

# MOSTAFA MOHAMMADI

Mostafa is a doctoral researcher in Infrastructure and Transportation Engineering at the Department of Civil, Structural, and Environmental Engineering of the University of Rome "La Sapienza" (QS ranking= 134). He holds her master's degree in Transport system engineering (110 cum laude) and Industrial engineering with honor (110 cum laude). His expertise lies mainly in operation research and its applications in city logistics and network design, supply chain management, smart cities, and mobility management. His current interests include last mile logistics, vehicle routing problems, machine learning, and combinatorial optimization problems. He has been involved in several national and international projects related to electric vehicle routing, recharging station location, and urban freight transportation and presented the research findings at international conferences and prestigious journals. He has also gained valuable teaching and mentoring skills by assisting professors and students in various courses related to programming, traffic system engineering, freight transport and logistics, and transport policy. He enjoys working with a diverse and collaborative team of researchers, professors, and students, and always eager to learn new skills and explore new challenges.

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## EDUCATION

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### Ph.D. Student in Infrastructures and Transportation engineering

The Sapienza University of Rome, QS ranking=134 [ 1 NOV 2021 – Current]

ROME (Italy)

**Website:** [https://phd.uniroma1.it/web/MOSTAFA-MOHAMMADI\\_nP1755962\\_IT.aspx](https://phd.uniroma1.it/web/MOSTAFA-MOHAMMADI_nP1755962_IT.aspx)

**Google Scholar:** <https://scholar.google.com/citations?user=JtSNFrwAAAAJ&hl=en>

### Master's Degree in Transportation System Engineering.

The Sapienza University of Rome, QS ranking=134 [ 25 Sep 2019 – 29 Jul 2021]

ROME (Italy)

**Final grade:** 110 e lode (with honer)

Erasmus student for 5 months, University of Zilina, Zilina, Slovakia.

Erasmus Internship at Multi-Objective Optimization at University of Jyväskylä, Finland for 5 months

Remote Researcher in in Smart and Sustainable Logistics at Tecnológico de Monterrey university

**Award:** Among 1% distinguished students at Sapienza university, Second Rank in the Department of Civil, Structural, and Environmental Engineering of the University of Rome in Erasmus competition.

### Master's Degree In Industrial Engineering

Mazandaran University of Science and Technology. [ Sep 2012 – Feb 2015 ]

**Final grade:** 16.16 out of 20

### Bachelor's Degree in Industrial Engineering

Shomal University [ Sep 2008 – 1 Sep 2012]

Final grade: 16.56 out of 20

**Award:** Third ranked among all graduated in bachelor's degree of industrial engineering in 2012 (5% of distinguished student)

## TEACHING AND WORKING EXPERIENCE

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### Teaching Assistant in Supply chain and Logistics

Sapienza University of Rome [ 1 Jan 2022 – Current]

- I am involved in explaining the core concepts and objectives of logistics, the importance and methods of forecasting, mathematical modeling in operations research, optimizing facility locations, supplier selection, warehouse management strategies, routing optimization and case studies on logistics systems like Pfizer and FedEx.

### Teaching Assistant in Traffic System Engineering

Sapienza University of Rome [ 1 NOV 2021 – Current]

- I am involved in integration of Intelligent Transportation Systems in traffic engineering, covering the theory, and applications, culminating in a practical student project that involves designing a system and analyzing data.

### Teaching Assistant in Programming for Transportation

Sapienza University of Rome [ 1 NOV 2021 – Current]

- I am involed to enable students to learn the basics of programming aimed at processing and analyzing data for applications related to the field of transport engineering. The programming course will be oriented to learn and apply the Matlab and Python language.

