

# Zaher Hamad Abusaq

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## Objective

I am an experienced professional engineer with skillsets varying from technical viewpoints to the organizational field. I specialize in Quality Management, Supply Chain, Systems Optimization. My aim is to obtain a challenging position in an organization that will utilize my organizational abilities, strong coordinating, planning and problem-solving skills. On the other hand, I seek to enhance my expertise and knowledge through working in a professional environment.

## Technical & Professional Summary

- Well trained in implementing and executing lean techniques such as 5S, VSM, Kanban, Kaizen, Root Cause Analysis
- Experienced in designing product flow and work sequence
- Trained in using discrete event simulation software's such as SIMIO, ARENA (1000hrs of experience)
- Experienced in using statistical tools [ Stat Graphics and Design Expert] & mathematical computational software's (GAMS, MATLAB and AMPL)
- Sound knowledge in Design of Experiments and Quality Engineering

## Education

- **PhD in Industrial Engineering, Fall 2019**  
Wichita State University, Wichita, Kansas, USA
- **Lean Systems Certificate**  
Wichita State University (WSU)
  - **Foundations of Six Sigma and Quality Improvement Certificate**  
Wichita State University (WSU)
- **Master of Science, Fall 2011**  
St. Mary's University, San Antonio, Texas, USA
- **Bachelor of Business Administration, December 2007**  
King Abdulaziz University, Jeddah, Saudi Arabia

## Experience

- **University of Business and Technology, Jeddah, KSA September 2019**
  - **Associate professor industrial engineering October 2023- Present**
  - **General Director of Human Resource - Sep 2020-Present**
  - **Assistance professor industrial engineering September 2019- October 2023**
- **Albandariyah International Co. Jun 9<sup>th</sup>, 2012**
  - I worked as Logistic Coordinator for Operations since June 2012 June 2013

- Reviewing approving monthly order request plans, Track and improve material usage efficiency, engineering Supervising and managing 25 employees in the shop strong working relations with other functional areas.

### **Wichita State University, Wichita, Kansas, USA**

#### **Graduate Instructor, August 2016 – May 2018**

- Engineering Graphics Lab (CATIA V5): Guided 160 students for developing design thinking skill through computer-aided design models
- 99.99% of students have successfully completed the course after evaluation modeling capabilities conducted through graphical modeling exams and design project work
- 100% Student participation achieved by extra credited interactive sessions, team building, and bi-weekly student involvement test

### **University of Business and Technology, Jeddah, KSA**

- **General Director of Human Resource - Sep -2020-Present**
- **Associate professor professor industrial engineering October 2023- Present**
- **Taught the following courses within the framework and scope of faculty responsibilities:**
  - Operations Research
  - Engineering Statistics
  - Material Handling and Packaging
  - Computer Applications in Industrial Engineering
  - Simulation
  - Facilities Planning
  - Production Planning and Control
  - Supply Chain Management
  - Industrial Quality Control
  - Warehouse Management
  - Probability and Engineering Statistics
  - Facilities Planning

### **Albandariyah International Co. Jun 9th, 2012**

- I worked as Logistic Coordinator for Operations since June 2012 June 2013
- Reviewing approving monthly order request plans, Track and improve material usage efficiency, engineering Supervising and managing 25 employees in the shop strong working relations with other functional areas

### **PhD's Project**

- A simulation-based methodology to measure, analyze and control the impact of variability in a production system using simulation technique [May 2016]
  - **Description:** Developed a non-parametric methodology to capture task processing time variability. Generated aircraft assembly line simulation models using ARENA & QUEST to analyze the impact of variability on the performance measures like WIP, Throughput and make span. Furthermore, developed critical path analysis models to capture and measure the impact of task time variability. Also, developed an algorithm for the selection of the best control strategy in order to minimize total cost.

### **Projects Handled**

- A study on the major factors that affect the deformation and the surface finish of a part processed in Mazak 5-axis turning machine (Course Project: Design of Experiments)
  - **Objective:** Design a factor screening experiment to identify the factors which have a major impact on the deformation & surface finish of part processed in the 5-axis machine.
  - **Description:** Mazak 5-axis machines are high-productivity machines and are utilized all-year-round except for break-down maintenance. The high percentage of utilization will lead to gradual decline of machine performance. A factor screening experiment was designed to identify the impact of spindle speed, check pressure and feed rate on the deformation and surface finish of the product (2024 T4aluminum rod).
  - **Result:** The results have shown that there is a significant impact of all the selected factors on machine performance.

