

# Danial Ramezani

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## Education

### M.Sc. in Industrial Engineering – Systems Optimization

Iran-Tehran  
2022-2024

Kharazmi University

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

### B.Sc. in Industrial Engineering

Iran-Tehran  
2016-2021

Iran University of Science and Technology

- **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
  - Scheduling
  - Heuristics and Soft Computing
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## Publications

- **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." *Under Review*.
  - **Ramezani, Danial;** Abouei Ardakan Mostafa. "Large-Scale Portfolio Optimization Problem Under Cardinality Constraint With Enhanced Multi-Objective Evolutionary Algorithms." *Under Review*.
  - **Ramezani, Danial.** "Data-Driven Team Selection in Fantasy Premier League Using Integer Programming and Predictive Modeling Approach." <https://doi.org/10.48550/arXiv.2505.02170>. *Under Review*.
  - **Ramezani, Danial;** Abouei Ardakan, Mostafa; Dehghani Ahmadabad, Mohammadreza. "Stable and Cost-Effective Tracking of the Tehran Stock Exchange Index Using Robust Optimization and a Heuristic Algorithm." *Under Review*.
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## Professional and Teaching Experiences

### Research Assistant

Iran-Tehran  
2023-2025

- Assistant to *Dr. M. Abouei Ardakan*: preparing drafts and cover letters, managing submissions and editor contact, and co-reviewing research papers under supervision.

### Teaching Assistant – Simulation and Modeling Course

Iran-Tehran  
2023

- Assistant to *Dr. H. Izadbakhsh*, coding examples, teaching Python, and organizing projects. GitHub repository related to the course: <https://github.com/danialramezani/Simulation-via-python>

### Quality Control Engineer–Internship

Iran-Rasht  
2021

- ZAM-ZAM corporations.
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## Certificates

**IELTS: 7.5** (Listening=8, Reading=7, Writing=7, Speaking= 7.5)—Date: JAN 2025

Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning-DeepLearning.AI  
Game Theory-Stanford University, The University of British Columbia

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## Awards and Honors

- Ranked in the top 1% in the national entrance exam among 162,000 candidates

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## Skills

### Programming Skills

- Python, JavaScript, Julia, GAMS

### Software and Libraries

- Pyomo, CVXPY, TensorFlow, PyTorch, LaTeX, SciPy, Scikit-learn, Statsmodels, XGBoost, Numba, NumPy, Pandas, 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)

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## Academic Projects and Theses

- **Master's Thesis.** Fast-converging, generic mechanisms are proposed for enhancing evolutionary algorithms in portfolio optimization. Also, a new mathematical formulation and a hybrid algorithm are introduced for tracking indices. The model achieves a lower tracking error than state-of-the-art models, and the algorithm outperforms exact commercial solvers. *Master's Thesis, Dr. M. Abouei Ardakan, M. Dehghani Ahmadabad; 2024.*
- **Blockchain in Agri-Food Supply Chains: Adoption, Opportunities, and Challenges.** *Supply Chain and Logistics Course, Dr. A. H. Gholam Saryazdi; 2023.*
- **Application of Clustering in Multi-Objective Pareto Fronts Using K-Means and Fuzzy C-Means.** *Data Mining: Applications and Algorithms Course, Dr. M. V. Sebt; 2023.*
- **Analyzing and Improving the Optimization Model of "Vehicle Routing Problems with Drones Considering Time Windows" (GAMS).** *Integer Programming Course, Dr. A. Mozdgir; 2023.*
- **Reliability Optimization with the Water Cycle Algorithm and Simulated Annealing.** *Combinatorial Optimization Course, Dr. M. Abouei Ardakan; 2022.*
- **Reviewing Bitcoin Queuing System.** *Queueing Theory Course, Dr. A. Mirzazadeh; 2022*
- **A New User-Friendly Decision-Making Website for Experts and Regular Users.** Currently deployed at "[de-decision](#)" (React JS, JavaScript). *Bachelor's Thesis, Dr. A. Makui; 2021.*
- **Jet Fan Production Design.** *Planning Industrial Units Course, Dr. M. S. Jabalameli; 2020.*
- **Reviewing Phone Use Effects on the Human Body.** *Ergonomics Course, Dr. R. Ghousi; 2020.*
- **Comparison of Common BPMS.** *System Analysis Course, Dr. M. S. Pishvaei; 2020.*
- **Analysis of Iran's Economy.** *Macroeconomics Course, Dr. S. Mirzamohammadi; 2019.*

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## Self-Motivated Projects and Research

- **Generating Data for Drug Response Dataset Using Variational Autoencoder.** PyTorch; 2025.
- **Decoding Risk Factors in Heart Failure: An Explainable Approach.** PyTorch; 2025.
- **Investigating Optimizers' Impact on Deep Learning Models.** 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.** Exploring autoencoder variants (denoising, compressing, generating, convolution) for MNIST digit recognition, Tensorflow; 2024.
- **A Mathematical Formulation for Pairs Trading.** Assigning optimal long-short portfolios; 2024.
- **Reinforcement Learning for Cryptocurrency Trading.** TensorFlow and Open AI gym; 2024.
- **A Machine Learning Framework for Technical Trading.** A Random Forest model predicts long/short trade success using custom features, achieving ~75% accuracy; 2024.
- **Ranking Web Development Programming Languages Using MADM Methods;** 2021.

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