

# Curriculum Vitae

*Ahmed Shaban Shaban Khalifa*

Associate Professor of Industrial Engineering  
Department of Mechanical and Industrial Engineering  
College of Engineering, Sultan Qaboos University

## OFFICE ADDRESS

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## PERSONAL INFORMATION

Full Name: Ahmed Shaban Shaban Khalifa  
Nationality: Egyptian  
Date of Birth: November 29, 1984  
Place of Birth: Fayoum Governorate, Egypt  
Marital Status: Married

## IMPORTANT LINKS

### Personal Academic Pages:

<http://scholar.google.com/citations?user=a4FSIIkAAAAJ&hl=en>

[https://www.researchgate.net/profile/Ahmed\\_Shaban/info?ev=prf\\_info](https://www.researchgate.net/profile/Ahmed_Shaban/info?ev=prf_info)

<http://www.scopus.com/authid/detail.url?authorId=7003818834>

<http://orcid.org/0000-0002-1241-5647>

<https://www.webofscience.com/wos/author/record/P-3817-2019?state=%7B%7D>

<https://www.squ.edu.om/engineering/Faculty-and-Staff/Department-of-Mechanical-and-Industrial-Engineering>

## ACADEMIC DEGREES AND EDUCATION

### **Ph.D., 2014      Industrial Engineering**

Feb. 7, 2014      Department of Mechanical and Aerospace Engineering  
Faculty of Engineering, University of Rome “La Sapienza”  
Via Eudossiana, 18, 00184 Rome, Italy

Thesis Title: “*Analyzing the Value of Information Sharing and Inventory Replenishment Policies on Supply Chain Performance*”

Thesis Supervisors: Prof. Massimo Tronci, Prof. Giulio Di Gravio, Prof. Francesco Costantino

### **MSc., 2010      Industrial Engineering**

June 7, 2010      Department of Mechanical Design and Production  
Faculty of Engineering, Cairo University  
Giza 12613, Egypt

Thesis Title: “*Identification of Quality Control Chart Patterns Using Neural Networks*”

Main Supervisor: Prof. Mohamed Adel Shalaby, Professor of Industrial Engineering and IE Group Senior, Mechanical Design and Production Department, Faculty of Engineering, Cairo University.

### **BSc., 2006      Industrial Engineering**

May 2006      Department of Industrial Engineering  
Faculty of Engineering, Fayoum University  
Fayoum 63514, Egypt

General Grade: Excellent with Honour (**Ranked First**)

Graduation Project Grade: Excellent

## ACADEMIC POSITIONS

- 2023 - Present**    **Associate Professor of Industrial Engineering** at the Department of Mechanical and Industrial Engineering, College of Engineering, Sultan Qaboos University, Al-Khoud, Muscat 123, Oman.
- 2020 - 2023**    **Associate Professor of Industrial Engineering** at the Mechanical Engineering Department (formerly Industrial Engineering Department), Faculty of Engineering, Fayoum University, Fayoum 63514, Egypt.
- 2015 - 2020**    **Assistant Professor of Industrial Engineering** at the Mechanical Engineering Department (formerly Industrial Engineering Department), Faculty of Engineering, Fayoum University, Fayoum 63514, Egypt.
- 2010 - 2015**    **Assistant Lecturer** at the Industrial Engineering Department, Faculty of Engineering, Fayoum University, Fayoum 63514, Egypt. (I was on study leave for PhD degree from 2010 to 2015).
- 2014 - 2015**    **Postdoc Fellow/Researcher** at the Department of Mechanical and Aerospace Engineering, University of Rome “La Sapienza”, Via Eudossiana, 18, 00184 Rome, Italy.
- 2010 - 2014**    **PhD Fellow and Researcher** at the Department of Mechanical and Aerospace Engineering, University of Rome “La Sapienza”, Via Eudossiana, 18, 00184 Rome, Italy.
- 2006 - 2010**    **Teaching Assistant and Researcher** at the Industrial Engineering Department, Faculty of Engineering, Fayoum University, Egypt.
- MSc Student** at the Mechanical Design and Production Department, Faculty of Engineering, Cairo University, Egypt.