### Office Lean Implementation

- **Objective:** To improve the product flow by reducing number of queues, wait times, redundant processes and thereby reducing the total lead time of the Form I-20 (US Dept. of Homeland Security document) processing system for the Graduate School Admission Process in Wichita State University.
- **Description:** The process had inventory (Raw material, WIP, and finished goods) all over the workplace. The process break down was not scientific, which resulted in several lot queues and waiting time. No established Takt time and large number of redundant processes.
- **Result:** Number of process steps was reduced from 20 to 15, number of queues was reduced from 12 to 10, the objective of the system was reiterated in terms of lead time and throughput, Software customizations were done to reduce the redundant processes, reduced non-value-added time by over 28%.

### Master's Project

- Graduate Project: Global Supply chain at Free Trade Zones

Our graduate team conducted a research and development project concentrated on global supply chain management and the analysis of the Free Trade Zone Areas. Our team compiled a list of given raw materials, distribution centers, and manufacturing locations available at the port of entry in United States and created a Mixed Integer Linear programming (MILP) to maximize supply chain efficiency. The Mixed Linear program we created would automatically choose the most strategic manufacturing location based on the proximity of raw materials and distribution centers. The solution provided by our formula would calculate the most efficient way to reduce transportation costs and greater enhance the overall supply chain productivity. Our team used **CPLEX** to design this model which generated feasible solutions with the optimal operational cost and supply chain for the organization.

#### ▪ **Relevant Course Work:**

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|----------------------------|--|
| ○ Discrete Optimization    | ○ Advance linear programing              |
| ○ Statistics               | ○ Lean manufacturing                     |
| ○ Design of Experiments    | ○ Operations Research                    |
| ○ Reliability Engineering  | ○ Production Systems Quality Engineering |
| ○ Advance Numerical Method | ○ Risk Analysis                          |

## Software Proficiency

- ARENA
- AUTO CAD
- DELMIA V5 R17
- QUEST
- STAT GRAPHICS
- MAPLE
- DESIGN EXPERT
- MATLAB

## Publications

- Abusaq, Z., Habib, M. S., Shehzad, A., Kanan, M., & Assaf, R. (2022). A Flexible Robust Possibilistic Programming Approach toward Wood Pellets Supply Chain Network Design. *Mathematics*, 10(19), 3657.
- Kanan, M., Habib, M. S., Shahbaz, A., Hussain, A., Habib, T., Raza, H., ... & Assaf, R. (2022). A grey-fuzzy programming approach towards socio-economic optimization of second-generation biodiesel supply chains. *Sustainability*, 14(16), 10169.
- Kanan, M., Dilshad, A. R., Zahoor, S., Hussain, A., Habib, M. S., Mehmood, A., ... & Asad, J. (2023). An Empirical Study of the Implementation of an Integrated Ergo-Green-Lean Framework: A Case Study. *Sustainability*, 15(13), 10138.
- Kanan, M., Habib, M. S., Habib, T., Zahoor, S., Gulzar, A., Raza, H., & Abusaq, Z. (2022). A Flexible Robust Possibilistic Programming Approach for Sustainable Second-Generation Biogas Supply Chain Design under Multiple Uncertainties. *Sustainability*, 14(18), 11597.
- Ahmed, N. S., Saberi, M. A., & Abusaq, Z. (2023). The Agile Adaptivity of Educators and Their Strategic Influence on the Learner During COVID-19 Pandemic. *From Industry 4.0 to Industry 5.0: Mapping the Transitions*, 753-761.
- Wannassi, B., Kanan, M., Hariz, I. B., Assaf, R., Abusaq, Z., Ben Hassen, M., ... & Barham, A. S. (2022). Cotton Spinning Waste as a Microporous Activated Carbon: Application to Remove Sulfur Compounds in a Tunisian Refinery Company. *Sustainability*, 15(1), 654.
- Kanan, M., Zahoor, S., Habib, M. S., Ehsan, S., Rehman, M., Shahzaib, M., ... & Hamdan, A. (2023). Analysis of Carbon Footprints and Surface Quality in Green Cutting Environments for the Milling of AZ31 Magnesium Alloy. *Sustainability*, 15(7), 6301.
- Abusaq, Z., Zahoor, S., Habib, M. S., Rehman, M., Mahmood, J., Kanan, M., & Mushtaq, R. T. (2023). Improving Energy Performance in Flexographic Printing Process through Lean and AI Techniques: A Case Study. *Energies*, 16(4), 1972.
- Aamer, A. K. A., Hamdan, A., & Abusaq, Z. (2022, March). The Impact of Artificial Intelligence on the Human Resource Industry and the Process of Recruitment and Selection. In *International Conference on Business and Technology* (pp. 622-630). Cham: Springer International Publishing.
- Kanan, M., Hawsawi, A., Aljazzar, S., Zahran, S., & Abusaq, Z. (2022, March). The Impact of 5S on the Production Planning Minimum Order Quantity (MOQ). In *International Conference on Business and Technology* (pp. 137-154). Cham: Springer International Publishing.
- Abusaq, Z., Al Suliman, J., Alharbi, M., & Ziwan, M. Assessing the Quality of an Online Learning Platform for Vocational Training in Skills-Based E-Learning: A Trainee's Perspective Using Importance and Performance Analysis at Jazan Technical Colleges.
- Al Suliman, J., Abusaq, Z., Bahkali, Y., & Aziabi, H. Online Training and Managing Service Quality with the Challenges of COVID-19: The Case of Private Institutes in the Jazan Region, Saudi Arabia.

- Kanan, M., Habib, M. S., Shahbaz, A., Hussain, A., Habib, T., Raza, H., ... & Assaf, R. (2022). A grey-fuzzy programming approach towards Socio-economic optimization of second-generation biodiesel supply chains. *Sustainability*, 2022; 14 (16): 10169.
- Abusaq, Z. (2023). Optimizing manufacturing firms' operational performance through supply chain integration: Moderating effect of supply chain complexity. *Uncertain Supply Chain Management*, 11(4), 1569-1578.
- Abusaq, Z. (2023). Quality of information sharing as a moderator: An investigation of the relationship between supply chain management strategies and competitive advantage in Saudi Arabian manufacturing companies. *Uncertain Supply Chain Management*, 11(4), 1579-1588.
- Kanan, M., Dawwas, E., Saleh, Y., Othman, M., Assaf, R., Hamdan, A., ... & Zahran, S. (2023). An optimization model for a sustainable closed-loop supply chain considering efficient supplier selection and total quantity discount policies. *Uncertain Supply Chain Management*, 11(3), 1223-1246.
- Kosztyán, Z. T., & Kovács, Z. (Eds.). (2023). *Mathematical Methods and Operation Research in Logistics, Project Planning, and Scheduling*. MDPI-Multidisciplinary Digital Publishing Institute.
- Z.Alsalem, and Krishnan, K.K., “Impact of warehousing in supply chain selection”, Proceedings of the 5th Annual World Conference of the Society for Industrial and Systems Engineering, San Francisco, CA, USA October 13-14, 2016.
- Z Alsalem, V Maru, and KK Krishnan., “Design of Multi-Echelon Supply Chain System to Optimize Cost and Service Levels with Supplier Selection,” Proceedings of the 6th Annual World Conference of the Society for Industrial and Systems Engineering, Herndon, VA, USA, October 19-20, 2017.
- V. Maru, Z.Alsalem, and Krishnan, K.K., “Design of Multi-Echelon Supply Chain Systems to Optimize Cost and Service Levels ,” Proceedings of the 6th Annual World Conference of the Society for Industrial and Systems Engineering, Herndon, VA, USA, October 19-20, 2017.
- Z Alsalem, V Maru, and KK Krishnan., “Optimal Supply Chain Design With Multi-echelon And Multi-products Under Uncertainty In Demand,” Industry, Engineering& Management Systems Conference from March 17 through March 19, 2019.
- Z Alsalem, V Maru, and KK Krishnan., “Optimal Supply Chain Design With Multi-echelon And Multi-products Under Uncertainty In Demand,” Industry, Engineering& Management Systems Conference from March 17 through March 19, 2019
- V Maru, Z.Alsalem, and Krishnan, K.K., “Design of Multi-Echelon Supply Chain Systems to Optimize Cost and Service Levels

### **Professional Affiliations**

- Member of American Production and Inventory Control Society [APICS], Wichita Student Chapter 2015- to date
- Member of American Society Of Quality, Wichita Student Chapter’ 2015- to date
- Active Member of Society of Manufacturing Engineers, August 2016- to date