ALIREZA MOHAMMADI

Islamic Azad University, Kermanshah Branch, IRAN

E-mail ◇ LinkedIn ◇ Github ◇ Web site ◇ Google Scholar

EDUCATION

B.Sc. in Computer Engineering, Islamic Azad University 2020 - 2024
Kermanshah, Iran
CGPA: **3.5**/4

RESEARCH INTERESTS

• Artificial Intelligence • Machine Learning • Optimization • Data-driven Approaches

ACADEMIC EXPERIENCE

Research Assistant | *Islamic Azad University* | *Supervised by Dr.Parandin* 2022 - Present
• Coding and Optimizing ML algorithms for the improvement of the gate's performance.
• Contributed to the publication of a Scopus-indexed journal paper.
• Leveraged ML to develop a predictive model for castration resistance events in the treatment of prostate cancer.

Teaching Assistant | *Islamic Azad University* | *Supervised by Dr.Habibi* 2023

- TA of Computational Intelligence [Link]
- TA of Natural Language Processing

As a Teaching Assistant, I conducted teaching sessions, led class discussions, and provided support in understanding complex concepts. I also assisted students with assignments, offered feedback, and guided them through coding and problem-solving exercises.

Research Assistant | *Student Research Center* | *Supervised by Dr.Jamshidi* 2015 - 2018
• Focused on the development of a cutting-edge window with Nanotechnology.
• Published my first conference paper out of my passion for research before starting my university studies.[Link]

PUBLICATIONS

ACADEMIC JOURNALS

1. F Parandin; **A Mohamadi**. "Designing and Optimizing a Photonic Crystal-Based All-Optical XOR Gate Using Machine Learning". Majlesi Journal of Electrical Engineering, 2023.[Link] (***Scopus indexed***)
2. **A Mohamadi**, M Habibi, F Parandin. "Integration of Clinical, Genetic, and Molecular Features in Predicting Castration Resistance Events in Prostate Cancer: A Comprehensive Machine Learning Analysis". Journal of Electrical and Computer Engineering Innovations (JECEI).[Link] (***Google Scholar indexed)***
3. P Karami, F Parandin, **A Mohamadi**. "Machine Learning-Driven Optimization of Photonic Crystal Structures for Superior Optical NOR Gate Performance" Applied Optics, 63(25), 6666-6673.[Link] (***Q2)***
4. P Karami,**A Mohamadi**, F Parandin. "Innovative Approach to Optical Logic Gates Optimization Using Deep Learning and Machine Learning" (Submitted) (***Q1)***

CONFERENCE PROCEEDINGS

5. **A Mohammadi**, F Parandin, H Ghahramani. "Neural Network-Driven Optimization of Photonic Crystal-Based All-Optical NOT Gate Design" 2024 Third International Conference on Distributed Computing and High Performance Computing (DCHPC).IEEE,2024.[Link] (***IEEE indexed***)
6. F Parandin, **A Mohammadi**. "Enhancing the Performance of Photonic Crystal AND Gates with Machine Learning Optimization" 2024 Third International Conference on Distributed Computing and High Performance Computing (DCHPC).IEEE,2024.[Link] (***IEEE indexed***)

AWARDS & HONORS

- Conducting a workshop on 'An Introduction to Artificial Intelligence' at Islamic Azad University 2023
- Interviewed by Hamshahri newspaper and hispanTV as the Student Inventor [Link] 2016
- Ranked first in Laboratory Sciences in Kermanshah province 2016
- Selected idea for the 8th Student Festival Nanoscience and Nanotechnology [Link] 2015
- Recognized exceptional talent by National Organization for Development of Exceptional Talents 2014

SKILLS

Programming	Python, C++
Libraries	scikit-learn, Auto-sklearn, TensorFlow, OpenCV, Matplotlib, NumPy, Pandas
Skills	Machine Learning, Data Analysis, Research Prowess, Optimization, Auto-Ml, Fuzzy Logic

LICENSES & CERTIFICATIONS

- Supervised Machine Learning: Regression and Classification [Link] Coursera Stanford online
- Python for Data Science and Machine Learning Bootcamp Udemy

SELECTED COURSES

- Foundations of NLP and Speech (4/4)
- Artificial Intelligence and Expert Systems (4/4)
- Foundations of Computational Intelligence (4/4)
- Foundations of Computer Vision (4/4)

LANGUAGES

- Duolingo English Test : Score 115
- Farsi: Native speaker

PROJECTS

Predicting Castration Resistance in Prostate Cancer with Machine Learning | *supervised by Dr.Parandin*
Developed a predictive model using a random forest classifier to anticipate Castration Resistance Events (CREs) in metastatic castration-sensitive prostate cancer. Achieved 0.75 accuracy, highlighting the potential of machine learning in treatment decisions. [Github]

Revolutionizing Optical Gate Simulations with Machine Learning | *supervised by Dr.Parandin*
Explored an innovative machine learning-based approach to improve optical gate simulation software.Addressed challenges related to processing time and output points, enhancing efficiency and accuracy in simulations.

REFERENCES

1. Fariborz Parandin
   - Associate Professor (Department of Electrical Engineering, Islamic Azad University, Kermanshah)
   - Email: fa.parandin@iau.ac.ir
2. Sobhan Roshani
   - Assistant professor (Department of Electrical Engineering, Islamic Azad University, Kermanshah)
   - Email: s.roshani@aut.ac.ir
3. Maryam Habibi
   - Dean of the Faculty (Department of Computer Engineering, Islamic Azad University, Kermanshah)
   - Email: Ma.habibi@iau.ac.ir