Alireza Rahimi

Curriculum Vitae

Gmail
alireza9978
Alireza Rahimi
Home Page
DOB: June 2, 1999

Education

2017 - Now **B.Sc. in Computer Engineering**, *Ferdowsi, Mashhad, Iran, (FUM)*

- Last Two Year GPA: **19.32**/20
- Total GPA(140 course units): **18.05**/20
- One of the best universities in Iran
- University Rankings: THE, QS, USNWR

2013 - 2017 **Diploma in Mathematics and Physics**, *Hasheminejad High school, Mashhad, Iran (NODET)*

- Total GPA: **18.48**/20
- Administered under the National Organization for Development of Exceptional Talents

Research Interests

- **Machine Learning**
- **Deep Learning**
- **Time Series Analysis**
- **Digital Image Processing**

Publications

- **Alireza Rahimi**, Afshin Shahrestani, Sina Ramezani, Pedram Zamani, Soroush Omidvar, Mohammad Hossein Yaghmaee: **"Filter based time-series anomaly detection in ami using ai approaches"**, published in *2021 5th International Conference on Internet of Things and Applications (IoT)*, Link
- Navid Ghassemi, Afshin Shoeibi, Marjane Khodatars, Jonathan Heras, **Alireza Rahimi**, Assef Zare, Ram Bilas Pachori, J Manuel Gorriz: **"Automatic Diagnosis of COVID-19 from CT Images using CycleGAN and Transfer Learning"**, in *arXiv preprint arXiv:2104.11949*, 2021, Link

Experiences

Teaching Assistant

2019 - 2020 **Artificial intelligence**, *Ferdowsi, Mashhad, Iran*
Supervised by Dr. Ahad Harati, Dr. Saeid Abrishami

2018 - 2019 **Advance Programming**, *Ferdowsi, Mashhad, Iran*
Supervised by Dr. Samad Paydar (2018 - 2019), Dr. Mostafa Nouri Baigy (2019)

2020 **Computer Network**, *Ferdowsi, Mashhad, Iran*
Supervised by: Eng. Farnad Ahangari

2019 **Course Instructor, Android Beginner Course**, *Ferdowsi, Mashhad, Iran*
Three weeks Android crash course for undergraduate computer engineering students

Work

2020 - Now **Undergraduate Research Assistant**, *Ferdowsi, Mashhad, Iran*, IP-PBX Lab
With working under the supervision of Dr. Yaghmaei Moghadam, I developed several projects in cooperation with lab members, such as an anomaly detection platform as a service, Missing value imputation methods, and Power consumption prediction; by this means, I gained experience in machine learning, deep learning, and big data handling. I attained team management and teaching skills throw planning the lab projects and defining the lab interns' tasks in my last semester of working in the Lab.

2018 **Nexus Team Member**, *Ferdowsi, Mashhad, Iran*,
Ferdowsi's robocup soccer simulation team member.
Participation in RoboCup Asia-Pacific 2018 as Nexus2D team member.

2019 - 2020 **AI Developer**, *AITrends, Mashhad, Iran*
I worked in Aitrends Company as an AI developer. We had implemented several services with an excellent team, such as handwriting recognition service and House Pricing.

2018 - 2019 **Android Developer**, *AITrends, Mashhad, Iran*
I worked in Aitrends Company as an Android developer with an excellent team on several projects.

Extracurricular Activity

2022 **International Conference On Smart Cities, Internet of Things & Applications**, *Mashhad*, Link
Executive Committee Member

Selected Projects

2021 - 2022 **Missing Value Imputation for Power Consumption Data**, *Link, team of 3*
We Implemented more than 13 different imputation methods for time-series missing value handling. The Implemented methods included the most popular conventional methods and more advanced machine learning and deep learning models, such as RNNs and MLPs. We have tested techniques on a power consumption dataset to compare their results.

2021 - 2022 **Large-Scale Network Simulator**, *Link & Plotter*
I developed a simulator to evaluate different routing algorithms in a network with over 100000 IoT nodes and 300 routers. I used Java as my developing language to reduce the execution time, Also developed the project based on Object Oriented Programming principles. The user can define every detail of the network.

2022 **Mosift**, *Link*
For the final project of the Computer Vision course, I Implemented the Mosift algorithm with python. After the exact implementation based on this paper, I changed the method and added new features to improve the results.

