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 Semester GPA 19.56 (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 - Data Mining - Machine Vision - Information Retrieval - Anomaly Detection and Forecasting

Experience

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

Multilingual Hate Speech Detection | *Python, Transformers, NLTK, scikit-learn* Nov. 2020 – Feb. 2021

- Tested different sentence and work 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

Semantic Clustering of Students' research fields | *Python, NLTK, scikit-learn* Nov. 2020

- Clustered university students by field and their semantic relation to each other using work embeddings and agglomerative clustering

Analysing E-commerce Website Data | *Python, scikit-learn* Nov. 2020 - Jan. 2021

- Preprocessesed 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.
- This project was done as the course project of Fundamentals of Data Mining Course

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*

Publications

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

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

Language Skills

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

References

- **Dr. Mohsen Kahani**
  Professor - Computer Engineering Department, Ferdowsi University of Mashhad (FUM)
  @ kahani@um.ac.ir

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

- **Dr. Abbas Rasoolzadegan**
  Associate Professor - Computer Engineering Department, Ferdowsi University of Mashhad (FUM)
  @ rasoolzadegan@um.ac.ir