Amirhossein Rajabpour

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Research interests

Artificial Intelligence, Deep Learning, Time Series Analysis, Vision, Cloud Computing

Education

Amirkabir University Of Technology (Tehran Polytechnic) Tehran, Iran
B.Sc. Computer Engineering 2018 – Present
- *GPA: 17.11 (3.65/4)*
- *GPA (last two years): 18.62 (3.95/4)*

Allameh TabaTabaei High School Tehran, Iran
HighSchool, PreUniversity in Math. and Physics 2014 – 2018
- *PreUniversity GPA: 19.35 (4/4)*
- *High School GPA: 19.41 (4/4)*

Technical Skills

Programming Languages: Python, C, Java, Shell Scripting, Octave
OS: Windows, Linux (Ubuntu)
Artificial Intelligence: Tensorflow, Pytorch, Keras, Scikit learn, Fastai
Database Systems: MySQL, PostgreSQL
Web Development: Django, Flask, HTML, CSS
Miscellaneous: OpenCV, Docker, Jira, Git, LaTex, Numpy, Pandas, Plotly, Selenium, Xampp, Wireshark, GNS3, Arduino, Verilog, VHDL

Research and work Experiences

Bachelors Thesis | Amirkabir University | Sep 2022 – Present
Image styling using GAN. Supervised by Mohammad Rahmati.
Research Group | Amirkabir University | Feb 2022 – Present
Working with a research team supervised by Hamed Farbeh on portfolio asset allocation using reinforcement learning and graph neural networks. I was responsible for implementing a graph convolutional network from a time series dataset.
Machine Learning Engineer | R&D Department of Crouse PJS Co. | Oct 2021 – Jan 2022
Working on an Artificial Intelligence Vision problem. My job was to design a light model to do the following to recognize whether LEDs on the monitor work fine:
- Localizing LEDs on the monitor
- Clustering LEDs light pixels and using the more valuable clusters for extracting light information with fuzzy C-means clustering
- Extracting luminance and wavelength from those selected clusters

- Use different regression models for different LED colors to detect malfunctioning LEDs

DevOps Engineer Intern | Graph Co. | Nov 2020 – Apr 2021
Working with Docker, Minikube, and some backend technologies

Selected Projects[1]

Search Engine: Implementing a search engine using different search models and algorithms like binary search, tf-idf and word embdding. Also implementing K-means clustering and KNN algorithms to speed up the search
Genetic Algorithm: Implementing genetic algorithm in order to solve Super Mario game
Constraint Satisfaction Problems: Implementing CSP Backtracking, Forward Checking and MAC Algorithms in order to solve a binary puzzle
Handwritten Digit Recognition from scratch: Implementing a neural network from scratch with/without vectorization
Fuzzy C-Means Clustering: Implementing the fuzzy version of the K-Means algorithm is implemented. Each data point is not forced to belong only to a specific cluster but can belong to varying degrees
Searching Algorithms: IDS, BBFS, A*: Implementing searching algorithms like IDS, BBFS and A* from scratch in order to find optimal path. In this program a robot should push a piece of butter to a plate and the robot should do this optimally with no extra moves
Internet of Things: Implementing multiple scenarios using NodeMCU board and various sensors and actuators, programming the board using Arduino language. Moreover, implementing web-based solutions for some scenarios
Jpotify: Music player written in Java that can load/save songs, create/edit/delete playlists and connect to another client and share songs

Teaching Experiences

Teaching Assistant | Principles of Artificial Intelligence | Fall 2022
- Under the supervision of Mahdi Javanmardi
- Designing (and grading) projects about Constrained Satisfaction Problems, adversarial search, Bayes Nets, and Reinforcement Learning

Teaching Assistant | Cloud Computing | Fall 2022
- Under the supervision of S.Ahmad Javadi
- Designing (and grading) practical assignments about using APIs, working with cloud services, and working with Docker and Kubernetes

Teaching Assistant | Internet of Things | Fall 2022
- Under the supervision of Siavash Khorsandi
- Designing (and grading) assignments about various scenarios for working with different sensors and actuators and programming with Arduino

Teaching Assistant | Algorithm Design | Spring 2022 & Fall 2021 & Spring 2021
- Under the supervision of Alireza Bagheri, Sajad Shirali-Shahreza

[1] *All the projects and their descriptions can be found on my GitHub*

- Defining and grading assignments
- Taking quizzes

Honors and Awards

Achieved top 1% place among more than 140,000 applicants of the Nationwide University Entrance Exam for B.Sc. in Math. and Physics — Iran, 2018

Selected Relevant Education and Coursework

- **Data Mining:** 19.10/20
- **Microprocessor and Assembly lang.:** 20/20
- **Information Retrieval:** 19.28/20
- **Software Engineering2:** 20/20
- **Principals of Artificial Intelligence:** 18.6/20
- **Web Programming:** 20/20
- **Algorithm Design:** 20/20
- **Operating Systems:** 18.16/20
- **Cloud Computing:** 20/20
- **Startup Development:** 20/20
- **Computational Intelligence:** 18.5/20
- **Microeconomics:** 20/20
- **Internet of Things:** 19.57/20

Language Skills

Persian: Native
English: TOEFL iBT: 109 (R: 26, L: 28, S: 26, W: 29)
German: Professional Working Proficiency (B2)

References

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**To review my projects and certificates, check my Homepage.*