## LANGUAGES

Arabic (native), English (Advanced), and Italian (Fair).

## COMPUTER SKILLS

Mathematical Tool:	MATLAB
Programming Languages:	VB.net, Python, MATLAB
Mathematical Programming:	MATLAB, LINGO, CPLEX, TORA, Excel Solver
Simulation of Discrete Event Systems:	Rockwell Arena, SIMUL8
System Dynamics:	Vensim, Stella
Engineering Drawing:	AutoCAD
Solid Modeling:	Autodesk Inventor
Project Management Software:	MS Project, Primavera P6
Statistical Package:	R, Minitab, SPSS, Stat-Fit
Microsoft Office:	Word, Excel, PowerPoint, Access, Visio
ERP Systems & DBMS:	inFlow Inventory, LibreOffice Base
Others:	WinQSB, POM-QM

## RESEARCH INTERESTS & EXPERIENCE

### **General Topics**

Supply Chain Modelling, Supply Chain Disruption, Modeling and Simulation of Industrial Systems, System Dynamics, Operations Research, Forecasting, Operations Management, Inventory Planning and Control, Statistical Process Control, Artificial Intelligence, Experimental Design, Optimum Design, Simulation Gaming, Risk Assessment, Energy Management, Renewable Energy, Hybrid Renewable Energy Systems, Demand Side Management, Energy Efficiency, Smart Grid.

### **Sample of Research Experience**

- Simulation modelling of multi-echelon supply chains.
- The investigation of the bullwhip effect in multi-echelon supply chains.
- The modelling of disruption and risk management in supply chains.
- The formulation and modelling of supply chain collaboration and information sharing models.
- The investigation of the impact of inventory replenishment policies in supply chains.
- The formulation and modelling of innovative forecasting and inventory replenishment policies to improve the dynamics of supply chains.

- Modeling and optimizing of supply chain dynamic performance.
- The application of Neural Networks to identify quality control charts patterns.
- The development of simulation games for educational and research purposes.
- The techno-economic assessment of renewable energy (RE) resources (solar, wind, and biomass).
- Modeling, simulation, and optimization of energy systems and hybrid RE systems.
- Development of load scheduling approaches for smart energy management.
- System dynamics modeling of energy systems and energy policies.
- Development of prediction models for wind speed and solar radiation for RE applications.
- Development of intelligent systems for real-time monitoring and predictive maintenance of PV systems.
- Modeling and optimization of solid waste management systems.
- Developing risk assessment methodologies based on classical methods and system dynamics.

### **Research Metrics (December 15, 2024)**

1. Total number of articles published in International Journals: 30
2. Total number of articles/Abstracts published in Conferences: 15

#### **3. Google Scholar Metrics:**

- Google Scholar Link:  
[https://scholar.google.com/eg/citations?hl=en&user=a4FSIIkAAAAJ&view\\_op=list\\_works](https://scholar.google.com/eg/citations?hl=en&user=a4FSIIkAAAAJ&view_op=list_works)
- Number of articles: 45
- Total number of citations: (All: **1117**; Since 2019: **775**)
- h-index: (All: **21**; Since 2019: **18**)
- i10-index: (All: **26**; Since 2019: **22**)

#### **4. Scopus Metrics:**

- Scopus Author ID: 7003818834
- Scopus Account Link:  
<https://www.scopus.com/authid/detail.uri?authorId=7003818834>
- Number of articles: **30**
- Total number of citations: **721**
- h-index: **16**

