

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" (Submitted) (*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)
- Foundations of Computational Intelligence (4/4)
- Artificial Intelligence and Expert Systems (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