

# ZAHRA PARHAM

Curriculum vitae last updated on September 16, 2020  
424 Hafez Ave, Tehran, Iran, 15875-4413. ✧ (+98)9120749389



## RESEARCH INTERESTS

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- Reinforcement Learning
- Deep Learning
- Human Computer Interaction
- Applications of Optimization
- Linear Algebra
- Cognitive science

## EDUCATION

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**Bachelor of Science in Computer Science** 2015-2019  
Amirkabir University of Technology(Tehran Polytechnic), Tehran, Iran  
CGPA: 3.55/4  
Last Two Years GPA(71 Credits): 3.73/4      Selected Courses <sup>1</sup>

## RESEARCH EXPERIENCE

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**Multi-Agent Deep Reinforcement Learning** 2019-2020  
*BSc Project, Supervisor: Dr. Akbari*

- solved pursuit-evasion problem with multi-agent deep reinforcement learning

**RoboCup Rescue Virtual League** Fall 2018  
*Team SOS CS, Supervisor: Dr. Shiry Ghidary*

- The main objective was to prevent the robot from getting stuck next to the walls while crossing.
- We benefited Gazebo for 3D simulation. As for developing the robot and its model, we utilized ROS and P3AT

## TEACHING EXPERIENCE

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**TA, Software Engineering** Winter 2020  
*Instructor: Dr.Amin Gheibi*

**TA, Fundamentals of Numerical Analysis** Fall 2019  
*Instructor: Dr.Fatemeh Shakeri*

**TA, Introduction to The theory of Computation** Winter 2019  
*Instructor: Dr.Naser Hashemi*

## WORK EXPERIENCE

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**Data Developer** May 2019 - Present  
*Snapp Company*

- Wrote SQL queries to aggregate data
- Performed business analysis and wrote SQL scripts to analyze data and parse to Excel.
- Generated ad-hoc to provide visible data for data analysts and business using SSRS and Power Bi

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<sup>1</sup> Introduction to Computer and Programming : A; Statistics and Probability 1 : A ; Foundation of Matrix and Linear Algebra : A; Foundation of Combinatorics : A<sup>+</sup> Linear Optimization : A Foundation of Numerical Analysis : A<sup>+</sup> Database : A<sup>+</sup> Principles of Computer Systems : A<sup>+</sup> Computer Networks : A<sup>+</sup> Compiler : A<sup>+</sup> Principles of Operating Systems : A<sup>+</sup> Numerical Linear Algebra : A<sup>+</sup> Numerical Methods for Linear Algebra(Master Course) : A<sup>-</sup>

- Developed ETL pipeline in python
- Developed Clickhouse Data Pipeline for Real Time Analysis and Reporting
- Developed Powerbi/Superset/Grafana Tech Stack for Visualization and advanced reporting and dashboard analysis
- Worked on Clickhouse, MySQL, Sql Server, BigQuery

## Web Developer

December 2017-May 2018

*bimebazar*

- The job partially consisted of modeling insurance products
- Self taught Django and React.JS to build websites

## TRAININGS AND WORKSHOPS ATTENDED

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### Summer School in Computer Science

August 24th-27th, 2019

*Tehran Institute for Advanced Studies at Khatam University*

- participated in a 32-Hour Summer School in Computer Science with special theme on: Data Science and Machine Learning
- I was offered a 75% scholarship on the registration fee for the school

### Workshop of Computational and Mathematical Psychology

April 21th-23th, 2020

*Institute of Cognitive and Brain sciences (ICBS) of Shahid Beheshti University*

- participated in the 1st Workshop of Computational and Mathematical Psychology: Deep Learning and Neural Networks

### Deep Learning Specialization

June 2020

*deeplearning.ai course*

- certificated in Neural Networks and Deep Learning Course

### Data Science Course

April 2020

*365datascience*

- certificated in Probability, Statistics, Mathematics, SQL, Python, Git, Deep Learning with TensorFlow and Web Scraping and API Fundamentals in Python

### Data Science Math Skills

August 2020

*Duke University*

- learned the basic math skills for data science.

## PROJECTS

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### Multi-Agent Deep Reinforcement Learning

2019 - 2020

*BSc Project*

- solved pursuit-evasion problem with multi-agent deep reinforcement learning

### Deep Neural Network for Image Classification

June 2020

*deeplearning.ai Course*

- Built a deep network, and applied it to cat vs non-cat classification
- The first course of Deep Learning Specialization by [deeplearning.ai](https://deeplearning.ai)

### Rescue virtual robot

Fall 2018

*Computer Science Robotics Lab*

- The main objective was to prevent the robot from getting stuck next to the walls while crossing.
- We benefited Gazebo for 3D simulation. As for developing the robot and its model, we utilized ROS and P3AT respectively.

### **Linear Algebra Project**

Jan 2019 - July 2019

*Numerical Methods for Linear Algebra(Master Course)*

- solved a tridiagonal Toeplitz and block-Toeplitz matrix with Jacobi and Gauss-Seidel and SOR methods.
- Investigated the convergence of several iterative methods

### **Data Mining Contest**

July 2019

*Amirkabir Data Mining Cup 2018*

- Predict plane ticket prices using Linear Regression.

### **Created a website for a company**

Sep 2018

*Freelance Project*

- My first ReactJS website for my freelance client.

### **Birthapp: An application that helps you buy birthday gifts**

Jan 2018 - July 2018

*Software Engineering Course Project*

- This project is a platform on which people can follow each other while proposing a list of their most desired birthday gifts.
- The application was Developed using Scrum Methodology for Agile Software Development.
- The coursework required 5 presentations throughout the semester which included a 5-minute startup pitch presentation and the presentation of the first MVP(Minimum Viable Product).

### **Multi threading programming**

Jan 2019 - July 2019

*Principles of Operating Systems Course Project*

- Determined the validity of a sudoku solution using multi threading in Java
- Implemented merge sort with multi threading in Java

### **Simulation of a tourist guide application**

Jan 2017 - July 2017

*Advanced Programming Course Project*

- object oriented java coding

## **HONORS AND AWARDS**

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### **4th Place - RoboCup Asia-Pacific 2018**

winter 2018

*Math and Computer Science Faculty*

- Field: Rescue Simulation Virtual Robot
- Team: SOS CS Team

### **Ranked Within the Top 1% ( among 300,000 students) in Iranian University Entrance Exam**

Jul 2015

*Tehran, Iran*

- The competition is intense since it is the only means to gain admission to universities.

## **SKILLS**

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<b>Programming Languages</b>	C/C++, Python, Java, Matlab
<b>Web Technologies</b>	HTML, CSS, Javascript, MySQL, SQL Server, Django, Reactjs
<b>Libraries</b>	numPy, Pandas, TensorFlow, Scikit-Learn, Keras, Matplotlib
<b>Robotics</b>	Robot Operating System(ROS), Gazebo
<b>Operating Systems</b>	Linux, Windows
<b>Languages</b>	Persian, English(TOEFL iBT test date: November 14th)
<b>Miscellaneous</b>	L <sup>A</sup> T <sub>E</sub> X, Jupyter, Git, Microsoft Office, GAMS

**❶ References, further information, and proofs are available upon request**