Amir Abbasi

Education

- **B.S. in Computer Engineering**   Sep 2017 - Jul 2021
University of Guilan
GPA: 18.30/20

Personal info

Name: Amir Abbasi
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Homepage: amir.abbasii.github.io

Research Interests

Primary areas:

- **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 unrealisitc
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

Machine Learning,Deep learning, Adversarial Learning, Reinforcement Learning
Transfer Learning, Multi-task Learning, Natural Language Processing

Research Assistant Experiences

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   Jan 2021- Dec 2022
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.

Work Experiences

- **Founder** Sep 2021- Dec 2022
  Pisi
  Stage: Idea Validation
  Official site: https://pisi.onrender.com

- **Co-Founder and AI developer** Oct 2021-Apr 2022
  Smarton
  Stage: MVP

Research Papers

- Effect of deep transfer and multi-task learning on sperm abnormality detection
  A. Abbasi, E. Miahi, 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
  Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization, July 2023. (published)
- A novel approach based on attention-guided distributional reinforcement learning for highway overtaking by autonomous vehicles
  A. Abbasi, Zohreh Gholipour, Seyed Abolghasem Mirroshandel (under review)

Course Assistant Experiences

Funcdematals of Reinforecment 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

- **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,Mutli-threading and Socket Programmig) to teach students.Also I evaluated projects of students(with collaboration of other TAs).

Teaching Experiences

Transfer Learning and Multi-task Learning in medical fields   Cognitive neuroscience, KHU
Guest speaker and instructor   Aug 2021

Skills

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

Leadership Experiences

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

- **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

- **Entrepreneurship 1: Developing the Opportunity** (Certificate)   Nov 2021
  Coursera
- **Entrepreneurship 2: Launching your Start-Up** (Certificate)   Nov 2021
  Coursera
- **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:Andew Ng.
- **Machine Learning** (Certificate)   Dec 2018
  Coursera,Instructor:Andrew Ng.
- **Java Cup:Java programmer certificate** (Certificate)   Oct 2018
  Javacup Association

Bsc. final project

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 Bahrami, Tahere Hemmati

Presentations

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

Honors & Awards

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

AI startup camper candidate   Jul 2021
Accepted as one of 40 candidates among 300 applicants

References

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