## Master Thesis Advisor

### Sapienza University of Rome [ 1 NOV 2021 – Current]

- Solving vehicle routing problem using Floating car data by using Transcad, Case study: Rome.
- Developing Online platform to optimize electric vehicle routing problem.
- Urban air mobility: A comprehensive Review of Components, Impact and Constraints.
- Optimization last mile delivery with respect to flexible time window using Amazon Data set.
- Two-Echelon Electric Vehicle Routing Problem with Battery Swap Stations on Real Network
- Industry 4.0 In Waste Management: An Integrated IoT-Based Approach For Facility Location

## Research Assistant in distribution and production optimization

### Smart and Sustainable Logistics Laboratory at Tecnológico de Monterrey [ 1 Jan 2021 – Current]

- Utilizing Artificial Intelligent in Designing a Sustainable Smart Waste Management System in China
- Designing an Effective, Sustainable, and IoT-based Waste Management System in The Context of Smart City (Seed Grant Program - Instituto Tecnológico de Estudios Superiores de Monterrey and University of Ottawa (Canada)

## Multi-Objective Optimization Internship

### University of Jyväskylä [ 1 Jan 2021 – 1 Aug 2021]

- Implementing IBEA metho in DESDEO software (Open-source software framework for interactive multi-objective optimization methods).

## Industrial Engineer in Aras Taban CO

### From Dec 2013 to Apr 2017, as an Industrial Engineer - Full Time (44 Hours a week)

### From Aug 2017 to Aug 2019, as an Industrial Engineer- Full Time (44 Hours a week)

- Investigating current inventory levels and supply chain processes to understand existing challenges, lead times, and costs associated with procurement, storage, and transportation of raw materials and finished products.
- Designing and implementing a JIT inventory strategy that focuses on maintaining minimal inventory levels, aligning material delivery with production needs, and reducing waste.
- Training the production, procurement, and logistics teams on JIT principles and providing personnel with instructions and practices.
- Continuously monitoring the supply chain and accurately collecting data to evaluate the performance and make needed adjustment in identified areas for improvement.
- Optimize the production process to maximize benefits and minimize costs by conducting thorough research on the product's sensitivity to temperature, humidity, and liquid flow.
- Using Design of Experiments (DOE) methodology to develop a comprehensive experimental plan to determine optimal production conditions and implementing the results accordingly.
- Analyzing the production process to identify the optimal location of machinery and equipment and adjusting plant layout designs that maximize efficiency and minimize material handling costs.

## PUBLICATIONS

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### **An Integrated Location and Routing Formulation for Cold Chain Logistics Network with Heterogeneous Customer Demand.**

Journal of Industrial Information Integration, CiteScore = 19.6 and Impact Factor=15.7 Q1

Golman Rahmanifar., **Mostafa Mohammadi.**, Mohammad Golabian, Ali Sherafat., Mostafa Hajiaghaei-Keshteli, Gaetano Fusco and Chiara Colombaroni, <https://doi.org/10.1016/J.JII.2024.100573>

### **Heuristic approaches to address vehicle routing problem in the lot-based waste management system**

Expert Systems with Applications- **CiteScore = 12.2 and Impact Factor=8.665, Q1**

Golman Rahmanifar., **Mostafa Mohammadi.**, Ali Sherafat., Mostafa Hajiaghaei-Keshteli, Gaetano Fusco and Chiara Colombaroni. (2023). Expert Systems with Applications, 220, 119708. <https://doi.org/10.1016/J.ESWA.2023.119708>

### **A dynamic approach for the multi-compartment vehicle routing problem in waste management**

Renewable and Sustainable Energy Reviews, **CiteScore = 26.3 and Impact Factor=15.9, Q1**

**Mostafa Mohammadi**, Golman Rahmanifar, Mostafa Hajiaghaei-Keshteli, Gaetano Fusco, Chiara Colombaroni, Ali Sherafat. (2023). <https://doi.org/10.1016/j.rser.2023.113526>

### **Industry 4.0 in Waste Management: An Integrated IoT-Based Approach for Facility Location and Green Vehicle Routing**

Journal of Industrial Information Integration, **CiteScore = 19.6 and Impact Factor=15.7, Q1**

**Mostafa Mohammadi**, Golman Rahmanifar, Mostafa Hajiaghaei-Keshteli, Gaetano Fusco, Chiara Colombaroni. (2023). <https://doi.org/10.1016/j.jii.2023.100535>

### **Designing a multi-period dynamic electric vehicle production-routing problem in a supply chain considering energy consumption,**

Journal of Cleaner Production, **CiteScore = 18.5 and Impact Factor=11.1, Q1**

Mostafa Hajiaghaei-Keshteli, Golman Rahmanifar, **Mostafa Mohammadi**, Fatemeh Gholian-Jouybari, Jiří Jaromír Klemeš, Sasan Zahmatkesh, Awais Bokhari, Gaetano Fusco, Chiara Colombaroni, <https://doi.org/10.1016/j.jclepro.2023.138471>

### **An allocation-routing optimization model for integrated solid waste management**

Expert Systems with Applications- **CiteScore = 12.2 and Impact Factor=8.665, Q1**

Omid Hashemi-Amiri., **Mostafa Mohammadi.**, Golman Rahmanifar, Mostafa Hajiaghaei-Keshteli., Gaetano Fusco, & Chiara Colombaroni (2023). An allocation-routing optimization model for integrated solid waste management. Expert Systems with Applications, 227, 120364.

