

Mahdi RAHBAR

Machine Learning Engineer

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NOVEMBER 12, 2023

WORK EXPERIENCE

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| Present May 2022 | [5] Machine Learning Engineer Centene Corporation, Clayton, MO, USA <ul style="list-style-type: none">> Developing a replacement platform for AWS Textract (OCR Engine + Named-Entity Recognition Engine.> A native OCR system alongside image enhancement module.> Developing a named entity recognition engine. |
| May 2023 Aug 2021 | [4] Research Assistant Machine Learning Lab Department of Computer Science, Saint Louis University, MO, USA Dr. Jie Hou <ul style="list-style-type: none">> Developing Novel Attention-based Deep Learning Frameworks to Solve Protein 3D Structure Prediction> Transfer Learning in Protein 3D Structure Predictions |
| May 2020 Feb 2019 | [3] Research Assistant Azad University, Tehran, Iran Dr. S Yazdani <ul style="list-style-type: none">> Research on deep neural architecture search applied to COVID-19 data. (Mentioned in research projects' section)> Proposed a novel algorithm, Robust Monarch Butterfly Optimization |
| May 2020 Dec 2018 | [2] Research Intern & Machine Learning Framework Developer Machine Learning & Text-Mining Lab Iranian Research Institute for Information Science and Technology, Tehran, Iran Dr. J Nasiri <ul style="list-style-type: none">> Research on attention-based models for aspect-based sentiment analysis> LIBTwinSVM An open-source project for developing a library for Twin Support Vector Machine> Research and development of a Persian text processing framework |
| Sep 2017 Jun 2016 | [1] Co-founder and Developer Ravanyar, Tehran, Iran <ul style="list-style-type: none">> Developed the main backbone of the web application. |

EDUCATION

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| Saint Louis University, MO, USA | <u>Master's in Artificial Intelligence (GPA: 4.0) - May 2023</u> |
| Azad University, Tehran, Iran | <u>Bachelor of Engineering in Computer Software Engineering - May 2021</u> |

- Notable Certificates:
- Databricks: Large Language Models (LLMs): Application through Production
 - Databricks: Machine Learning Practitioner
 - Databricks: Databricks Lakehouse Platform
 - Coursera: Neural Networks & Deep Learning
 - Coursera: TensorFlow for AI, Machine Learning & Deep Learning
 - Pirlpe: Data Mining
 - Pirlpe: Full Stack Web Development with Flask

TECHNICAL SKILLS

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| Coding Languages | Python, C++, R, MATLAB, CUDA, OpenMP, Java(familiar), JavaScript(familiar),Perl(familiar), Scala(familiar) |
| AI Proficiency | Generative AI, Natural Language Processing (Large Language Models LLMs, Text-Mining, Tokenization, Text Classification, Named Entity Recognition (NER), Part-of-Speech Tagging, Machine Translation, Text Generation, Topic Modeling and Question Answering), Data Science (Data Analysis, Data Mining, Statistical Analysis, Exploratory Data Analysis (EDA), Predictive Modeling), Computer Vision, MLOps |
| Machine Learning Frameworks | Custom Tensorflow models, Keras, PyTorch, JAX, Hugging Face, OpenCV, DataBricks, Databricks Lakehouse, Apache Spark |
| Software Engineering Skills | Software Development Phases, Memory Optimization, Software Testing, Git, Docker, Kubernetes, Travis-CI, Linux & Bash scripting, Web and API development, Agile and Scrum |

PUBLICATIONS

[5] Mahdi Rahbar, R. K. Chauhan, P. N. Shah, Renzhi Cao, Dong Si, and Jie Hou. "Deep graph learning to estimate protein model quality using structural constraints from multiple sequence alignments." In Proceedings of the 13th ACM International Conference on Bioinformatics, Computational Biology and Health Informatics, pp. 1-10. 2022. [Published & presented at ACM-BCB 2022](#)

 github.com/JieHou-SLU/DeepGLEAMPro

[4] Mahdi Rahbar, and Samaneh Yazdani. "Forecasting of COVID-19 Cases, Using an Evolutionary Neural Architecture Search Approach." arXiv preprint arXiv:2109.13062 (2021). Preprint at [arxiv](#)

 github.com/MahdiRahbar/

[3] Mahdi Rahbar, and Samaneh Yazdani. "Historical knowledge-based MBO for global optimization problems and its application to clustering optimization." Soft Computing 25, no. 5 (2021): 3485-3501. Published - October 2020

 github.com/MahdiRahbar/RMBO

[2] Mir, Amir M., Mahdi Rahbar, and Jalal A. Nasiri. "LIBTwinSVM: A library for twin support vector machines." arXiv preprint arXiv:2001.10073 (2020). preprint at [arxiv](#)

 github.com/mir-am/LIBTwinSVM  [Readthedocs](#)

[1] Mahdi Rahbar, and Jalal A. Nasiri, "FarsiYar: A Novel Text-Mining Framework for Informal Persian Text Classification" In Proceedings of the 5th Iranian National Computational Linguistic Conference Published and Presented - July 2019

 github.com/MahdiRahbar/Papers/5th Iranian National Computational Linguistic Conference

PRESENTATIONS

[2] Deep graph learning to estimate protein model quality using structural constraints from multiple sequence alignments [Published and presented at ACM-BCB 2022 Conference](#)

 github.com/JieHou-SLU/DeepGLEAMPro

Presented the published paper in the ACM-BCB 2022 conference.

[1] FarsiYar: A Novel Text-Mining Framework for Informal Persian Text Classification Accepted - July 2019

 github.com/MahdiRahbar/Papers/5th Iranian National Computational Linguistic Conference

Presented the published paper and the framework at the 5th Iranian National Computational Linguistic Conference.

POSTERS

[1] A deep graph learning approach to rank protein-protein interaction structures [Accepted at ISMB 2022 Conference](#)

 github.com/MahdiRahbar/

Proposed a framework to tackle to application of estimating quality of protein-protein interaction structures.

TEACHING EXPERIENCE

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| Present Aug 2022 | [4] Teaching Assistant Machine Learning Course CSCI-4750/5750 Department of Computer Science, Saint Louis University, MO, USA Dr. Jie Hou > Teaching assistant for machine learning classes, session 1 & 2 - with 80 students. |
| Present September 2022 | [3] Guest Speaker at Machine Learning Class CSCI-4750/5750 Saint Louis University > Covering preprocessing data for real world applications. > Machine Learning applications in industry. |
| Nov 2019 Nov 2019 | [2] Guest lecturer at the Natural Language Processing Class Kharazmi University, Tehran, Iran > Series of workshops for graduate students to cover relevant programming steps in NLP. > Covering different preprocessing approaches and algorithms in processing text data. |
| May 2021 October 2018 | [1] Programming Teacher & Python Tutor in workshops Azad University, Tehran, Iran > Teaching Python applied data science & Machine Learning |