Motahareh Ghasempour

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GitHub Google Scholar LinkedIn

EDUCATION

Master of Science in Industrial Engineering, Systems Optimization — Fall 2023 – Fall 2025

- Tarbiat Modares University, Tehran, Iran — GPA: 17.13/20.00 (3.77 / 4)
- *Thesis:* Optimizing Assistance Location and Routing of Autonomous Vehicles under Disruptive Conditions: Machine Learning Approach (Defense date: December 2025), Supervisor: Dr. Hessameddin Zegordi

IBM Data Science Professional Certificate (10 courses) — Jan 2023 – Aug 2023

- What is Data Science? | Tools for Data Science | Data Science Methodology | Python for Data Science, AI & Development | Python Project for Data Science | Databases and SQL for Data Science with Python | Data Analysis with Python | Data Visualization with Python | Machine Learning with Python | Applied Data Science Capstone

Bachelor of Science in Industrial Engineering, — Fall 2018 – Spring 2022

- University of Science and Technology of Mazandaran, Iran — GPA: 17.91/20.00 (3.73 / 4)
- *Internship:* Pishro Polimer Tabarestan Company — Summer 2020
- *Capstone Project:* Application of ML and Data Science to Industrial Engineering, Supervisor: Dr. Mostafa Parsa, Grade: A (20/20) — Fall 2022

PUBLICATIONS

Working Paper

- Saadi, R., Ghasempour, M., Sadeghi, R., Rabbani, M., Sustainable E-Waste Management with the Internet of Things and Machine Learning: Integrating NSGA-II Algorithm, Target journal: *Journal of Cleaner Production*, Rank: A, IF: 10, (Ready to submit)
- Ghasempour, M., Zegordi, S.H., Deep Learning-Based Routing in a Bi-Level Stackelberg Model for Autonomous Vehicles under Disruption, Target journal: *Computers & Industrial Engineering*, Rank: A, IF: 6.5, (90%)
- Ghasempour, M., Sadeghi, R., Sadeghi, K., Energy-Efficient Traffic Flow Management for Autonomous Vehicles in Post-Accident Scenarios: Machine Learning Approach, Target journal: *Transportation Research Part E: Logistics and Transportation Review*, Rank: A*, IF: 8.8, (45%)

Conference Paper

- Ghasempour, M., Sadeghi, R., Hajian, A., (2024). A seasonal autoregressive integrated moving average (SARIMA) algorithm for blockchain-based smart grids, *55th Annual Conference of the DSI,* Phoenix, AZ, USA.

Research Interests

- Machine Learning, Data-Driven Decision-Making, Optimization, Stochastic Modeling, and Autonomous Systems

Research Tools

- Python (Numpy, Pyomo Optimization, Pandas, Scikit-learn), SQL, GAMS, Web Scraping, Machine Learning Methods (Supervised & Unsupervised Learning), and Excel

PROJECTS

- Using an uncertainty budget to develop a robust mathematical model for a reverse logistics network, **(Link)**
  Course: *Stochastic Programming,* Grade: A (19/20) — Fall 2025
- Solving the reverse logistics model with stochastic demand using the L-shape algorithm, **(Link)**
  Course: *Stochastic Programming,* Grade: A (19/20) — Fall 2025
- Estimate obesity levels using supervised learning with data from Mexico, Peru, and Colombia, based on eating habits and physical conditions, (**Link**)
  Course: *Data mining, models, algorithms and applications,* Grade: A (19.25/20) — Spring 2024
- Implement the Rank-One method with Golden Section and Bisection for step length selection and compare their performance on benchmark functions, (**Link**),
  Course: *Nonlinear Programming,* Grade: A (17.85/20) — Spring 2024
- A review of traffic queuing models at signalized intersections,
  Course: *Queuing theory,* Grade: A (17.60/20) — Spring 2024
- Prioritization of alternatives using the TOPSIS method with weights obtained through the Entropy method,
  Course: *Decision Analysis,* Grade: A (19/20) — Fall 2021
- Production planning and control and demand forecasting in Ab-band Industrial Group,
  Course: *Production Planning,* Grade: A (20/20) — Fall 2021

- Time process analysis of home-oven production in Bardena701 Company,
  Course: *Cycle Time Analysis,* Grade: A (20/20) Fall 2019

ACADEMIC EXPERIENCE

Remote Research Assistant, NC A&T State University,

- Supervisor: Dr. J.Kiarash Sadeghi, Fall 2025 - present

Result: Ghasempour, M., Sadeghi, R., Sadeghi, K., Energy-Efficient Traffic Flow Management for Autonomous Vehicles in Post-Accident Scenarios: Machine Learning Approach, Target journal: *Transportation Research Part E: Logistics and Transportation Review*, Rank: A*, IF: 8.8, (45%)

Research Assistant, Tarbiat Modares University of Tehran

- Supervisor: Dr. Hessameddin Zegordi, Fall 2024 - present

Result: Ghasempour, M., Zegordi, SH., Deep Learning-Based Routing in a Bi-Level Stackelberg Model for Autonomous Vehicles under Disruption, Target journal: *Computers & Industrial Engineering*, Rank: A, IF: 6.5, (90%)

Teaching Assistant, Tarbiat Modares University of Tehran
Data mining, models, algorithms, and applications,

- Supervisor: Dr. Toktam Khatibi, Fall 2024
  Responsibility: Teaching Python programming to the graduate students, providing lectures and bootcamps for students to learn and utilize machine learning algorithms for predictive analysis, and addressing their questions and concerns about the final project of their class.

Teaching Assistant, University of Science and Technology of Mazandaran
Operations Research,

- Supervisor: Dr. Amir Noroozi (1984-2022), Spring 2021
  Responsibility: Teaching operations research techniques (Linear Programming, Integer Programming, etc.) to improve students' learning of optimization techniques, assisting with problem-solving office hours for students, helping them with their guidance on doing their coursework, and exam preparation.

TRAINING & ONLINE CERTIFICATE

- **Optimization with Python: Solve Operations Research Problems**, Udemy May 2024
- **Regression and Classification** course at University of Colorado Boulder, Coursera, (**Link**), Aug 2023

English Test

- **TOEFL iBT** - Overall: **91** Oct 2025
  Reading: 21 | Listening: 24 | Speaking: 22 | Writing: 24

HONOR & AWARDS

- Highest cumulative GPA (**ranked #2 in class**) among graduate students, Tarbiat Modares University Spring 2024
- Highest cumulative GPA (**ranked #1 in class**) among undergraduate students, University of Science and Technology of Mazandaran Fall 2021

References

- **Professor Hessameddin Zegordi**, Professor of Industrial & Systems Engineering, Tarbiat Modares University
Email: zegordi@modares.ac.ir
Google Scholar: https://scholar.google.com/citations?user=oLt50fQAAAAJ&hl=en
- **Dr. J.Kiarash Sadeghi**, Assistant Professor of of Business and Economics, NC A&T State University
Email: jsadeghi@ncat.edu
Google Scholar: https://scholar.google.com/citations?user=9SLJCcAAAAAJ&hl=en
- **Dr. Ehsan Nikbakhsh**, Assistant Professor of Industrial & Systems Engineering, Tarbiat Modares University
Email: nikbakhsh@modares.ac.ir
Google Scholar: https://scholar.google.com/citations?user=tbQBm30AAAAJ&hl=en
- **Dr. Toktam Khatibi**, Assistant Professor of Industrial & Systems Engineering, Tarbiat Modares University
Email: toktam.khatibi@modares.ac.ir
Google Scholar: https://scholar.google.com/citations?user=qmy_4oEAAAAJ&hl=en