MOHAMMAD PASHAEI

GRADUATE RESEARCHER, SPORT ENGINEERING LABORATORY, UNIVERSITY OF TEHRAN

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SUMMARY

I started as a mechanical engineer, but I was always drawn beyond traditional mechanics.
Early on, I explored the intersection of mechanics and artificial intelligence, applying machine learning to vibration and Audio signals analysis and fault diagnosis.
My passion for AI and sports led me to pursue an M.Sc in Sports Engineering,
where I now work on medical image processing,reinforcement learning, and game theory in strategic modeling.
Still, I never limit myself — I'm fascinated by any interdisciplinary field where AI can push the boundaries, whether in Sport or Biomedical engineering, mechanics, or economics.

EDUCATION

M.Sc. in Sports Engineering at University of Tehran (UT), 2024-2026
GPA: 19.2 / 20
Supervisors: Dr. Ali Fhim, Dr.Hadi Amiri
Thesis: Applying Reinforcement Learning into game Strategy in Football.

B.Sc. in Mechanical Engineering (Mechatronics) at Isfahan University of Technology(IUT), 2018-2023
Thesis: Audio-Based Fault Diagnosis of Ventilation Fans Using Machine Learning Algorithms.

RESEARCH INTERESTS

- Artificial Intelligence in Football Analysis
- Reinforcement Learning and Game Strategy in Sports
- Image and Signal Processing
- Artificial Intelligence in Economics

RELEVANT RESEARCH PROJECTS

- Reinforcement Learning in Football simulation. (2025)

"Short-term gains vs. long-term Success: Reward strategy design for reinforcement learning in football."

- Computer Vision in Sport. (2025)

"A Computer Vision Approach to Classifying Correct and Incorrect Plank Exercises Using Clustering Techniques, Achieving Results Comparable to Supervised Methods."

- Deep Learning in Fault diagnosis in Ventilation Fan. (2025)

"AXAN-Net: An Adaptive Exponential Approximator Neural Network for Latent Feature Composition with Applications in Audio-Based Fan Fault Detection."

- classic Machine Learning in Fault Diagnosis of Ventilation Fan. (2023)

"Audio-Based Fault Diagnosis of Ventilation Fans Using Machine Learning Algorithms."

PUBLICATIONS

- Pashaei, M., Tayebi, A., Amiri, H., & Fahim, A. (2025, November 18–20). Short-term gains vs. long-term success: Reward strategy design for reinforcement learning in football. In Proceedings of the 32nd National and 10th International Iranian Conference on Biomedical Engineering (ICBME 2025), Tabriz, Iran. IEEE. (Accepted)

- Pashaei, M., Forootan, E., Mazaheri, R., & Mahmoudi, S. (2025, December 23–24). AXAN-Net: An adaptive exponential approximator neural network for latent feature composition with application in audio-based fan fault detection. In Proceedings of the 11th International Conference on Signal Processing & Intelligent Systems (ICSPIS 2025), Mazandaran University of Science and Technology, Iran. IEEE. (submitted)

- M. Pashaei, A. Aghdaee, M. Khorramabadi Arani, "Audio-based faultdiagnosis of ventilation fans using machine learning algorithms", Proceedings of the 14th International Conference on Acoustics & Vibration (ISAV2024), Karaj, Iran, December 2024.(Published)

RELEVANT GRADUATE COURSES

- Machine Learning 20/20
- Digital Image Processing 19.5/20
- Statistical Data Analysis and Linear Algebra 19/20
- Musculoskeletal System Biomechanics 19/20
- Exercise Physiology 20/20

WORK EXPERINCES

- Mechatronics Engineer at “SCI” Co.2024 (6mos)
- Mechatronics Engineering Internship, “Fartest” Biomedical Co. 2022 (2mos)
- Internship as a Machine Learning engineer,”SnowaTech”. 2022(3mos)

RELEVANT SKILLS

Skills	Details
Programming Languages	Python (NumPy, Pandas, OpenCV, PyTorch, TensorFlow), C++, MATLAB
AI & Data Science	Machine Learning (ML), Deep Learning (DL), Reinforcement Learning (RL), Computer Vision, Data Analysis
Sports Analytics & Game Theory	Game Strategy Modeling, Reinforcement Learning in Sports, Team Behavior Simulation, Performance & Tactics Analysis, Data-Driven Decision Making, Match Prediction, Strategy Optimization
Biomedical & Medical AI	Medical Image Processing (MRI, CT, Ultrasound), Biomedical Signal Processing (EEG, ECG), Clinical Data Analysis (EHR), Explainable AI (XAI)
Tools & Frameworks	Docker, Git, Linux (Ubuntu), Arduino.
3D Design & Simulation	Abaqus (FEA), CATIA, SolidWorks, Autodesk Inventor, MATLAB
Additional Skills	Research & Scientific Writing, Microsoft Office (Word, Excel, PowerPoint).

CERTIFICATES

- Supervised Machine Learning: Regression and Classification(Coursera)
- Python for Data Science and AI (Coursera)
- EF SET Certificate (English Certificate)

LANGUAGES

- English (Full professional proficiency)
- German(Limited working proficiency)
- Persian(Native)

REFERENCES

- Dr. Ali Fahim, Assistant Professor at University of Tehran.

✉ A.fahim@ut.ac.ir

- Dr. Hadi Amiri, Associate Professor at University of Tehran.

✉ Hadi.amiri@ut.ac.ir

- Dr. Ehsan Maani Miandoab, Assistant Professor at University of Tehran.

✉ e.maani@ut.ac.ir