## **Supervision of Postgraduate Students**

### **MSc Thesis Supervision**

1. **Integrated Production and Distribution Planning in Multi-Echelon Supply Chains: A Case Study of an Omani Industrial Company**, MSc Thesis (In-Progress); Role: Supervisor; MSc Student: Abdulrahman AlHassani; Registration: Department of Mechanical and Industrial Engineering, Sultan Qaboos University.
2. **Mathematical modelling and optimizing of solid waste management systems in developing countries**; MSc Thesis (Completed); Role: Co-Supervisor; MSc Student: Fatma-Elzahraa Mohammed (Teaching Assistant at the Faculty of Engineering, Fayoum University); Registration: Department of Industrial Engineering, Fayoum University.
3. **Using system dynamics in integration with PHA methodology for process hazards analysis in production systems**; MSc Thesis (Completed); Role: Co-Supervisor; MSc Student: Ahmed Abdelwahd (Teaching Assistant at the Faculty of Engineering, Fayoum University); Registration: Department of Industrial Engineering, Fayoum University.
4. **Scheduling approaches for smart energy management systems**; MSc Thesis (Completed); Role: Co-Supervisor; MSc Student: Mohammed Salhen (Teaching Assistant at the Faculty of Engineering, Fayoum University); Registration: Department of Mechanical Design and Production, Cairo University.
5. **Simulation and analysis of the ordering policies in the supply chain**, MSc Thesis (Completed in 2012); Role: Co-Supervisor; MSc Student: Matteo Ferrari; Registration: Department of Mechanical and Aerospace Engineering, Sapienza University of Rome, Italy.
6. **Simulation model to analyze the impact of ordering policies on supply chain performances**, MSc Thesis (Completed in 2012); Role: Co-Supervisor; MSc Student: Luisa Marini Bettolo; Registration: Department of Mechanical and Aerospace Engineering, Sapienza University of Rome, Italy.

### **PhD Dissertation Supervision**

1. **Machine learning and anomaly detection for quality control in manufacturing operations**; PhD Thesis (in progress); Role: Co-Supervisor; PhD Student: Mohammed Gamal (Assistant Lecturer at the Mechanical Engineering Department, Faculty of Engineering, Nahda

University); Registration: Department of Production and Mechanical Design Engineering, Faculty of Engineering, Minia University.

2. **Biomass to bioenergy supply chain design and optimization in Egypt**; PhD Thesis (in progress); Role: Co-Supervisor; PhD Student: Neamat Gamal (Assistant Lecturer at the Faculty of Engineering, Fayoum University); Registration: Department of Production and Mechanical Design Engineering, Minia University.

### **Thesis Examiner**

1. I served as an examiner for the MSc thesis “**Application of benchmarking with overall equipment cost loss and cost of quality for industrial process improvement**”, by Israa Abdellatif Mahmoud, Industrial Engineering Department, **Fayoum University**, 2021.
2. I served as an external examiner for the Qualifying Exam of the PhD thesis “**Integrated warehouse scheduling and storage system**”, by Rana Mohamed Abdel Rahman Saleh, Department of Mechanical Design and Production Engineering, **Cairo University**, July 2022.
3. I served as an external examiner for the PhD thesis “**Investigating the impact of economic and natural parameters in the supply chain management of milled grain products**”, by Marubini Martin Siluthanyi, The Faculty of Engineering and The Built Environment, **University of Johannesburg**, September 2022.
4. I am serving as an external examiner for the PhD thesis “**IT governance performance monitoring and improvement: design of a data-driven decision support system**”, by VITTORIA BIAGI, The PhD Program in Industrial and Management Engineering, **Sapienza University of Rome**, December 2022.
5. I served as an examiner for the MSc thesis “**Sustainable solid waste management vehicle routing problem considering driver’s health state and risk of accidents**”, by Abedalaziz Snouber, Industrial Engineering Department, **An-Najah National University**, 2024.

### **FUNDED PROJECTS**

**I have been involved in the following funded projects:**

#### **A- Research Projects**

1. **Techno-Economic Feasibility and Challenges of Integrating Electric Vehicle Charging Stations with Renewable Energy Systems for Omani Households**, Principal Investigator, Internal Grant Fund, SQU, 6000 OMR, 2025-2026.
2. **Analysis of the Impact of Correlated Demand on the Dynamic Performance of Multi-Echelon Supply Chains**, Principal Investigator, Deanship Research Fund, SQU, 3000 OMR, 2024-2025.
3. **Assessing the Potential Benefits of Smart Grid on Energy Management Systems at Distribution Side in Egypt: A Prototype**, Funded by National Telecom Regulatory Authority (NTRA - Egypt), Budget: 1,500,000 EGP, Duration: 2 Years, Start Date: September 2017, **Role: CO-PI**, Current Status: Completed.

