Marzieh Soltanolkottabi

+1 (206) 474 7636
msoltan@newhaven.edu
www.msoltan.com

Academic Appointments

Aug 2021 – Present **Assistant Professor of Industrial and Systems Engineering**, *University of New Haven*.

Sep 2019 – Aug 2021 **Visiting Assistant Professor of Industrial and Systems Engineering**, *University of New Haven*.

Education

2015 – 2019 GPA:4.0/4.0 **Ph.D. Industrial Engineering**, *Kansas State University*, United States.
- Dissertation topic: Modeling Social Response to Disease Spread using Spatial Game Theory

2008–2011 GPA:4.0/4.0 **M.S. Socio-Economic Systems Engineering**, *Isfahan University of Technology*, Iran.
- Dissertation topic: Capacity Planning in Hospital Operating Rooms Using Data Envelopment Analysis (DEA)

2004–2008 GPA:4.0/4.0 **B.S. Industrial Engineering**, *Isfahan University of Technology*, Iran.

Research Interests

- Machine learning modeling of processes in networks
- Game Theoretic models of socio-economic systems
- Mathematical modeling of complex adaptive systems
- Applications of operations research in healthcare

Research Experience

2015–2019 **Research Assistant**, *Department of Industrial and Manufacturing Systems Engineering*, Kansas State University.
- Modeled the behavioral response of individuals to vaccination when facing an epidemic outbreak in spatial configurations using game theory techniques (programmed in Python).
- Modeled social interactions of populations in networks in response to epidemic outbreaks to help public health policy makers setting more efficient strategies (programmed in Python).
- Modeled the behavior of individuals with dishonest signalling and information sharing behavior (programmed in Python).

2008–2011 **M.S. Research**, *Department of Industrial Engineering*, Isfahan University of Technology.
- Evaluated efficiency of resource allocation in hospital operating rooms using Data Envelopment Analysis-DEA (programmed in GAMS).
- Designed a mathematical model for capacity planning in hospital operating rooms using Centralized Data Envelopment Analysis-CDEA (programmed in GAMS).

Teaching and Advising Experience

Graduate Advisement

May 2020 – Present **M.S. Advisor**, University of New Haven, *Project:* Emergency Facility location problem with prioritized demand groups.

Classroom Teaching

Spring '21 **Instructor**, University of New Haven, Applied Engineering Statistics.

Spring '21 **Instructor**, University of New Haven, Methods of Engineering Analysis.

Spring '21 **Instructor**, University of New Haven, Reliability and Maintainability.

Fall '20 - Fall '21 **Instructor**, University of New Haven, Optimization and Applications.

Fall '19 - Fall '21 **Instructor**, University of New Haven, Decision Making Under Uncertainty.

Fall '19 - Fall '21 **Instructor**, University of New Haven, Applied Statistics for Quality and Engineering Management/Descriptive and Inferential Statistics.

Fall '19 - Spring '20 **Instructor**, University of New Haven, Introduction to Operations Research/Management science.

2018 **Instructor**, Kansas State University, Production Planning and Inventory Control.

2014–2015 **Instructor**, Payam-e-Noor University, Technical and Economic Evaluation of Projects.

2014–2015 **Instructor**, Payam-e-Noor University, Risk Management.

Graduate Teaching Assistant

Spring '17, '18 & '19 **Principles of Manufacturing Information Systems**, Kansas State University.

Fall '15 & Fall '17 **Production Planning and Inventory Control**, Kansas State University.

Fall '16 **Introduction to Industrial Engineering**, Kansas State University.

Spring '16 **Engineering Economic Analysis**, Kansas State University.

Fall '15 **Advanced Industrial Management**, Kansas State University.

Publications

[1] **M. Soltanolkottabi**, D. Ben-Arieh, C.H. Wu, Modeling the Behavior of Interacting Populations in Response to an Epidemic Using Evolutionary Spatial Games, *International Journal of Production Research (Under review).*

[2] **M. Soltanolkottabi**, D. Ben-Arieh, C.H. Wu, Modeling the Containment Behavior of Interacting Populations in Response to an Epidemic, *Institute of Industrial and Systems Engineering (IISE) Annual Conference, 2021.*

[3] M. Kazemi, **M. Soltanolkottabi**, Emergency Facility Location Problem with Prioritized Demand Groups, *Institute of Industrial and Systems Engineering (IISE) Annual Conference, 2021.*

[4] **M. Soltanolkottabi**, D. Ben-Arieh, C.H. Wu, Game Theoretic Modeling of Infectious Disease Transmission with Delayed Emergence of Symptoms, *Games, 11(2), p.20., 2020.*

[5] **M. Soltanolkottabi**, Modeling social response to disease spread using spatial game theory, *Doctoral Dissertation, 2019.*

[6] **M. Soltanolkottabi**, D. Ben-Arieh, C.H. Wu, Modeling Behavioral Response to Vaccination Using Public Goods Game, *IEEE Transactions on Computational Social Systems, 6(2), pp.268-276, 2019.*

[7] **M. Soltanolkottabi**, D. Ben-Arieh, C.H. Wu, Spatial Competitive Games with Disingenuously Delayed Positions, *Journal of Dynamics and Games, pp.383-394, 2019.*

[8] **M. Soltanolkottabi**, D. Ben-Arieh, C.H. Wu, Spatial Games with Probabilistic Payoff Functions, *24th International Conference on Production Research, Poznan Poland, 2017.*

[9] **M. Soltanolkottabi**, D. Ben-Arieh, Spatial Games with Selective Dishonesty and Foresight of Players, *IISE Annual Conference and Expo, Aneheim California, 2016.*

[10] S. Ketabi, H. Ganji, S. Shahin, M. Mahnam, **M. Soltanolkottabi**, S.A. Hadian Zarkesh Moghadam, Surgical services efficiency by data envelopment analysis, *Benchmarking: An International Journal, Vol. 22 Iss: 6, pp.978–993, 2015.*

[11] M. Maadi, **M. Soltanolkottabi**, Extension of PROMETHEE Method for Solving Multi-Objective Optimization Problems, *International Journal of Computer Applications 89(11), 2014.*

[12] H.A. Khorshidi, **M. Soltanolkottabi**, Hegelian Philosophy and System Dynamics, *Proc. 28th International Conference of the System Dynamics Society 2010.*

Peer-Reviewed Abstracts and Presentations

[1] **M. Soltanolkottabi,** D. Ben-Arieh, Modeling the Containment Behavior of Interacting Populations in Response to an Epidemic, *Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting, 2018*.

[2] **M. Soltanolkottabi,** D. Ben-Arieh, C.H. Wu, Modeling Behavioral Response to Vaccination Using Public Goods Game, *Institute of Industrial and Systems Engineering (IISE) Annual Conference, 2018*.

[3] **M. Soltanolkottabi,** S. Ketabi, Capacity Planning in Operating Rooms By Means Of Centralized Data Envelopment Analysis: Case Study of Alzahra Hospital in Isfahan-Iran, *Operational Research Applied to Health Services (ORAHS) Conference, 2013*.

[4] E. Teymouri, **M. Soltanolkottabi**, S. Ketabi, Emergency Rooms Performance Evaluation Using Data Envelopment Analysis: Case Study of Isfahan-Iran, *6th International Conference of Iranian Operations Research Society, 2013*.

[5] **M. Soltanolkottabi,** S. Ketabi, Capacity Planning in Operating Rooms Using Centralized Data Envelopment Analysis, *5th International Conference of Iranian Operations Research Society, 2012*.

In the Media

2/2/2020 **Coronavirus: Can AI (Artificial Intelligence) Make A Difference?**.
https://www.forbes.com/sites/tomtaulli/2020/02/02/coronavirus-can-ai-artificial-intelligence-make-a-difference/#8cde0c258172

2/7/2020 **Coronavirus - Artificial Intelligence (AI) is helping and making the difference**.
https://thinkml.ai/coronavirus-ai-is-making-the-difference/

2/10/2020 **University of New Haven Professors' Analysis of Coronavirus Goes Far Beyond Public Health**.
https://www.newhaven.edu/news/blog/2020/coronavirus-analysis.php

3/30/2020 **Humanoid Podcast - AI and Social Distancing (In Farsi)**.

Computer Skills

Expert	Python, PHP, Oracle PL/SQL, MySQL, HTML, Matlab, CPLEX, Octave, GAMS
Intermediate	Java, C#, SAS, Minitab, R
Novice	MS Project, iThink, Gephi, Weka

Work Experience

2011–2014 **Systems Analyst**, *International Systems Engineering and Automation Company (IRISA)*, Isfahan, Iran.

- Designed a mathematical model for automatic assignment of orders to products on a weekly bases for Mobarakeh Steel Company to improve the existing heuristic model (programmed in GAMS).
- Designed a meta-heuristic model to optimize and automate hot strip mill production scheduling in Mobarakeh Steel Company, resulted in reducing the number of rollers used for production (programmed in Java using an Oracle database).

.

- Designed and implemented the statistical process control module in a statistical process control software for cold rolling mill (programmed in SAS).
- Improved the existing Oracle-based algorithm and database for spare part inventory control in Mobarakeh Steel Company, resulting in a shorter running time for the algorithm.

Summer 2008 **Internship**, *Azar Jam Espadan Co.*, Isfahan, Iran.

- Researched on Customer Relationship Management (CRM) systems.
- Researched on data mining techniques for CRM applications.

Service

2015–present **Reviewer**, IISE Annual Conference.

Achievements

Spring 2019 Graduate Research Poster Award, Kansas State University

Fall 2018 College of engineering travel award, Kansas State University

Spring 2018 Best Graduate Research Poster Award, Kansas State University

Spring 2018 Graduate travel award, Kansas State University

Summer 2017 Graduate Research Fellowship, Kansas State University

Summer 2016 Graduate Research Fellowship, Kansas State University

Spring 2016 Departmental travel award, Kansas State University

Fall 2008 Direct admission to graduate program at the Dept. of Industrial Engineering, Isfahan University of Technology

Summer 2008 German Academic Exchange Fellowship (DAAD), Earthquake-Safe Schools and Housing Summer School, Bergische Universtat Wuppertal, Germany

Spring 2008 Ranked 2nd in class of 2004 at the Industrial Engineering dept., Isfahan University of Technology

Memberships

2015–Present **Member of Institute of Industrial and Systems Engineers (IISE)**.

2018–2019 **Member of Institute for Operations Research and the Management Sciences (INFORMS)**.

2018–2019 **Elected Member of The Graduate Student Committee**, Department of Industrial and Manufacturing Systems Engineering, Kansas State University.

2010–2015 **Member of Iranian Operations Research Society**.

2005–2008 **Member of the Editorial Board – Industrial Engineering Magazine (Behbood)**, Department of Industrial Engineering, Isfahan University of Technology.