2022 **Anime Recommender System**, *Link*
I have implemented three recommender systems with python as the final project of the Information Retrieval course. I tested content-based, collaborative-filtering and hybrid methods on the anime dataset.

2021 **Anomaly detection Smart Grid**, *Link, team of 5*
We were implementing a novel detection method to detect mining and electricity theft in the smart grid. We used real user data to implement and test our model.

2021 **Divar Data Mining**, *Link*
In the Data Mining course project with python, I implemented python code to preprocess the Divar dataset. After the data cleaning phase, I have used the Apriori algorithm to extract frequent patterns. I clustered objects in the dataset and detected anomaly prices in the final step.

2021 **Parallel Gray Wolf**, *Link, team of 2*
We implemented the gray wolf algorithm based on this paper with both python and c for the Concurrent Programming course. Also, we used the OpenMP to make the C programme parallel.

2021 **Web-based Intrusion Detection**, *Link, team of 2*
Using Snort and Django, we built a sample honeypot to detect intrusions in the form of SQL injection and also TCP Flood, saving all attempt payloads, IP addresses, and their country. This project was for the Fundamentals of Information Security course.

2021 **Fall Detection with IMU**, *team of 2*
We had worked on interpreting IMU-based sensor data in real-time to detect falls for creating wearable devices aiming to prevent hip fracture in the elderly.

2021 **Parking State Prediction**, *Link*
I developed several machine learning methods to predict Mashhad's parking state. I used a real dataset to train and test developed methods. As I was working with a real dataset, I had to deal with missing values and anomalies.

2020 **House Pricing System**
I developed an AI model to predict house prices in Mashhad. This project also uses a real dataset that real states submitted to the Manishen platform. The Manishen is the website to sell your house in Iran, and I developed that model for their company under the supervision of AItrends company.

2019 - 2020 **Parkners**, *team of 2*
I developed an Android application with Java to represent Mashhad's parking information online also helps users find the nearest parking to their destination and the shortest path to the parking.

2020 - 2021 **SomChinYar and DooseshYar**, *SomChin, Dooshesh, team of 2*
I have developed two android apps related to the farm and managing cow's information. I used Java to develop these applications, also used SQL to manage a massive amount of reports.

2019 - 2020 **Zima**, *Web Site, team of 4*
We developed an android application that Mashhad citizens can submit a request to ask our company to collect their recyclable materials at their house, and we pay them for that stuff. It's a great idea to make our city clean.

Selected Courses

Course Title	Grade out of 20	Course Title	Grade out of 20
Fundamentals of Computational Intelligence	20.00	Fundamentals of Computer Vision	19.39
Fundamentals of Data Mining	19.77	Fundamentals and Applications of Artificial Intelligence	20.00
Computer Vision	20	Design of Algorithms	16.90
Engineering Probability and Statistics	20.00	Applied Linear Algebra	19.00
Computer Networks	19.68	Fundamentals of Internet of Things	19.30

Skills

Programming Languages	Java(Professional, 2017 - Present)	Python(Professional, 2018 - Present)
	Android(Professional, 2018 - 2021)	C++(Intermediate, 2017 - 2019)
Others	SQL, Bash Script, Verilog	
Libraries	Tensorflow, Scikit-learn, OpenCV, Pandas, JavaFX, JUnit, FindBugs, Matplotlib	
Softwares	LaTeX, Arduino IDE, Visual Paradigm, Selenium IDE & WebDriver, Matlab, Proteus, STM32 CubeIDE	
Other Skills	Scrum, Git, Trello	

Languages

- English: Fluent (TOEFL iBT: **102**/120)
- Persian: **Native**

References

- **Dr. Mohammadhossein Yaghmaei Moghadam** Email, IEEE, Home Page
  Professor, Computer Eng, Department, Ferdowsi University of Mashhad
  IEEE Senior member (Link) and head of IP-PBX type approval lab
- **Dr. Saeid Abrishami** Email, Home Page
  Assistant Professor, Computer Eng. Department, Ferdowsi University of Mashhad
  Head of E-Learning Center of FUM
- **Dr. Mostafa Nouri Baigy** Email, Home Page
  Assistant Professor, Computer Eng. Department, Ferdowsi University of Mashhad