<https://doi.org/10.1016/j.eswa.2023.120364>

### **A platform to optimize urban deliveries with e-vans Dealing with vehicles range and batteries recharge.**

Valentini Maria Pia, Filippo Carrese, Chiara Colombaroni, Conti Valentina, Corazza Matteo, Lelli Maria, **Mostafa Mohammadi**, Orchi Silvia, Fernando Ortenzi, Golman Rahmanifar, FIORE GIUSEPPE Tomasino, Gaetano Fusco. <https://doi.org/10.6093/1970-9870/9911>

### **A Time-Dependent Electric Vehicle Routing Problem with Recharging Stations**

Chiara Colombaroni, Gaetano Fusco, Mostafa Mohammadi, Golman Rahmanifar- 04f Poster

Transportation Research Board conference (TRB) (Washington, D.C.), Transportation Research Board conference (TRB) - ()

### **Makespan minimizing on multiple travel salesman problem with a learning effect of visiting time.**

WSEAS Transactions on Systems and Control Journal

Chiara Colombaroni, **Mostafa Mohammadi.**, Golman Rahmanifar. (2020). Makespan minimizing on multiple travel salesman problem with a learning effect of visiting time. WSEAS Transactions on Systems and Control, 15, 508–526.

<https://doi.org/10.37394/23203.2020.15.50>

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## **CONFERENCES AND SEMINARS**

### **Euro PhD School Data Science Meets Combinatorial Optimization (Bielefeld University-Germany, September 2023)**

- Gained insights into the complexities of combinatorial optimization problems by artificial intelligence, enhancing understanding of real-world problem-solving and algorithm applicability.

### **Summer school in MIT center of Zaragoza Logistics Center (Zaragoza Logistics Center-Spain, Jun 2022)**

- Gained insights into Transport network design, Urban Logistics, and the application of artificial Intelligence.

### **SIDT – Società Italiana Docenti di Trasporti (University of Geneva, Italy, 17 Jun 2022)**

- Having a presentation regarding A Simulation-Optimization Framework for EVRP with Charging Station

### **Non-Linear Multi objective Optimization (ONLINE-Jyvaskyla University of Finland, 1 Mar 2021)**

- Gained insight into Non-Linear Multi-Objective Optimization trends, Real-World Applications of NLMOO in engineering, finance, healthcare, logistics, etc.

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## **HONOURS AND AWARDS**

- Sapienza University Tutorship Award for Traffic system Engineering
- Sapienza University Tutorship Award for Programming in Transportation
- Sapienza University Tutorship Award for freight and logistics
- Sapienza University Tutorship Award for transport policy
- 1% distinguished students at Sapienza university (Master Degree)
- 5% distinguished students at Shomal University (Bachelor Degree)

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## **Technical Skills**

### **Programming and Scripting Languages:**

- **MATLAB:** Experienced in algorithm development and data visualization.
- **Python:** Proficient in using Python for data analysis, data visualization and machine learning

### **Traffic and Transportation Software:**

- **PTV VISUM:** Skilled in traffic modeling and simulation for urban traffic analysis.
- **TransCAD:** Knowledgeable in GIS-based transportation planning and traffic operations.

### **Geographic Information System (GIS):**

- **QGIS:** Competent in spatial analysis, mapping, and data management for geospatial projects.

### **Machine Learning:**

- Familiar with applying machine learning algorithms in Python for predictive modeling and data mining.

### **Statistical Analysis Tools:**

- **SPSS:** Proficient in advanced statistical analysis and data processing.
- **Minitab:** Experienced in statistical quality control and hypothesis testing.

### **Optimization and Analysis:**

- Optimization Packages in Python (Pyomo)
- GAMS