

Ali Shirzadeh

Operations and Information Management Department
Isenberg School of Management
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Education

Ph.D. in Industrial Engineering **Sep 2008 – Aug 2014**
Sharif University of Technology, Tehran, Iran
Dissertation: “*Project Scheduling subject to Nonrenewable Resources with Prescheduled Procurement*”,
Advisor: Dr. Shahram Shadrokh

M.Sc. in Industrial Engineering **Sep 2006 – Sep 2008**
Sharif University of Technology, Tehran, Iran
Dissertation: “*Customization of an Organizational Project Management Maturity Model for Construction Industry*”
Advisor: Dr. Alireza Haji

B.Sc. in Industrial Engineering **Sep 2002 – Sep 2006**
Sharif University of Technology, Tehran, Iran
Dissertation: “*Feasibility Study based on UNIDO method and Layout Design of the Production Plant of Water-based Air-conditioner Motors*”
Advisor: Prof. Mohammad Reza Safaieh

Academic Appointments

Lecturer **Sep 2022 – Present**
Operations and Information Management, Isenberg School of Management, University of Massachusetts Amherst, USA

Adjunct Lecturer **Sep 2021 – May 2022**
Supply Chain & Information Management Group, D’Amore-McKim School of Business, Northeastern University, USA

Adjunct Lecturer **Jan 2022 – May 2022**
Math & Science Division, Babson College, USA

Visiting Scholar **Oct 2021 – Sep 2022**
Supply Chain Management Group, College of Business, University of Rhode Island, USA

Visiting Scholar **Apr 2019 – Oct 2021**
*Department of Management Science and Information Systems, College of Management,
University of Massachusetts Boston, USA*

Assistant Professor **Jan 2015- Mar 2019**
Department of Industrial Engineering, Islamic Azad University, Tehran-Gharb Branch, Iran

Adjunct Assistant Professor **Jan 2014- Dec 2014**
Department of Industrial Engineering, Islamic Azad University, Tehran-Gharb Branch, Iran

Adjunct Professor **Jan 2013- Dec 2013**
Department of Industrial Engineering, Islamic Azad University, Shiraz Branch, Iran

Visiting Scholar **Jan 2012- Jun 2012**
*Edward P. Fitts Department of Industrial and Systems Engineering, North Carolina State
University, USA*

Research Assistant **Jan 2011- Jan 2012**
Department of Industrial Engineering, Sharif University of Technology, Iran

Teaching Assistant **Sep 2008- Jul 2010**
Department of Industrial Engineering, Sharif University of Technology, Iran

Teaching Experiences

Isenberg School of Management, University of Massachusetts Amherst

- Undergraduate Courses
 - **OIM240 Business Data Analysis (in-person and online)**
 - **OIM451 Project and Information Management (in-person and online)**
 - **OIM452 Business Processes & Enterprise Systems (in-person and online)**
 - **OIM454 Machine Learning in Business (in-person)**
- Graduate Course (MBA and MSBA programs)
 - **SCH-MGMT655 Data Mining in Business (in person)**

*Supply Chain & Information Management Group, D'Amore-McKim School of Business,
Northeastern University*

- Undergraduate Courses (in-person)
 - **Business Statistics**

Math & Science Division, Babson College

- Undergraduate Courses (in-person)
 - **Predictive Data Analytics**

Department of Industrial Engineering, Islamic Azad University, Tehran-Gharb Branch

- Undergraduate Courses (all in-person)
 - **Project Planning and Control**

- **Production Planning**
- **Probability Theory**
- Graduate Courses (all in-person)
 - **Queuing Theory**
 - **Scheduling**
 - **Graduate Seminar**

Department of Industrial Engineering, Islamic Azad University, Shiraz Branch

- Undergraduate Courses (all in-person)
 - **Project Planning and Control**
 - **Production Planning**
 - **Operations Research**

Department of Industrial Engineering, Sharif University of Technology

Teacher Assistant in:

- Undergraduate Courses (all in-person)
 - **Probability Theory**
- Graduate Courses (all in-person)
 - **Fuzzy Theory**
 - **Pricing and Revenue Management**

Service Activities

Isenberg School of Management, University of Massachusetts Amherst

- Team Advisor for SAP ERPsim Game North America 2023 (Fall 2022)
- Team Advisor for ERPsim Sustainability Challenge 2022 (Spring 2023)
- Team Advisor for Business Analytics Competition at Manhattan College 2023 (Spring 2023)
- SAP Faculty Coordinator (Summer 2023 to Present)
- Search Committee Member for Lecturer in Business Statistics (Fall 2023 to Spring 2024)
- Search Committee Member for Lecturer in Business Statistics (Fall 2024)
- Team Advisor for Business Analytics Competition at Manhattan University 2025 (Spring 2025)

Professional Experiences

Data Science Consultant

Jun 2019-Sep 2019

Polymershapes, Distribution and Manufacturing Company, Tyngsborough, MA, USA

- Advised on the application of data science to optimize engineering and manufacturing activities within a high mix, low volume manufacturing environment across the entire spectrum of product engineering to fulfillment.
- Collaborated in customization and implementation of a business intelligence solution in collaboration with process design engineers, business intelligence engineers and technical product manager.

Director of Data Science**Oct 2015-Feb 2019**

Modiran 21, Management Consulting Firm, Tehran, Iran

- Led, trained, and mentored teams of data scientists through end-to-end data science lifecycle projects, guiding them from business problem definition to model implementation, ensuring high standards of data quality, security, and privacy, and driving valuable insights.
- Directed cross-functional teams of data scientists and professionals, overseeing the application of optimization and machine learning methods to analyze clients' business processes, identify and eliminate non-value-added steps, reengineer processes, and enhance overall performance.

Director of Business Intelligence**Dec 2014 – Oct 2015**

Nilram Mana, ERP Provider, Tehran, Iran

- Collaborated with cross-functional technology development and implementation teams to design and implement a comprehensive Business Intelligence (BI) and visualization solution aligned with clients' needs.
- Consistently delivered presentations of key results to business leaders and stakeholders, ensuring effective communication and alignment on data-driven insights.

Senior Business Intelligence Analyst**Jul 2013 – Dec 2014**

Nomatec Software Group, Management Systems Provider, Tehran

- Collaborated with cross-functional technology development teams to define quantifiable performance metrics for businesses, build SQL report queries, identify visualization requirements, develop business intelligence dashboards, and seamlessly integrate data analytics into business solutions.

Business Insight Manager**Jul 2006 – Sep 2009**

Iran-Khodro Card Company, Management Systems Provider, Tehran, Iran

- Orchestrated cross-functional collaboration for a bespoke business analytics system, engaging with software development teams, stakeholders, and executives to develop and implement tailored software for 1000+ service providers, leveraging data science for strategic insights and streamlined decision-making processes.

Transformation Strategy Research Analyst**Feb 2009 – May 2009**

Yaas Arghavani Industrial Engineering Group, Management Consulting, Tehran, Iran

- Executed comprehensive benchmarking analysis on bank branch transformation patterns, identifying industry-leading practices and evaluating key performance indicators (KPIs) for strategic optimization.
- Leveraged findings to provide valuable insights aimed at enhancing branch transformation strategies, contributing to improved operational efficiency and customer experience.