**Key Objectives:**

- Developing intelligent systems for the real-time optimization of the reactive power based on smart grid capabilities.
- Developing load-scheduling optimization approaches that suit Egyptian conditions.
- Design and implementation of a smart meter with the capability of PF measuring.
- Proposing smart grid configurations (including smart meters, energy management systems, PV systems, and mobile and cloud applications) for potential implementation in Egypt.
- Installing a PV system to support the project objectives and to be used for educational and research purposes at the faculty. It is intended to integrate it with the smart grid prototype to collect relevant data for energy management research.
- Establishing a research lab for smart grid and energy management.

4. **Optimal Design of Hybrid Renewable Energy Systems for Tourism Facilities in Fayoum Governorate**, Funded by STDF (Egypt-UK Newton-Musharafa Fund: Institutional Links), **Partners:** *Fayoum University, Imperial College London (UK), and Industrial Partners*, Budget: £296,861.22 (for both Institutions), Duration: 2 Years., Start Date: October 2019, **Role: CO-PI**, Current Status: Completed.

**Key Objectives:**

- Assessing the potential of wind and solar resources and developing prediction models for solar irradiance and wind speed in Fayoum.



- Assessing lignocellulosic biomass potentials from waste agricultural residues in Fayoum to be integrated within hybrid renewable energy systems (HRES) systems.
- Proposing potential HRES configurations for tourism facilities and determining their optimal design and operation when serving the onsite energy demands of such facilities in Fayoum.
- Installing a weather station for renewable energy research.
- Developing a small-scale hybrid Wind/PV for validation and research purposes.

**5. A Preliminary Evaluation of Wind Energy Potential as A Power Generation Source in Fayoum**, Funded by Fayoum University Research Fund, Budget: 40,000 EGP, Duration: 1 Year, Start Date: TBD, **Role: PI.**

**European Funded Projects**

- 1. Industrial Engineering and Management Sciences – New Postgraduate Programs (544477-TEMPUS-1-2013-1-EG-TEMPUS-JPCR (2013 – 5033/001-001))**, Funded by TEMPUS, Budget: 1,000,000 Euro, **Role: Team Member of Partner University**, Current Status: Completed. I was involved in the following project activities:
  - The development and accreditation of a Postgraduate Diploma in Quality Systems and Management at the Mechanical Engineering Department, Faculty of Engineering, Fayoum University.
  - The establishment of two modern IE labs: “**Industrial Engineering Computer Lab**” and “**Advanced Quality Control Lab**” at the Mechanical Engineering Department, Faculty of Engineering, Fayoum University.
  - The participation in the attendance and organization of the project related training activities and workshops that have been conducted in Egypt and abroad at Partner European Universities.
- 2. Erasmus+ International Credit Mobility, Partners:** Fayoum University and University of Rome “La Sapienza”, **Role: Principal Coordinator**.

## PROTOTYPES, SYSTEMS & RESEARCH LABS DEVELOPED

### 1. Research Project: Assessing the Potential Benefits of Smart Grid on Energy Management Systems at Distribution Side in Egypt: A Prototype

- Participated in the development of **an Intelligent System** for the real-time optimization of the Reactive Power based on smart grid capabilities. A prototype has been developed to validate the applicability and effectiveness of the proposed intelligent system as a mean to improve the reactive power and energy efficiency. A related research paper has been published in **IEEE Access**.

*Suzan Abdelhady, Ahmed Osama, Ahmed Shaban, and Mahmoud Elbayoumi. "A real-time optimization of reactive power for an intelligent system using genetic algorithm." IEEE Access, 8, January 2020, 11991-12000. DOI: 10.1109/ACCESS.2020.2965321*

- Participated in the development of **a Decision Support System for Energy Management** (i.e., load-scheduling optimization approaches) that suit Egyptian conditions. The proposed load-scheduling approaches can be employed for the **Smart Energy Management** at residential and commercial building in **Egypt**. A related research paper has been published in **Energy Reports**. Other related papers derived from a MSc thesis (that I co-supervise) will be published soon.

