

Sobhi Mejjaouli, Phd
Vice Dean for Academic and Student Affairs,
MEM (Master of Engineering and Systems Management)
Program Director,
Assistant Professor of Industrial Engineering
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QUALIFICATIONS:

- Major research areas: Sustainability, Supply Chain Engineering and Management, Manufacturing, Transportation Systems, and Applications of RFID and Sensor Networks.
- Linear programming (simplex, streamlined simplex method for the transportation and assignment problems, etc), Non-linear programming (one variable and multivariable unconstrained optimization, quadratic and separable programming, convex programming using Frank Wolfe and SUMT), Dynamic programming and its applications (Production and inventory control, Equipment replacement, Equipment reliability...etc), Network Programming (shortest path problem and its extensions, maximum value flow problem, minimum cost flow problem...etc), Metaheuristics (Simulated Annealing, Tabu search and genetic algorithms), Integer programming and Mixed Integer Programming
- Proficiency in Modeling and simulation utilizing state-of-the-art computer based software tools (SysML, ARENA).
- Proficiency in using LINGO and CPLEX.
- Algorithm design and implementation using C/C++, MATLAB and CPLEX.
- Strong background in Engineering Economics and cost analysis tools.

EDUCATION:

- **Doctor of Philosophy, Systems Engineering (4.00 out of 4.00 GPA), August 2012-December 2015**, University of Arkansas at Little Rock, Little Rock, Arkansas, USA.
Dissertation: *The use of RFID and Sensor Networks to optimize enterprise operations and logistics.*
- **Master and Bachelor of Science, Industrial Engineering, 2006 - 2011**, University of Tunis ElManar, National School of Engineers of Tunis. Master's Dissertation (Under a Research Assistantship from University of Minnesota): *Supply Chain Management and Sustainability.*

Teaching Experience:

Fall 2016 – Present, Alfaisal University, Riyadh, KSA

Graduate level:

- Operations Engineering and Management
- Deterministic Management Science
- Decision & Risk Analysis for Engineers & Systems Managers
- Advanced Engineering Economics & Cost Analysis

Undergraduate Level:

- Operations Research I
- Operations Research II
- Production and Service Systems Planning I
- Engineering Economy and Cost Analysis
- Production Information Systems
- Simulation

Scholarships and awards

- Service Award, College of Engineering, Spring 2017
- Teaching award, College of Engineering, Spring 2021
- Fall 20-present, Boeing Competition and Design Expo judge
- Spring 2017-present, Alfaisal University Poster competition judging group leader
- Session chair 3rd International Conference on Industrial Engineering and Industrial Management (IEIM 2022), Barcelona Spain 12-14th, 2022
- THIRD Place of the Poster Competition, The Fourth European Conference on Industrial Engineering and Operations Management Rome, Italy, August 2-5, 2021. Award is presented to Abdulaziz Alsalamah, Abdullah Alnooh, Nawaf Als Salman, Abdulaziz Alhammadi and Sobhi Mejjaoui Department of Industrial Engineering, College Engineering, Alfaisal University, Riyadh, Saudi Arabia
Paper title: "Improving the Packaging Unit at AEC".

Research Grants:

- PI, Grant Number KSRG -2023-080, King Salman Center for Disability Research, Project Title: Friends for Humanity, (2023), SR170,000
- PI, IRG Grant 18207, Project Title: Life cycle cost optimization for energy retrofitting strategies in Residential buildings, Alfaisal University (2018), SR50,000
- PI, Boeing Grant 324129, Project Title: Development of Decision Support Tools in the Area of Airport/Carrier Operations (2019), \$50000=SR187500
- PI, IRG2020, Project Title: Retrofitting Commercial Buildings: a Framework (2020), SR32000
- PI, IRG Grant 20204, Project Title: Building Retrofitting Framework, Alfaisal University (2021), SR50,000

- CO-PI, IRG Grant 22207, Project title: Multi-objective optimization of ambient oxygen content, safety shoes type and lifting frequency for workers lifting capabilities and physiological responses. Alfaisal University (2022), SR32000
- CO-PI, IRG Grant 22208, Project title: Physics Based Modelling of Martenstic Steels For Sustainable Power Generation, Alfaisal University (2022), SR50,000

- **GRADUATE Theses SUPERVISION**

Main Advisor the following theses, Alfaisal University, Master of Engineering and Systems Management:

- Joud Alfayez, Ahp And Integer-Programming Based Framework For Cube Sat Design Optimization, defended Fall 2022
- Sanabel, Supply Chain Decision Making Under Different Carbon Policies, defended Fall 2021
- Hanin Baljoun, Improving Quality Of Life: The Development Of An Analytical Hierarchy Process Ahp Based Decision Support System To Facilitate The Housing Development Projects Selection Process, defended Spring 2020
- Luluwa Bin-Saedan, Prioritising Customers' Housing Requirements In Saudi Arabia With Qfd Method, defended Fall 2019
- Aeshah Ahmed Al-Shalaan, Implementation Of Lean Six Sigma For Improvement Of Blood Bank Management, defended Spring 2018
- Maha Alzahrani, Decision-Making Model For Optimum Energy Retrofitting Strategies in Residential Buildings, defended Spring 2018
- Rahaf Albathi, Development Of Decision Support System For Logistics Service Providers, defended Fall 2018
- Feras Loufi, Improving Aircraft Electrical Maintenance Using Six Sigma, defended Fall 2019

- Sarah Algublan, Optimizing The Process Of Packaging Production By Eliminating Duplex Gluing Defect Using Six Sigma, defended Fall 2018

Co-Advised the following Theses, Alfaisal University, Master of Engineering and Systems Management:

- Bashayer Alfawaz, Improved Decision Support System For Personal Loan Eligibility Using Artificial Neural Networks, defended Spring 2022;
- Norah Alsahly, Covid-19 Vaccine Sentiment Analysis For Arabic Tweets Using Machine Learning Algorithms, defended Spring 2022;
- Malek Almobarak, Water Budget Control Framework Using DMAIC Approach For Commercial Buildings, defended Spring 2020;
- Tarek Alissa, Saudi Arabian Female Automobile Purchasing Decision Model Using Ahp Approach, defended Spring 2020;
- Bedour Khaled Alsowailem, An Automated Quality Framework In The Financial Services, defended Spring 2018;
- Ahlam Alnafiei, Perovskite Solar Cell Efficiency Optimisation Using Neural Networks, defended Fall 2018;

Committees:

Sep 2017-Sep 2022, Member, College of Engineering Research and Graduate studies committee

January 2017-present, Member, Industrial Engineering Department Search and Hiring Committee

Jan 2022-present, Member, Laboratory Policy and Structure Committee

Jan 2017-present, Member, Quality Assurance and Accreditation Committee

Councils:

2016-Present, Member, Industrial Engineering Department Council

Sep 2021-Present, Member, College of Engineering Council

January 2017-Sep 2022, Member, University Research and Graduate Council

Sep 2022-present, Member, University Curriculum Committee

Sep 2022-present, member, University Academic Development Committee

University and community service:

January 2017-Sep 2022, University Research and Graduate Council

Sep 2022-present, University Curriculum Committee

Jan 2022-present, Laboratory Policy and Structure Committee

Sep 2022-present, University Academic Development Committee

Employment:

- Jul 2023 – Sep 2023, Dean (Acting Dean during Summer), College of Engineering, Alfaisal University, Saudi Arabia

- Sep 2022 – present, Vice Dean, Academic and Student Affairs, College of Engineering, Alfaisal University, Saudi Arabia

- Jul 2022 – Sep 2022, Dean (Acting Dean during Summer), College of Engineering, Alfaisal University, Saudi Arabia

- Sep 2021 – Sep 2022, Associate Dean, Research and Graduate Studies, College of Engineering, Alfaisal University, Saudi Arabia

- Jan 2017 – present, MEM (Master in Engineering and Systems Management) Program Director,

Industrial Engineering Program, Alfaisal University, Saudi Arabia

- Oct 2016 – present, Assistant Professor, Industrial Engineering Program, Alfaisal University, Saudi Arabia

-Aug 2012-Jan 2016, Research Assistant, Donaghey College of Science, Technology, Engineering, and Mathematics, University of Arkansas at Little Rock, USA

-Aug 2012-Jan 2016, Teaching Assistant, Donaghey College of Science, Technology, Engineering, and Mathematics, University of Arkansas at Little Rock, USA

- Sep 2011-July 2012, Manufacturing Quality Engineer, Johnson Controls, Tunisia

Published Work:

Journal Papers:

1. ***S. Mejjouli, S. Alnourani, M. Almobarek and S. Guizani, Optimization Approaches for the Optimal Placement of Electrical Charging Stations, 2023, Intelligent Automation & Soft Computing (accepted for publication), DOI: 10.32604/iasc.2023.038523***
2. ***Sobhi Mejjouli & Lotfi Tadj (2023) Optimal pricing in ride-share platforms, Cogent Engineering, 10:1, DOI: 10.1080/23311916.2023.2230710***

3. **Mejjaouli, S.;** Tadj, L. *Internet Digital Content Pricing and Subscribers Control*, *Operations Research and Decisions Journal* (accepted for publication)
4. **Mejjaouli, S.;** Guizani, S. *PDF Malware Detection Based on Fuzzy Unordered Rule Induction Algorithm (FURIA)*. *Appl. Sci.* 2023, 13, 3980.
<https://doi.org/10.3390/app13063980>
5. Ali S. Allahloh, Mohammad Sarfraz, Atef M. Ghaleb, **Sobhi Mejjaouli**, "IIoT-Based Intelligent Process Control for Crude Oil Separation: Investigating the Impact of Model-Based Control and Genetic Algorithms", *Journal of Sensors*, vol. 2023, Article ID 1909835, 20 pages, 2023. <https://doi.org/10.1155/2023/1909835>
6. Amrani, M.A., Haddad, Y., Abdulhameed, M., Hyder, O.S., Saif, A., Ghaleb, A.M., **Mejjaouli, S.** (2022). A Lubricating Oil-Based Maintenance for Diesel Engines at the End-user: An Effective Predictive Approach. *JJMIE*, 16(5), 689-700
7. Amrani MA, Haddad Y, Obeidat F, Ghaleb AM, **Mejjaouli S**, Rahoma I, Galil MSA, Shameeri M, Alsofi AA, Saif A. Productive and Sustainable H2 Production from Waste Aluminum Using Copper Oxides-Based Graphene Nanocatalysts: A Techno-Economic Analysis. *Sustainability*. 2022; 14(22):15256.
<https://doi.org/10.3390/su142215256>
8. Almobarek M, Mendibil K, Alrashdan A, **Mejjaouli S**. Fault Types and Frequencies in Predictive Maintenance 4.0 for Chilled Water System at Commercial Buildings: An Industry Survey. *Buildings*. 2022; 12(11):1995.
<https://doi.org/10.3390/buildings12111995>
9. **Mejjaouli, S.** (2022). Internet of Things based Decision Support System for Green Logistics. *Sustainability*, 14(22), 14756. <https://doi.org/10.3390/su142214756>
10. **Mejjaouli, S.** (2022). RFID-WSN-GPS-Based Cold Supply Chain Real-Time Monitoring and Control System. *Arabian Journal for Science and Engineering*, 1-15.
<https://doi.org/10.1007/s13369-022-07047-2>
11. **Mejjaouli, S.** Toward ZEB: A Mathematical Programing-, Simulation-, and AHP-Based Comprehensive Framework for Building Retrofitting. *Appl. Sci.* 2022, 12, 2241. <https://doi.org/10.3390/app12042241>
12. Joud A. Alfayez and **Sobhi Mejjaouli**, "3 Unit Cube-Sat Mass Reduction Using Topology Optimization," *International Journal of Engineering and Technology* vol. 13, no. 2, pp. 19-23, 2021.

13. **Sobhi Mejjaouli**, Maha Alzahrani, *Decision-Making Model for Optimum Energy Retrofitting Strategies in Residential Buildings, Sustainable Production and Consumption*, 2020, ISSN 235-25509, <https://doi.org/10.1016/j.spc.2020.07.008>.
(<http://www.sciencedirect.com/science/article/pii/S2352550920301457>)
14. Maha Alzahrani, **Sobhi Mejjaouli**, (2019) " Life-Cycle Cost Analysis for Building Retrofitting: A Case Study ", *International Journal of Advances in Mechanical and Civil Engineering (IJAMCE)* , pp. 30-36, Volume-6, Issue-5
15. **Sobhi Mejjaouli**, Radu F. Babiceanu, *Cold supply chain logistics: System optimization for real-time rerouting transportation solutions, Computers in Industry*, Volume 95, 2018, Pages 68-80, ISSN 0166-3615,
<https://doi.org/10.1016/j.compind.2017.12.006>.(<http://www.sciencedirect.com/science/article/pii/S0166361517307698>)
16. **Sobhi Mejjaouli**, Radu F. Babiceanu, "RFID-Wireless Sensor Networks Integration: Decision Models and Optimization of Logistics Systems Operation" *Journal of Manufacturing Systems* (2015), pp. 234-245

Book Chapters:

1. **S. Mejjaouli**, R.F. Babiceanu, *Distributed intelligent real-time condition monitoring and recovery system for sustainable manufacturing enterprises*, in *Service Orientation in Holonic and Multi-agent Manufacturing and Robotics* (Borangiu, T. - Ed.), pp. 55-64, AGIR Publishing House, 2013.
2. **S. Mejjaouli**, R.F. Babiceanu, *Holonic condition monitoring and fault-recovery system for sustainable manufacturing enterprises*, in *Service Orientation in Holonic and Multi-Agent Manufacturing and Robotics, Studies in Computational Intelligence* (Borangiu, T., Trentesaux, D., Thomas, A. - Eds.), Vol. 544, pp. 31-46, Springer, 2014.

Conference Papers:

1. **S. Mejjaouli**, S. Alnourani and S. Guizani, "Scheduling of Charging Electric Vehicles based on Battery Capacity," 2023 IEEE International Wireless Communications and Mobile Computing (IWCMC), Marrakesh, Morocco, 2023, pp. 1352-1357, doi: 10.1109/IWCMC58020.2023.10183166.
2. Aljuraiyed, O., Alzaeri, A., & **Mejjaouli, S.** (2023, January). Application of Lean Six Sigma to Reduce Maintenance Tickets Duration in Residential Facilities. In *Proceedings of the 2023 10th International Conference on Industrial Engineering and Applications* (pp. 181-185), Rome, Italy, 9-11 January.

3. Guizani, K., **Mejjaoui, S.**, & Guizani, S. (2022). *Machine Learning Models to Detect COVID-19: An Overview*. 2022 *International Wireless Communications and Mobile Computing (IWCMC)*, 925-930. 10.1109/IWCMC55113.2022.9824743
4. Abdulrahman Alosaimi, Abdullah Alshahrani, Amal Aljahdari, and **Sobhi Mejjaoui**, "Economic Analysis of Fuel Trucks Transportation for the Gas Station in Riyadh City" *Proceedings of the 7th North American International Conference on Industrial Engineering and Operations Management, Orlando, Florida, USA, June 12-14, 2022*.
5. **Sobhi Mejjaoui**, Noura AlMandeel, Nouf AlSultan, Hind AlBabtain, Anoud Alarnous and Amal Alhussain, "What-if Analysis at a food service operation" *Proceedings of the 7th North American International Conference on Industrial Engineering and Operations Management, Orlando, Florida, USA, June 12-14, 2022*
6. Sarah Alajmi and Sarah El Sakka, **Sobhi Mejjaoui** "Economics Analysis for PLACOS'S Pipe and Pipe Fittings Machine" *Proceedings of the 7th North American International Conference on Industrial Engineering and Operations Management, Orlando, Florida, USA, June 12-14, 2022*
7. Mohammad Ghazal, Husam Anan and **Sobhi Mejjaoui**. 2022. *Transportation of Perishable Goods & Rerouting Solutions*. In 2022 *The 3rd International Conference on Industrial Engineering and Industrial Management (IEIM 2022)*, January 12-14, 2022, Barcelona, Spain. ACM, New York, NY, USA, 10 Pages. <https://doi.org/10.1145/3524338.3524370>
8. **Sobhi Mejjaoui** and Maha Alzahrani. 2022. *A Binary Programming Model for Residential Building Retrofitting*. In 2022 *The 3rd International Conference on Industrial Engineering and Industrial Management (IEIM 2022)*, January 12-14, 2022, Barcelona, Spain. ACM, New York, NY, USA, 9 Pages. <https://doi.org/10.1145/3524338.3524354>
9. Sanabel Alnourani and **Sobhi Mejjaoui**. 2022. *The Impact of Carbon Tax Policy on Supply Chain Network*. In 2022 *The 3rd International Conference on Industrial Engineering and Industrial Management (IEIM 2022)*, January 12-14, 2022, Barcelona, Spain. ACM, New York, NY, USA, 8 Pages. <https://doi.org/10.1145/3524338.3524341>
10. **Sobhi Mejjaoui**, Badr Abutaleb, Ahmed Al Munajem, "Performance Improvement of a Restaurant Through Optimization Applications", *Proceedings of the 12th Annual*

International Conference on Industrial Engineering and Operations Management, Istanbul, Turkey, March 7-10, 2022.

11. **Sobhi Mejjouli**, Dana Altheeb, Haifa Albahli, “Modeling to Maximize MENNA's Profit Case Study”, *Proceedings of the 12th Annual International Conference on Industrial Engineering and Operations Management, Istanbul, Turkey, March 7-10, 2022.*
12. **Sobhi Mejjouli**, Alanoud AlSabhan, Haifa AlShathry and Rima AlEisa, “Evaluating Company X's Product Mix and Product Size to Maximize Profit”, *Proceedings of the 12th Annual International Conference on Industrial Engineering and Operations Management, Istanbul, Turkey, March 7-10, 2022.*
13. Tareq, Ta, Alsagga, Alwalid, Ai, Idris, Omar, Oa, Alwuayl, Abdulaziz, Aa, Alsheikh and **Sobhi, Sm, Mejjouli**. 2022. Distributing Fast EV Charging Stations in Saudi Highways. In 2022 The 9th International Conference on Industrial Engineering and Applications (Europe) (ICIEA-2022- Europe), January 12-14, 2022, Barcelona, Spain. ACM, New York, NY, USA, 10 Pages. <https://doi.org/10.1145/3523132.3523148>
14. Sanabel Alnourani and **Sobhi Mejjouli**. 2022. The Impact of Carbon Cap Policy on Supply Chain Network. In 2022 The 9th International Conference on Industrial Engineering and Applications (Europe) (ICIEA-2022- Europe), January 12-14, 2022, Barcelona, Spain. ACM, New York, NY, USA, 8 Pages. <https://doi.org/10.1145/3523132.3523135>
15. Faisal Almeshkhas, Abdulaziz Alshyihin & **Sobhi Mejjouli**, “Implementing AHP Analysis to Increase the Detection Accuracy for Drone Detection System”, *Proceedings of the 4th European Conference on Industrial Engineering and Operations Management, Rome, Italy, August 2-5, 2021.*
16. Faisal Alhumaidi, Nasser BinObied, Sadeem Almarri & **Sobhi Mejjouli**, “The Impact of COVID-19 on Businesses: An Online Review”, *Proceedings of the 4th European Conference on Industrial Engineering and Operations Management, Rome, Italy, August 2-5, 2021.*
17. **Sobhi Mejjouli**, Joseph Taha Almudawah, Ibrahim Hamdan & Zaid Yaseen, “High-Profit Investments During COVID-19 in Stocks and Cryptocurrency”, *Proceedings of the 4th European Conference on Industrial Engineering and Operations Management, Rome, Italy, August 2-5, 2021*

18. Omar Juraid, Ali Alzaeri & **Sobhi Mejjaouli**, “Residential Real Estate Projects: An Engineering Economics Perspective”, *Proceedings of the 4th European Conference on Industrial Engineering and Operations Management, Rome, Italy, August 2-5, 2021*
19. Abdulaziz Alsalamah, Abdullah Alnooh, Nawaf Alsalman , Abdulaziz Alhammadi & **Sobhi Mejjaouli**, “Improving The Packaging Unit At AEC (Advanced Electronics company)”, *Proceedings of the 4th European Conference on Industrial Engineering and Operations Management, Rome, Italy, August 2-5, 2021*
20. Malek Almobarek, **Sobhi Mejjaouli**, Abdelghani Bouras & Abdalla Alrshdan, “AHP-Based Decision Support System for Elevators Selection”, *Proceedings of the 11th Annual International Conference on Industrial Engineering and Operations Management Singapore, March 7-11, 2021.*
21. Abdulaziz Alshyihin, Faisal AlMeshkhas & **Sobhi Mejjaouli**, "Establishing Drone Detection System By Using Deep Learning and YOLOv3 formatting", *Proceedings of the 11th Annual International Conference on Industrial Engineering and Operations Management Singapore, March 7-11, 2021.*
22. **Sobhi Mejjaouli** and Sara Qanaq, “Branch Network Optimization Model following Two Banks Merger”, *Proceedings of the International Conference on Industrial Engineering and Operations Management, Harare, Zimbabwe, October 20-22, 2020, pages 2446-2451.*
23. **Sobhi Mejjaouli** and Sarah Algublan, “Packaging Process Optimization Using Six Sigma”, *Proceedings of the International Conference on Industrial Engineering and Operations Management, Harare, Zimbabwe, October 20-22, 2020, pages 2438-2445.*
24. **Sobhi Mejjaouli** and Rahaf Albathi, “Fuzzy AHP and Linear Programming Based Decision Support System for Logistics Service Providers Allocation”, *Proceedings of the 5th NA International Conference on Industrial Engineering and Operations Management Detroit, Michigan, USA, August 10 - 14, 2020, pages 3046-3060.*
25. Malek Almobarek, Abdallah Alrshdan & **Sobhi Mejjaouli**, “Water Budget Deviation’s Control at Commercial Buildings” *Proceedings of the 5th NA International Conference on Industrial Engineering and Operations Management Detroit, Michigan, USA, August 10 - 14, 2020, pages 675-682.*

26. Maha Alzahrani, **Sobhi Mejjaoui**, *Life Cycle Cost Analysis for Building Retrofitting: A case Study*, *International Conference on Science, Engineering & Technology – ICSET Istanbul*, Turkey 20th- 21st June, 2019, RF-ICSETISTA-20069- 5606
27. **S. Mejjaoui**, R.F. Babiceanu, I. Nisanci, *The use of RFID sensor tags for perishable products monitoring in logistics operations*, *Proc. of the 2014 Winter Simulation Conference* (A. Tolk, S. Y. Diallo, I. O. Ryzhov, L. Yilmaz, S. Buckley, and J. A. Miller, eds.), pp. 2001-2012, Savannah, GA, Dec. 2014.
28. **S. Mejjaoui**, R.F. Babiceanu, *Integrated Monitoring and Control System for Production, Supply Chain and Logistics Operations*, *Proc. of the 24th International Conference on Flexible Automation and Intelligent Manufacturing (FAIM)*, San Antonio, TX, May 20-23, 2014.
29. **S. Mejjaoui**, R.F. Babiceanu, *System reliability for wireless sensor networks: computational modeling and node redundancy optimization*, *Proc. IEEE Int'l Systems Conf.*, pp. 292-297, Orlando, FL, April 2013.
30. **S. Mejjaoui**, R.F. Babiceanu, *Coverage computational and simulation model for sensor network stochastic deployment*, *Proc. Annual Industrial and Systems Engineering Research Conference*, San Juan, PR, May 2013.
31. **S. Mejjaoui**, R.F. Babiceanu, "Minimal Path Sets Models for Reliability Computation of Wireless Sensor Networks". *Proc. IEEE Int'l Systems Conf.*, Orlando, FL, April 2016.