

Danial Ramezani

Contact Information

Email: danialramezani988@gmail.com

Rasht, Iran

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Education

M.Sc. in Industrial Engineering – Systems Optimization

Kharazmi University

Iran-Tehran

2022-2024

- **Thesis:** Novel Approaches for Portfolio Optimization and Index Tracking Problems Under Cardinality Constraints.
- **GPA:** (18.91/20) – (3.88/4)

B.Sc. in Industrial Engineering

Iran University of Science and Technology

Iran-Tehran

2016-2021

- **Thesis:** A New User-Friendly Decision-Making Website for Multi-Criteria Decision-Making for Experts and Regular Users.
 - **GPA:** (15.97/20) – (3.28/4) Last Two Years: (17.41) – (3.65)
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Research Interests

- Operations Research
 - Optimization
 - Decision Making Under Uncertainty
 - Data Mining and Machine Learning
 - Data-Driven Decision Making
 - Supply Chain and Logistics
 - Healthcare
 - Heuristics and Soft Computing
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Publications

- **Ramezani, Danial.** “Data-Driven Team Selection in Fantasy Premier League Using Integer Programming and Predictive Modeling Approach.” *Operational Research* – Under Review. <https://doi.org/10.48550/arXiv.2505.02170>
 - **Ramezani, Danial; Abouei Ardakan, Mostafa; Dehghani Ahmadabad, Mohammadreza.** “A Novel Robust Mixed Integer Linear Programming Model for Index Tracking Problem Under No Rebalancing: Heuristic Optimization Approach.” *Soft Computing* – Under Review.
 - **Ramezani, Danial; Abouei Ardakan Mostafa.** “Fast-converging and extensive search strategies for evolutionary algorithms in large-scale portfolio optimization under cardinality constraint.” *Optimization and Engineering* – Under Review.
 - **Ramezani, Danial; Abouei Ardakan, Mostafa; Dehghani Ahmadabad, Mohammadreza.** “A Novel Mathematical Model and Heuristic for Tracking Tehran Stock Exchange (TSE) Index,” *Financial Research Journal* – Under Review (In Persian).
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Professional and Teaching Experiences

Research Assistant <ul style="list-style-type: none"> Assistant to <i>Dr. M. Abouei Ardakan</i>, researching optimization problems and co-reviewing manuscripts under supervision. 	Iran-Tehran 2022-Present
Teaching Assistant – Simulation and Modeling Course <ul style="list-style-type: none"> Assistant to <i>Dr. H. Izadbakhsh</i>, coding examples, teaching Python, and organizing projects. GitHub repository related to the course: https://github.com/danialramezani/Simulation-via-python 	Iran-Tehran 2023
Quality Control Engineer–Intern <ul style="list-style-type: none"> ZAM-ZAM corporations. 	Iran-Rasht 2021
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Languages	
<ul style="list-style-type: none"> English: Fluent (IELTS 7.5: Listening=8, Reading=7, Writing=7, Speaking= 7.5) 	2025
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Academic Projects and Theses	
<ul style="list-style-type: none"> Master’s Thesis: Novel fast-converging approaches for evolutionary algorithms are proposed and implemented on a Non-Dominated Sorting Genetic Algorithm (NSGA-II) for the portfolio optimization problem that can approximate better results compared to regular NSGA-II in a shorter time. In the second part, a novel, robust mixed-integer programming model and a new hybrid algorithm are proposed. This approach achieves a lower tracking error during the out-of-sample period compared to state-of-the-art formulations and outperforms commercial solvers. <i>Master’s Thesis, Dr. M. Abouei Ardakan, M. Dehghani Ahmadabad; 2024.</i> Blockchain in Agri-Food Supply Chains: Adoption, Opportunities, and Challenges. <i>Supply Chain and Logistics Course, Dr. A. H. Gholam Saryazdi; 2023.</i> Application of Clustering in Multi-Objective Pareto Fronts: Analyzing Solution Patterns Using K-Means and Fuzzy C-Means. <i>Data Mining: Applications and Algorithms Course, Dr. M. V. Sebt; 2023.</i> Coding and Analyzing an Optimization Model: The Mathematical model of the paper “Vehicle routing problems with drones considering time windows” is implemented in GAMS and analyzed for improvement and mistakes. <i>Integer Programming Course, Dr. A. Mozdgir; 2023.</i> Reliability Optimization with the Water Cycle Algorithm and Simulated Annealing. <i>Combinatorial Optimization Course, Dr. M. Abouei Ardakan; 2022.</i> Review of Mining Queuing System in Bitcoin’s Blockchain. <i>Queueing Theory Course, Dr. A. Mirzazadeh; 2022</i> A New User-Friendly Decision-Making Website for Experts and Regular Users: currently deployed at “de-decision” (Implemented in React JS, JavaScript). <i>Bachelor’s Thesis, Dr. A. Makui; 2021.</i> Designing the Industrial Unit for the Production of Jet Fan Tunnels. <i>Planning Industrial Units Course, Dr. M. S. Jabalameli; 2020.</i> Investigating the Effects of Inappropriate Use of Cell Phones on the Human Body: A review paper. <i>Ergonomics Course, Dr. R. Ghousi; 2020.</i> Comparison of Business Process Management Software (BPMS). <i>System Analysis Course, Dr. M. S. Pishvae; 2020.</i> Iran’s Economy: Analyzing GDP Growth, Infrastructure, Inflation, Population Dynamics, and Key Challenges. <i>Macroeconomics Course, Dr. S. Mirzamohammadi; 2019.</i> 	
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Self-Motivated Projects and Research	

- **Generating Data for Drug Response Dataset Using Variational Autoencoder (VAE):** A VAE is employed to generate new data for the Drug Classification dataset using PyTorch; 2025.
- **Decoding Risk Factors in Heart Failure Prediction: A Neural Network Approach with SHAP Analysis.** PyTorch; 2025.
- **Investigating the Impact of Optimizers on Deep Learning Performance for Heart Disease Prediction:** UCI Heart Disease Dataset; 2025.
- **Explaining CNN Decisions in Classifying Fashion Clothing:** FashionMNIST dataset; 2025.
- **Predicting Diabetes Using Neural Networks:** Pima Indians Diabetes dataset; 2025.
- **Application of Autoencoders in Image Processing:** Investigating how different autoencoders (denoising, compressing, generating, convolution) can be used for handwritten digit recognition using the MNIST dataset, Tensorflow; 2024.
- **Optimization Model for Pairs Trading:** A mathematical formulation for finding cointegrated pairs of long-short portfolios alongside their optimal weights; 2024.
- **Reinforcement Learning for Cryptocurrency Trading:** TensorFlow and Open AI gym; 2024.
- **A Machine Learning Framework for Technical Trading:** A Random Forest model is implemented on customized data (using pattern recognition, technical and economic indicators for features and custom target values) to predict whether a long or short trade will be successful or not (average score of 75%); 2024.
- **Ranking Web-Developing Programming Languages with MADM Methods:** Identifying the best web development programming languages for beginners; 2021.

Skills

- **Programming Skills**
Python, GAMS, JavaScript
- **Software and Libraries**
Pyomo, CXVPY, TensorFlow, PyTorch, LaTeX, SciPy, Scikit-learn, Statsmodels, SHAP, Microsoft Office, Weka, Minitab, React, Node.js
- **Other skills**
Academic Writing, Predictive Modeling, Critical Thinking, Independent Research, Problem-Solving, Feature Engineering, Analyzing Stock (Fundamental, Technical)

Related Certificates

- **Game Theory**-Stanford University **2022**

References Are Available Upon Request.