*Ahmed Shaban, Hagag Maher, Mahmoud Elbayoumi, and Suzan Abdelhady. "A cuckoo load scheduling optimization approach for smart energy management." Energy Reports, November 2021, 7, 4705-4721. DOI: 10.1016/j.egy.2021.06.099*

- Participated in the design and implementation of a **Smart Meter** with the capability of power factor measuring.
- Participated in the development of **Smart Grid** configurations and prototypes (including smart meters, energy management systems, PV systems, and mobile and cloud applications) for potential implementation in **Egypt**.
- Participated in the installation of a **PV solar system** to support the project objectives and to be used for educational and research purposes. It is intended to integrate it with the smart grid prototype to collect relevant data for **energy management research**.
- Participated in the establishment of a **Research Lab for Smart Grid and Energy Management** at the Faculty of Engineering, Fayoum University.

## 2. Project Title: Optimal Design of Hybrid Renewable Energy Systems for Tourism Facilities in Fayoum Governorate

- Participated in the design and installation of a **Weather Station** for renewable energy research. The weather station is installed at the **Regional Training Center of Fayoum University**.
- Participated in the design and installation of a **Small-Scale Hybrid Wind/PV** Prototype for validation and research purposes. (*The PV system was installed, and it is remaining to install the wind turbine*)
- Participated in proposing and evaluating the technical and economic feasibility of different configurations of **Hybrid Renewable Energy Systems** that can supply tourism facilities with electric, thermal, and cooling energy. A related paper has been published in the 15<sup>th</sup> SDEWES Conference.

Jian Song, Suzan Abdelhady, Ahmed Shaban, Kai Wang, Domenico Borello, Antonio Marco Pantaleo, and Christos N. Markides. "Technoeconomic assessment of hybrid renewable energy systems: Integration options for the Egyptian tourism sector." In: *The 15<sup>th</sup> SDEWES Conference, 1-5/9/2020, Cologne, Germany*

- Participated in the development of **Artificial Intelligence Models** for the short-term prediction of wind speed and solar irradiance at **Fayoum**.
- Participated in the development of a **Decision Support System** that can be applied for the optimal design of **Biomass Supply Chains** that depend on agriculture residues to produce electric and thermal energy. The proposed decision support system has been applied to the case of **Egypt** and a related research paper has been published in **Energies**.

Suzan Abdelhady, Mohamed A. Shalaby, and Ahmed Shaban. "Techno-Economic Analysis for the Optimal Design of a National Network of Agro-Energy Biomass Power Plants in Egypt." *Energies*, May 2021, 14(11), p.3063. DOI: [10.3390/en14113063](https://doi.org/10.3390/en14113063)

## 3. MSc Thesis: Mathematical modelling and optimizing of solid waste management systems in developing countries

- Participated in the development of a **Decision Support System** that can be applied for the optimal design of **Solid Waste Management Systems** in developing countries. The proposed decision support system has been applied to optimally design the solid waste management system of the **Fayoum Governorate**. A related research paper has been published in **Sustainability**.

**Ahmed Shaban**, Fatma-Elzahraa Zaki, Islam H. Afefy, Giulio Di Gravio, Andrea Falegnami, and Riccardo Patriarca. "An Optimization Model for the Design of a Sustainable Municipal Solid Waste Management System." *Sustainability*, May 2022, 14(10), p.6345. DOI: 10.3390/su14106345

## **TEACHING EXPERIENCE & SUPERVISION**

### **1. Courses taught as Teaching Assistant and Assistant Lecturer at the Industrial Engineering Department at Fayoum University over the period from 2006 to 2010.**

IE 103 Fundamentals of Industrial Management  
IE 105 Materials Science  
IE 107 Engineering Economy  
IE 201 Thermodynamics  
IE 209 Industrial Statistics and Quality Control  
IE 302 Operations Research  
IE 307 Production Planning and Control  
IE 308 Quality Planning and Control  
IE 401 Modeling and Simulation of Industrial Systems  
IE 402 Planning and Controlling Engineering Projects  
IE 406 Feasibility Study  
IE 409 Productivity Measurement and Analysis  
IE 410 Value Engineering

### **2. Undergraduate courses taught as Assistant Professor/Associate Professor (2015-Present).**

#### **A. Courses being taught at the Department of Mechanical and Industrial Engineering at Sultan Qaboos University:**

##### **Academic Year 2023-2024**

MEIE3271: Methods of Operations Research (Fall 2023)  
MEIE3279: Theory of Modeling and Optimization (Fall 2023)  
MEIE3284: Industrial Information Systems (Fall 2023)  
MEIE4218: Advanced Probability and Statistics (Fall 2023)  
MEIE3281: Probability and Statistics for Engineers [Sections 10//20] (Spring 2024)  
MEIE4219: Optimal Experimental Design (Spring 2024)

##### **Academic Year 2024-2025**

MEIE3279: Theory of Modeling and Optimization (Fall 2024)  
MEIE3284: Industrial Information Systems (Fall 2024)

MEIE3292: Work System Analysis and Design (Fall 2024)

MEIE5291: FYP (Fall 2024)

**B. Courses taught at the Industrial Engineering Department at Fayoum University (2015-2023):**

IE 205 Industrial Cost Accounting

IE 209 Industrial Statistics and Quality Control

IE 302 Operations Research

IE 306 Design and Analysis of Experiments

IE 308 Quality Planning and Control

IE 401 Modeling and Simulation of Industrial Systems

IE 403 Quality Assurance and Management

IE 408 Industrial Information Systems

IE 409 Graduation Project

IE 410 Value Engineering

**C. Courses taught at the Mechanical Engineering Department (Formerly: Industrial Engineering Department) at Fayoum University (2015-2023):**

IND 223 Operations Research

IND 315 Statistical Quality Control

IND 413 Advanced Operations Research

IND 417 Graduation Project I

IND 427 Graduation Project II

IND 423 Modeling and Simulation of Industrial Systems

IND 433 Production and Operations Management

IND 443 Quality Assurance Management

**D. Courses taught at the Construction Engineering Program at Fayoum University:**

GEN-C007 Accounting (Academic Year: 2015/2016)

**3. Postgraduate courses taught as Assistant Professor/Associate Professor (2015-now).**

**A. Course taught at the Industrial Engineering Department at Fayoum University:**

IE 713 Advanced Industrial Operations Research (PhD Level)

**B. Courses taught at the Mechanical Engineering Department (Formerly: Industrial Engineering Department) at Fayoum University:**

IND 610 Supply Chain Management  
 IND 611 Design and Analysis of Industrial Experiments  
 IND 612 Modeling and Simulation of Industrial Systems  
 IND 614 Statistical Process Control and Management  
 MED 504 Industrial Operations Research  
 MED 604 Advanced Industrial Operations Research

#### **4. Graduation Projects Supervised**

Supervised the following graduation projects (BSc Students) at the Mechanical Engineering Department, Faculty of Engineering, Fayoum University.

<b>No.</b>	<b>Graduation Project (Academic Year)</b>	<b>Number of Students</b>
1	Simulation Model of a Divergent Production Line (Sapienza University of Rome, 2012)	1
2	Simulation modeling of patient flow of the abdominal outpatient clinic at Fayoum University Hospital ( <b>Academic Year: 2016/2017</b> )	4
3	Using six sigma methodology to minimize scrap rate at a ceramic manufacturing company ( <b>Academic Year: 2017/2018</b> )	3
4	Balancing and simulation of assembly line in an automotive component manufacturing company ( <b>Academic Year: 2017/2018</b> )	6
5	Developing a production planning system for a chassis manufacturing company ( <b>Academic Year: 2017/2018</b> )	6
6	Balancing and simulation of speakers' assembly line in Wolf company ( <b>Academic Year: 2018/2019</b> )	5
7	Optimal design of municipal waste management system in Fayoum ( <b>Academic Year: 2019/2020</b> )	3
8	Balancing and simulation of a washing machine assembly line in a Toshiba factory ( <b>Academic Year: 2020/2021</b> )	3
9	Applying the Six Sigma methodology to improve yield of a washing machine assembly line in a Toshiba factory ( <b>Academic Years: 2020/2021</b> )	2
10	Applying the Six Sigma methodology to reduce defects in a washing machine assembly line in a Toshiba factory ( <b>Academic Years: 2021/2022</b> )	3
11	Analysis and improvement of the supply chain performance of a manufacturing organization ( <b>Academic Years: 2022/2023</b> )	5
12	Application of lean manufacturing methods to minimize waste at an industrial company ( <b>Academic Years: 2022/2023</b> )	5

Supervised the following graduation projects (BEng Students) at the **Mechanical and Industrial Engineering Department, College of Engineering, Sultan Qaboos University**.

No.	Graduation Project (Academic Year)	Number of Students
1	Integrating value stream mapping, simulation modeling, and digital twin technologies to enhance manufacturing system performance: a case study of an Omani manufacturing company ( <b>Academic Years: 2024/2025</b> )	3

## ADMINISTRATIVE & PRACTICAL EXPERIENCES

### 1. Leadership Positions/Activities

- Deputy Director of the Quality Assurance & Accreditation Unit (QAAU) at the Faculty of Engineering, Fayoum University (2016-2023).
- Excellence Ambassador and Faculty of Engineering Coordinator for Egypt Government Excellence Award, Fayoum University (2020-2023).
- Head of the Departmental Committee for Developing the Strategic Research Plan 2016-2021 of the Mechanical Engineering Department, Fayoum University.
- Head of the Graduate Committee for Formulating the Admission Rules of the PhD Programs offered by the Mechanical Engineering Department, Fayoum University (2022).
- Head of the Departmental Committee for Developing the Bylaw and Curriculum of the BSc Programs at the Mechanical Engineering Department, Fayoum University (2021-2022).
- Head of the Industrial Engineering (IE) Committee for Developing the Bylaw and Curriculum of the Industrial Engineering Graduate Programs at the Mechanical Engineering Department, Fayoum University (2021-2022).
- Head of the Exams Management & Control Committee for the Diploma and Preliminary Stage at the Faculty of Engineering, Fayoum University (2020-2023).
- Chairman of Industrial Engineering Research Group within multi-disciplinary research projects teams.
- PI and Co-PI for a number of funded research projects.
- Coordinator of the partner university in an Erasmus+ International Credit Mobility Project, Partners: Fayoum University and Sapienza University of Rome.

## **2. Service to Community/Committees**

### **A. Departmental Committees (Department of Mechanical and Industrial Engineering, Sultan Qaboos University)**

- Member of the OAAA Committee, Department of Mechanical and Industrial Engineering, Sultan Qaboos University (2024-Present).
- Member of the Department Publications/Web Committee, Department of Mechanical and Industrial Engineering, Sultan Qaboos University (2024-Present).
- Co-Chair (IE PG-Programs) of the Department Academic Programs Modernization Committee (DAPMC), Department of Mechanical and Industrial Engineering, Sultan Qaboos University (2024-Present).
- Member of the Department Self-Study Report Committee, Department of Mechanical and Industrial Engineering, Sultan Qaboos University (2024-Present).
- Member of the Department Recruitment Committee, Department of Mechanical and Industrial Engineering, Sultan Qaboos University (2024-Present).
- Member of the Textbook & Library Committee, Department of Mechanical and Industrial Engineering, Sultan Qaboos University (2023-Present).
- Member of the Seminar Committee, Department of Mechanical and Industrial Engineering, Sultan Qaboos University (2023-2024).

### **B. Departmental Committees (Mechanical Engineering Department, Fayoum University)**

- Member of the PhD Graduate Admission Committee (2022-2023).
- Member and the Secretary of the Mechanical Engineering Department Board (2021-2023).
- Coordinator of the Industrial Training for the Mechanical Engineering Students (2019-2020).
- Member of the Mechanical Engineering Department Board (2019-2020).
- Coordinator of the Students Distribution Committee (2018-2021). The Department currently offers three BSc programs (Industrial Engineering, Mechanical Design and Production Engineering, and Mechanical Power Engineering).
- Member and the Secretary of the Industrial Engineering Department Board (2015-2016).
- Coordinator of the Department of Mechanical Engineering in the Quality Assurance Unit (2015-2016).



- The head of many departmental committees as listed in the above section (Leadership Positions/Activities).

#### **C. College Committees (Faculty of Engineering, Fayoum University)**

- Member of the Board of the Workshop Center at Faculty of Engineering, Fayoum University (2022-2023).
- Member of the Faculty Committee for Developing the Faculty's BSc Programs Bylaw, Fayoum University (2021-2022).
- Member of the Board of the Engineering Research & Consultations Center (2020-2022).
- Member of the Students Cumulative Results Committee (2019-2021).
- Member of the Education and Student Affairs Committee (2017-2022).
- Member of the Postgraduate Studies Committee (2015-2017).
- Member of the Executive Team of the Development of Students' Assessment System Project, Faculty of Engineering, Fayoum University (2009-2010).
- Member of the Quality Assurance Executive Team of the Faculty of Engineering, Fayoum University (2007-2010).

#### **D. University Committees (Fayoum University)**

- Member of Fayoum University Applied Research Committee (2022-2023).
- Member of Recruitment Committees at Fayoum University (Printing Workshop) and Fayoum Drinking Water and Sanitation Company (2017-2022).
- Participated in technical inspection committees at Fayoum University.

#### **E. National Committees**

- External Reviewer, Ministry of Higher Education, Research & Innovation, Oman, Review and Evaluation of an Academic Program (2024-Present).
- Member of the Subcommittee for the Curriculum Assessment of BSc Programs at Sohag University, Supreme Council of Universities (Egypt), 2022.

#### **F. Journal Editorial Board & Conference Committees**

**I have joined the Editorial Board of the following journals:**

- Fayoum University Journal of Engineering (ISSN: 2537-0626), **Role: Associate Editor**, Website: <https://fuje.journals.ekb.eg/>.

- Journal of Industrial Engineering & Management (ISSN: 2169-0316), **Role:** Editorial Board Member, Website: <https://www.hilarispublisher.com/industrial-engineering-management.html>.
- International Journal of Quality Engineering and Technology (ISSN: 1757-2177), **Role:** Editorial Board Member, Website: <https://www.inderscience.com/jhome.php?jcode=ijqet>.
- Applied Sciences (ISSN: 2076-3417), **Role:** Serving as the Guest Editor for the Special Issue titled "Deep Learning in Supply Chain and Logistics", Website: [https://www.mdpi.com/journal/applsci/special\\_issues/5XYQ47LRTZ](https://www.mdpi.com/journal/applsci/special_issues/5XYQ47LRTZ)
- Chair of Competition Committee, Member of Steering Committee, 2nd GCC International Conference on Industrial Engineering and Operations Management, Muscat, Oman, December 1-3, 2024.

#### **G. Journal Referee**

**I have reviewed papers for the following journals:**

- Computers & Industrial Engineering (Online ISSN: 1879-0550, Print ISSN: 0360-8352)
- International Journal of Reliability and Safety (ISSN:1479-389X)
- Applied Mathematical Modelling (ISSN:0307-904X)
- Computers & Industrial Engineering (ISSN: 0360-8352)
- International Journal of Applied Decision Sciences (ISSN:1755-8077)
- Journal of Industrial and Production Engineering (ISSN:2168-1015)
- International Journal of Quality Engineering and Technology (ISSN: 1757-2177)
- Autosoft Journal Intelligent Automation & Soft Computing (ISSN: 1079-8587)
- Industrial Engineering & Management (ISSN: 2169-0316)
- Environmental Impact Assessment Review (ISSN:0195-9255)
- International Journal of Production Research (ISSN: 0020-7543)
- Expert Systems with Applications (ISSN:0957-4174)
- International Journal of Production Economics (ISSN:0925-5273)
- Supply Chain Forum: An International Journal (ISSN: 1625-8312)
- Information Processing in Agriculture (E-ISSN:2214-3173)
- European Journal of Industrial Engineering (ISSN:1751-5254)
- