





# AFSHIN SHAHRESTANI

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## EDUCATION

### Ferdowsi University of Mashhad (FUM)

Mashhad, Iran

Bachelor of Computer Engineering - GPA 17.37/20 (3.58 GPA)

Sep. 2016 – Sep. 2021

- Last 3 Semesters GPA 4.0
- **Relevant Coursework:** Data Mining - Database - Computer Vision - Artificial Intelligence - Computational Intelligence - Information Retrieval - Data Structures

## AREAS OF INTERESTS

**Machine Learning - Deep Learning - NLP - Representation Learning - Reinforcement Learning - Data Mining - Computer Vision - Recommender Systems - Information Retrieval - Time-series Analysis**

## EXPERIENCE

### Machine Learning Developer & Data Analyst

Dec 2021 – Present

AI-Trader

Mashhad, Iran

- Researched and worked on cryptocurrency price prediction using Machine and Deep Learning.
- Worked on developing a trade recommendation system for cryptocurrency market.
- Researched and worked on developing a trader agent using Deep Reinforcement Learning.
- Performed various feature extraction techniques, such as using Autoencoders, to generate valuable features from the available data.

### Undergraduate Research Assistant, ML Developer (IP-PBX Lab)

Dec 2020 – Present

Ferdowsi University of Mashhad (FUM)

Mashhad, Iran

- Researched and developed several anomaly detection methods in power consumption data.
- Worked with team on design, development of an anomaly detection platform as a service.
- Gained experience in machine learning, deep learning, data mining and big data handling.
- Currently managing new interns for the summer in the lab.
- Worked under the supervision of *Prof. Mohammad Hossein Yaghmaee Moghaddam*.

### Undergraduate Research Assistant (Software Quality Lab)

May. 2019 – Apr. 2021

Ferdowsi University of Mashhad (FUM)

Mashhad, Iran

- Researched on microservice architecture design patterns and their relation to Object Oriented GoF patterns
- Worked with team on design and development of a benchmark for microservice architecture design pattern detection
- Worked under the supervision of *Prof. Abbas Rasoolzadegan*.

### Teaching Assistant

Fall 2018 – Fall 2020

Ferdowsi University of Mashhad (FUM)

Mashhad, Iran

- Teaching assistant for several courses in the duration of 2 years
  - \* Object Oriented Designs of Systems (Master's class)
  - \* Object Oriented Designs of Systems (Bachelor's class)
  - \* Languages and Machines Theory (5 Classes)
  - \* Data Structures
  - \* Design & Analysis of Software Systems (2 Classes)
  - \* Software Engineering Lab (2 Classes)
  - \* Database (2 Classes)
  - \* Information Retrieval

## RESEARCH & PROJECTS

### Behanjar (Ongoing) | Python, Pandas, Keras

Dec. 2020 – Present

- Developed a platform to detect anomalies in power consumption data of real users created using Python
- Implemented a data pre-processing pipeline for datasets
- Researched on different methods of finding anomalies in data using Machine Learning, Deep Learning and Statistical Analysis
- Published a conference paper on anomaly detection in power consumption data using the data and methods used in this project

**Story Generation for the Destiny 2 Video Game (Ongoing)** | Python, PyTorch, GPT-2

Sep. 2021 – Present

- Crawled all the in-game texts and stories to create a dataset
- Created and fine-tuned a text generation model on the gathered dataset using GPT-2 and PyTorch to write text similar to the ones in the game
- Researched on text style transfer from in-game stories to generated text

**Missing Value Imputation for Power Consumption Data (Ongoing)** | Python, Keras, scikit-learn

Sep. 2021 - Present

- Implemented more than 13 different imputation methods for time-series missing value handling
- The Implemented methods included most popular conventional methods and more advanced machine learning and deep learning models, such as RNNs and MLPs
- The methods were tested on a power consumption dataset to compare their results

**Multilingual Hate Speech Detection** | Python, Transformers, NLTK, scikit-learn

Nov. 2020 – Feb. 2021

- Tested different sentence and word embeddings methods on OffensEval dataset to detect hateful tweets in different languages
- Used Python and transformers such as mBERT and XLM-RoBERTa
- Fully preprocessed the given text data to become more understandable by the computer

**Analysing E-commerce Website Data (Course Project)** | Python, scikit-learn

Nov. 2020 - Jan. 2021

- Preprocessed the transaction and users' data of Digikala, an e-commerce website.
- Mined the association rules between different users, transactions and items.
- Clustered users to discover certain relations between them.

**Better Exam** | Python, Flask, Azure Cognitive Services

Feb. 2021 – Mar. 2021

- Created an exam hosting service for the visually impaired
- It was built using Azure Cognitive Services' Text-to-Speech and Speech-to-Text.
- This project was developed for *AZURE AI HACKATHON 2021*

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**PUBLICATIONS**

A. Rahimi, **A. Shahrestani**, S. Ramezani, P. Zamani, S. O. Tehrani and M. H. Y. Moghaddam, "Filter Based Time-Series Anomaly Detection in AML using AI Approaches," 2021 5th International Conference on Internet of Things and Applications (IoT), 2021, pp. 1-6, doi: 10.1109/IoT52625.2021.9469717.

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**SKILLS**

**Languages:** Python, Java, SQL, JavaScript, Dart, C

**Libraries:** NumPy, Pandas, Keras, TensorFlow, PyTorch, Transformers, scikit-learn, Matplotlib, Statsmodels

**Databases:** MySQL, MongoDB, SQL Server, SQLite

**Developer Tools:** Git, PyCharm, VS Code, Google Colab, Jupyter Notebook

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**LANGUAGE SKILLS**

**Persian:** Native

**English:** Fluent Toefl 116 (Reading 30 Listening 27 Speaking 29 Writing 30) taken at January 26, 2021

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**REFERENCES**

- **Dr. Mohammad Hossein Yaghmaee Moghaddam**  
📍 Professor - Computer Engineering Department, Ferdowsi University of Mashhad (FUM)  
@yaghmaee@ieee.org
- **Dr. Mohsen Kahani**  
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- **Dr. Abbas Rasoolzadegan**  
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