MAZYAR TAGHAVI

GitHub ◇ Google Scholar ◇ arXiv◇ Research Gate
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EDUCATION

Two Masters' degree in: Mathematics and Engineering

1. **Iran University of Science and Technology (IUST)** *July 2025*
M.Sc. in Applied Mathematics (Optimization)
Ongoing - Cumulative GPA: 3.81 out of 4 - (17.7 out of 20 - class average:17.1)

Related courses: Advanced Linear Programming, Advanced Non-Linear Programming, Optimal Control and Calculus of Variations, Optimization in Neural Networks, Special Topics in Optimization, Advanced Real Analysis, and Network Optimization.

Thesis: Optimization in Deep Reinforcement Learning.

2. **Payame Noor University (PNU)** *April 2023*
M.Eng. in Computer Engineering (Artificial Intelligence and Robotics)
Ranked 1 out of 15 students in the graduating class

Related courses: Advanced Artificial Intelligence, Machine Learning, Artificial Neural Networks, Algorithms design, Special Topics in AI, Digital Speech Processing, Digital Signal Processing, Digital Image Processing, Evolutionary Computing.

Thesis title: Autonomous Medical Care for Space Travelers Using Deep Reinforcement Learning.

Bachelor of Science-English
Payame Noor University (PNU) *Feb 2021*

RESEARCH INTERESTS

Optimization: Optimal Control, Mathematical Modeling, Quantum Optimization
Machine Learning: Statistical ML, Reinforcement Learning, Deep Learning
AI and Robotics: Robot Learning, Multi-agent System, Distributed AI.

SKILLS

Mathematical	Mathematical foundations of AI/ML, Statistics, OR
Programming	Python, MATLAB, Mathematica
Optimization	GAMS, Gurobi, CPLEX, SciPy, CVXPY, and Pyomo
Machine Learning	PyTorch, TensorFlow, keras
Robotics	Open CV, Open AI Gym, Brax, MuJoCo, SLAM, ROS
Research Report	LaTeX

WORK EXPERIENCE

Research internship (certified) 2021 - 2023
Supervisor: Prof. Nezam Mahdavi_Amiri - Sharif University of Technology
Organization: Iranian Operations Research Society (IORS)

Field: Machine Learning and Optimization

TEACHING EXPERIENCE

Teaching assistant (certified) 2022 - 2023
Supervisor: Prof. Saeed Ayat
Organization: Payame Noor University

Courses: AI/ML, Python, LaTeX, research methods, English language

TEAM WORKING EXPERIENCE

Research Project: AI for people 2022 - 2023
Supervisor:Prof. Saeed Ayat
Organization: PNU Research Center

Field: Assist illiterate elderly individuals through AI-powered handwriting and voice recognition.
My role: Assessing the feasibility of utilizing quantum computing to achieve the project objectives.

Research Project: Modelling and solving a complex optimal control problem using Euler–Lagrange equation and Rayleigh–Ritz method. 2024
Supervisor:Prof. Morteza Garshasbi

Field: Optimal Control and Calculus of Variation
My role: Developing Python code.

ONLINE COURSES

Advanced Reinforcement Learning	*Udemy & Coursera*
Mathematics for Machine Learning and Data Science	*Coursera*
Probabilistic Graphical Models	*Coursera*
Linear Algebra	*Imperial College London*
Quantum Computing	*Coursera*

STANDARDIZED TESTS

TOEFL ibt 2024	*93*
GRE general June 2025	*pending*

PUBLICATIONS

1- (preprint) Quantum Optimization in Multi-agent Reinforcement Learning within Continuous Action Space

2- Autonomous Medical Care for Space Travelers Using Deep Learning and Reinforcement Learning
Thesis for: Master of Engineering
DOI: 10.13140/RG.2.2.17189.51680 April 2023 Advisor: Professor Saeed Ayat

3- Safe, Reliable, and explainable Multi-Agent Reinforcement Learning: Optimal Control in Autonomous Robotics
arXiv:2408.03884

4- Using a Quantum Artificial Intelligence Technique in Deforestation Diagnostics
YMER Journal (ISSN NO-0044-0477) 23 (03(March 2024))

5- Aircraft's evaluation for purchasing decision-making using fuzzy MCDM
9th International Operation Research conference (IORC 2016)-Iran

6- A Model for Reliability Optimization of Series System
The 10th International Conference of Operations Research Society-Iran

7- Solving a Large-Scale Model by Dantzig–Wolfe Decomposition Algorithm
The 11th International Conference of Operations Research Society-Iran

8-Fighter aircrafts evaluation for purchasing decision making using Multi-Criteria Decision-Making
Conference on Optimization and Decision Making - University of Mazandaran, Babolsar-Iran

9- Quantum Calculus of Variations and Quantum Optimal Control
Academic seminar, IUST, 2023

10- Applying FMCDM in Prioritizing Effective Factors in portfolio selection strategy – Tehran stock exchange

11- Quantum-Assisted Optimization for Advanced 3-D Imaging with Deep Learning: A Case Study of Image-Based Cancer Diagnostics

12- Quantum Max-Cut Classifier, A Quantum Artificial Intelligence Technique; Application in Cancer Diagnosis

13- Application of unsupervised artificial neural network (ANN) self-organizing map (SOM) in identifying main car sales factors

ACADEMIC REFERENCES

Professor Javad Vahidi (He/him) Iran University of Science and Technology
The head of the Department of Computer Science
My thesis supervisor
email: jvahidi@iust.ac.ir

Professor Samaneh Mashhadi (She/her) Iran University of Science and Technology
The dean of the School of Mathematics
My scientific advisor
email: smashhadi@iust.ac.ir

Professor Saeed Ayat (He/him) Payame Noor University
The head of the Department of Computer Engineering
My thesis supervisor
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