **Advanced Programming:** Winter 2019  
· My duty was designing several projects (3 of 7) and also do some of programming examples (such as fundamentals of Java, OOP, Swing, Multi-threading and Socket Programming) to teach students. Also I evaluated projects of students (with collaboration of other TAs).

## Skills

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C++, Java, Python, VHDL, Keras, Pytorch, LaTeX

## Leadership Experiences

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**Ideal Intelligence publication** Jan 2021-Present  
Board member University of Kharazmi  
· The main duty of our team is to discuss about main future plans of the publication

**Ideal Intelligence publication** Jan 2021-Present  
Content producer University of Kharazmi  
· I'm a content producer in a publication which professionally is about AI and our goal is to write scientific articles about lots of AI fields. I mainly write about Reinforcement Learning and some of Computer Vision subjects.

## Self accomplished projects

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- Solving CartPole using distributional RL ([link](#))
- learn Tic-Tac-Toe: A simple adversarial tabular Q-learning approach ([link](#))
- Berkeley CS 285: Deep Reinforcement Learning (Fall 2020) ([link](#))
- Iran Stock prediction ([link](#))
- Oocyte Segmentation ([link](#))
- Don't overfit!; Kaggle ([link](#))

## Certifications

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- **Reinforcement Learning Specialization** (Certificate) Sep 2020  
Coursera, Instructors: Adam & Martha White
- **Practical Reinforcement Learning** (Certificate) Dec 2020  
Coursera
- **Build Basic Generative Adversarial Networks (GANs)** (Certificate) Oct 2020  
Coursera
- **Deep Learning Specialization** (Certificate) Dec 2018  
Coursera, Instructor: Andrew Ng.
- **Machine Learning** (Certificate) Dec 2018  
Coursera, Instructor: Andrew Ng.
- **Java Cup: Java programmer certificate** (Certificate) Oct 2018  
Javacup Association

## Bsc. final project

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**Transfer-GAN: Data augmentation using a fine-tuned GAN for sperm morphology classification**  
Keywords: Data Augmentation, Generative Adversarial Networks, Transfer Learning, Deep Learning  
Supervisor: Dr. Seyed Abolghasem Mirroshandel  
Team members: Amir Abbasi, Sepideh Bahrani, Tahere Hemmati

## Presentations

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Reinforcement Learning; A survey  
Best courses of Reinforcement Learning  
Introduction to Pytorch

## Honors & Awards

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**Full Scholarship, B.sc, University of Guilan** July 2017  
Ranked top %3 in the National University Exam in more than 148,000 participants.

**Exceptional Talent** Jan 2021  
Ranked within the top %15 among 71 graduates of Computer Engineering class

## References

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**Dr. Seyed Abolghasem Mirroshandel** University of Guilan  
Head of Computer Engineering Department, Associate Professor Rasht, Iran  
mirroshandel@guilan.ac.ir  
Homepage  
Dr. Mirroshandel was my teacher in six courses and also my supervisor in two researches.

**Dr. Mahdi Rezaei** University of Leeds  
University Academic Fellow, Assistant Professor West Yorkshire, England  
M.Rezaei@leeds.ac.uk  
Homepage  
Dr. Rezaei is my supervisor in a research paper.

**Dr. Seyed Mohammadhossein Shekarian** University of Guilan  
Assistant Professor Rasht, Iran  
shekarian@guilan.ac.ir  
Homepage  
Dr. Shekarian was my teacher in three courses.