Accolades

- **Isenberg Teaching with Digital Technology Award (DT Award)** recipient, 2025
- **Session Chair and Invited Keynote Speaker**, 838th International Conference on Science, Technology, Engineering and Management (ICSTEM), 16th-17th Jan, 2021 at Boston, USA

- Member of Iran's National Elites Foundation, 2015
- **Outstanding Ph.D. Graduate Award**, Sharif University of Technology, Industrial Engineering Department, 2014
- **Best Paper Award** in 9th International Industrial Engineering Conference, Jan 20th-21st, 2013, Tehran, Iran
- **Graduate Research Assistantship Award**, Sharif University of Technology, Industrial Engineering Department, 2011 and 2012
- **Ranked 1st** in Sharif University of Technology, Industrial Engineering Ph.D. program entrance exam, 2007
- **Ranked top 0.3%** among more than 4,000 countrywide participants of Sharif University of Technology, Industrial Engineering M.Sc. program entrance exam, 2006
- **Ranked top 0.6%** among around 4,000 countrywide participants of Sharif University of Technology, Industrial Engineering M.Sc. program, minor in Economic and Social Systems entrance exam, 2006
- **Ranked top 0.9%** among around 4,000 countrywide participants of Sharif University of Technology, Industrial Engineering M.Sc. program, minor in System and Productivity Administration, 2006
- **Ranked top 0.1%** among around 400,000 countrywide participants of national universities entrance exam for B.Sc. programs, 2002

Research Interests

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| ▪ Supply Chain Management | ▪ Marketing Strategy |
| ▪ Project Scheduling and Management | ▪ Product Pricing and Return |

Publications and Presentations¹

- **Shirzadeh, A.**, Elahi, E., Fathi, M., Khakifirooz, M., Ebrahimpour, M., “The Impact of Emerging Trends and Increased Supply Chain Costs on Retail Goods Returns: An Analytical Model for Optimizing Pricing and Refund Strategies”, Lecture Notes in Computer Science (LNCS), volume 15168, 2024.
- **Shirzadeh, A.**, Elahi, E., Fathi, M., Khakifirooz, M., Ebrahimpour, M., “The Impact of Emerging Trends and Increased Supply Chain Costs on Retail Goods Returns: An Analytical Model for Optimizing Pricing and Refund Strategies”, 15th International Conference on Computational Logistics: 'The Future of AI in Logistics (ICCL 2024), September 8th-10th, 2024
- **Shirzadeh, A.**, Elahi, E., “Impact of Increased Supply Chain Expenses on Retail Product Return Management”, POMS 2024 Annual Conference, April 25th-29th, 2024.
- **Shirzadeh, A.**, Elahi, E., “Impact of Increased Supply Chain Expenses on Retail Product Return Management”, Northeast Decision Science Institute (NEDSI) 2024 Conference, April 4th-6th, 2024.
- **Shirzadeh, A.**, Elahi, E., “Numerical Optimization of Price and Return Strategies for Retail Consumers Products”, SIAM Conference on Optimization (OP23), May 31st-June 3rd, 2023.
- **Shirzadeh, A.**, Elahi, E., “Retail Product Return Management under Increased Supply Chain Expenses”, Production and Operations Management Society Conference (POMS 2023), May 21st-25th, 2023.

¹ graduate student advisee names are marked by *

- **Shirzadeh, A.**, Elahi, E., Ebrahimpour, M., “Transformative Marketing and Operations Management to Impact Reverse Logistics Flows”, *Reverse Logistics Magazine*, Sep 2022.
- **Shirzadeh, A.**, Elahi, E., Ebrahimpour, M., “Product Salvage Values to Reform Return Management Strategies”, *Reverse Logistics Magazine*, Edition 119, May 2022.
- **Shirzadeh, A.**, Elahi, E., Fathi, M., Khakifirooz, M., “Profit and Social Impact of Return Leniency: a Numerical Study”, *Computers & Industrial Engineering*, Vol. 169, 2022, 108-149.
- **Shirzadeh, A.**, Elahi, E., Fathi, M., Khakifirooz, M., Ebrahimpour, M., “Impact of Transformative Marketing and Operations Management on Customers’ Behavior”, Production and Operations Management Society Conference (POMS 2022), Apr 21st-25th, 2022.
- **Shirzadeh, A.**, Elahi, E., “Product Return Management Strategies”, *Reverse Logistics Magazine*, Edition 117, Jan 2022.
- **Shirzadeh, A.**, Elahi, E., “An Investigation of the Benefit of Optimal Refund over the Full Refund Strategy in Retail Market, a Numerical Study”, *Cyrus Global Business Perspectives*, Vol. 6, No. 1, Dec. 2021.
- **Shirzadeh, A.**, Elahi, E., “Socially Optimal Retail Return Strategies under the Influence of Endowment Effect”, Production and Operations Management Society Lima Virtual Conference (POMS Lima 2021), Dec 2nd – 4th, 2021.
- **Shirzadeh, A.**, Elahi, E., “Investigating the Profit and Social Impact of Product Return Leniency”, INFORMS Annual Meeting, Oct 24th-27th, 2021.
- **Shirzadeh, A.**, Elahi, E., “An Investigation of the Benefit of Optimal Refund over the Full Refund Strategy in Retail Market, a Numerical Study”, CIK conference 2021, Oct 20th-22nd, 2021.
- **Shirzadeh, A.**, Elahi, E., “Product Information Strategies to Soothe E-Commerce Returns”, *Reverse Logistics Magazine*, Edition 114, 15(3), Jun 2021.
- **Shirzadeh, A.**, Elahi, E., “Investigation of the Impact of Loss Aversion on the Optimal Return Strategies”, Production and Operations Management Society 31st Annual Conference (POMS 2021), 30th Apr – 5th May 2021.
- **Shirzadeh, A.**, “Wisely Breaking the Industrial Dam”, *Small Business Today Magazine*, Feb-Mar 2021.
- **Shirzadeh, A.**, Elahi, E., “Impact of Information Provision on Optimal Return Strategies”, International Conference on Science, Technology, Engineering and Management (ICSTEM), Jan 16th-17th, 2021, Boston, USA.
- **Shirzadeh, A.**, Elahi, E., “Optimal Return Strategies under the Influence of Endowment Effect”, International Conference on Science, Technology, Engineering and Management (ICSTEM), Jan 16th-17th, 2021, Boston, USA.
- **Shirzadeh, A.**, Shadrokh, Sh., Khakifirooz, M., Fathi, M., Pardalos, P. M., “A hybrid Genetic and Lagrangian relaxation algorithm for Resource-Constrained Project Scheduling under Nonrenewable Resources”, *Applied Soft Computing*, vol. 94, Sep 2020, 106482.
- **Shirzadeh, A.**, “Explore Your Business Cube”, *Small Business Today Magazine (Online)*, Aug 2020.
- **Shirzadeh, A.**, “Resource Tardiness Weighted Cost Minimization in Project Scheduling”, *Advances in Operations Research*, Volume 2017 (2017), Article ID 1308704, 11 pages.
- Mirzaei, H.*, **Shirzadeh, A.**, Zeinalnezhad, M., “Vehicle Routing Robust Modeling subject to Simultaneous Pickups and Deliveries, Time Windows, and Labors Allocation”, 3rd International Conference on Industrial Engineering and Management, Dec 28th-29th, 2017, Tehran, Iran.
- Mirzaei, H.*, **Shirzadeh, A.**, Zeinalnezhad, M., “The Design of Hybrid Meta-heuristic for Vehicle Routing Problem with Consideration of Labors Cooperation”, 3rd International Conference on Industrial Engineering and Management, Dec 28th-29th, 2017, Tehran, Iran.

- **Shirzadeh, A.**, Yousefi Saleh, L.*, Amoozad Khalili, H., “Solving Project Scheduling Problem subject to Nonrenewable Resources with Prescheduled Procurement using Particle Swarm Optimization Algorithm”, 295th International Conferences on Engineering and Natural Sciences, Nov 26th-27th, 2017, Vienna, Austria
- Yousefi Saleh, L.*, **Shirzadeh, A.**, Amoozad Khalili, H., “Solving Project Scheduling Problem Subject to Nonrenewable Resources with Prescheduled Procurement using Metaheuristic Algorithm of Scatter Search”, 3rd International Conference on Industrial and Systems Engineering, Sep 13th-14th, 2017, Mashhad, Iran.
- **Shirzadeh, A.**, “Resource Tardiness Weighted Cost Minimization in Project Scheduling”, 11th International Industrial Engineering Conference, Jan 7th-8th, 2015, Tehran, Iran.
- **Shirzadeh, A.**, Shadrokh, Sh., “A Branch and Cut Algorithm for Resource Constrained Project Scheduling Problem subject to Nonrenewable Resources with Prescheduled Procurement”, *Arabian Journal for Science and Engineering*, 2014, doi. 10.1007/s13369-014-1319-9.
- **Shirzadeh, A.**, Shadrokh, Sh., Fathi, Y., “Branch and Bound Algorithms for Resource Constrained Project Scheduling Problem Subject to Nonrenewable Resources with Prescheduled Procurement”, *Mathematical Problems in Engineering*, Volume 2014 (2014), Article ID 634649, 15 pages.
- **Shirzadeh, A.**, Shadrokh, Sh., “Resource Constrained Project Scheduling Problem subject to Cumulative Resources”, *International Journal of Mining, Metallurgy & Mechanical Engineering (IJMMME)*, vol. 1 (1), 2013, pp. 38-47.
- **Shirzadeh, A.**, Shadrokh, Sh., “Branch and Cut Algorithm for Resource Constrained Project Scheduling Problem subject to Nonrenewable Resources with Pre-scheduled Procurement”, 6th International Conference of Iranian Operations Research Society, May 8th-9th, 2013, Tehran, Iran.
- **Shirzadeh, A.**, Shadrokh, Sh., “Minimal Delaying Alternatives Algorithm for Solving Resource Constrained Project Scheduling Problem subject to Nonrenewable Resources with Prescheduled Plan”, 9th International Industrial Engineering Conference, Jan 20th-21st, 2013, Tehran, Iran.
- Khalilzadeh, M., Kianfar, F., **Shirzadeh, A.**, Shadrokh, Sh., Ranjbar, M., “A Modified PSO Algorithm for Minimizing the Total Cost of Resources in MRCPSP”, *Mathematical Problems in Engineering*, Volume 2012 (2012), Article ID 365697, 18 pages.
- **Shirzadeh, A.**, Shadrokh, Sh., “Resource Constrained Project Scheduling Problem subject to Cumulative Resources, a Genetic Algorithm”, International Scientific Academy of Engineering and Technology (ISAET), Dec 29th-30th, 2012, Kuala Lumpur, Malaysia.
- **Shirzadeh, A.**, Shadrokh, Sh., “A Branch and Bound Algorithm for Resource Constrained Project Scheduling Problem subject to Cumulative Resources”, *International Journal of Industrial and Manufacturing Engineering*, vol. 6, no. 2, 2012, pp. 376-381.
- **Shirzadeh, A.**, Shadrokh, Sh., “Solving Resource Constrained Project Scheduling Problem subject to Nonrenewable Resources with Prescheduled Procurement”, 10th International Management Conference, Nov 29th, 2012, Tehran, Iran.
- **Shirzadeh, A.**, Shadrokh, Sh., “A Branch and Bound Algorithm for Resource Constrained Project Scheduling Problem subject to Cumulative Resources”, International Conference on Manufacturing Engineering (ICME), Feb 19th-21st, 2012, Kuala Lumpur, Malaysia.
- **Shirzadeh, A.**, Shadrokh, Sh., “Branch and Bound Algorithms for Resource Constrained Project Scheduling Problem subject to Cumulative Resources”, International Conference on Information Management, Innovation Management and Industrial Engineering, Nov 26th-27th, 2011, Shenzhen, China, vol. 1, pp. 147-152.

Professional Services

▪ Editorial Board Member

- *Frontiers in Artificial Intelligence*

▪ Reviewer

- *European Journal of Operational Research*
- *OMEGA*
- *Computers and Industrial Engineering*
- *Journal of Interactive Marketing*
- *Journal of Business Research*
- *International Journal of Production Economics*
- *Production Planning & Control*

Selected Reviews

- “*Handbook of Smart Energy Systems*”, Springer Nature, 2023.
- “*Large Scale Optimization in Supply Chain and Smart Manufacturing: Theory and Applications*”, Springer, 2019.

Graduate Theses Advised

- Eslami, A., “Using M/M/c/K Queuing System for Locating Temporary Distribution Facilities for Emergency Response”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Advisor

Mar 2018 to Jan 2019

- Salehi, P., “Reducing Production and Maintenance Operating Costs using an Integrated Production planning; Case study: Zarif Mosavar Production Group”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Advisor

Feb 2018 to Dec 2018

- Mostaghimi, M., “Simultaneous Optimization of Project Scheduling and Material Procurement Planning”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Advisor

Sep 2017 to Jan 2019

- Dehghani, S., “Vehicle Routing Problem subject to Simultaneous Pickups and Deliveries, aiming at Sustainable Development Goals (Case Study: Liquidity Management at Bank Branches)”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Co-Advisor

Mar 2017 to Sep 2018

- Mirzaei, H., “Robust Mathematical Modeling of a Vehicle Routing Problem subject to Simultaneous Pickups and Deliveries, Time Windows, and Labor Allocations”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Advisor

Feb 2017 to Sep 2017

- Dabaghi, M., “Performance Evaluation of Sustainable Supply Chain Management using DBSC”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Feb 2017 to Sep 2018

Co-Advisor
- Kosari, E., “Bi-Objective Crew Scheduling Model for Train Drivers, considering personnel satisfaction (Case Study: Iran Railway Company)”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Feb 2017 to Sep 2018

Co-Advisor
- Honari, Sh., “A Mathematical Model for Scheduling Oil, Gas, and Petrochemical Projects”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Dec 2016 to Sep 2017

Advisor
- Sadeghi, F., ‘Supplier Evaluation and Selection under a Combined MTS / MTO Supply Chain Strategy, considering the Order Penetration Point”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Dec 2016 to Sep 2017

Co-Advisor
- Amini, S., “A Model for Analyzing the Risks of Construction Projects”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Nov 2016 to Aug 2018

Advisor
- Dehghan, A., “*An Integrated Model of Supply Chain Relief Logistics and Metaheuristic Solution Algorithms*”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Aug 2016 to Sep 2017

Co-Advisor
- Aliakbar Khani, S., “Project Scheduling subject to Renewable and Nonrenewable Resources with Prescheduled Procurement, aimed at Minimization of Resource Tardiness Cost”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Aug 2016 to Feb 2017

Advisor
- Yousef Salehi, L., “Solving Project Scheduling Problem subject to Nonrenewable Resources with Prescheduled Procurement, using Heuristic and Metaheuristic Algorithms”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Aug 2016 to Feb 2017

Advisor
- Hatefi, N., “New MIP Mathematical Model for Closed-Loop Supply Chain Optimization and Supplier Selection”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Aug 2016 to Feb 2017

Advisor

- Hajaghaei, S.M., “Production Planning Model for Deteriorating Items in Supply Chain and Vibration Damping Optimization Algorithm”, M.Sc. Thesis, Industrial Engineering Department, Islamic Azad University, Tehran-Gharb Branch, Tehran, Iran.

Advisor

Aug 2016 to Feb 2017

Society Memberships/Registrations

- The International Society of Global Optimization (iSoGO)
- Institute of Industrial and Systems Engineers (IISE)
- Society for Industrial and Applied Mathematics (SIAM)
- Institute for Operations Research and the Management Sciences (INFORMS)
- Project Management Institute (PMI)
- Association for Supply Chain Management
- Society of production and operations management
- Reverse logistics association (RLA)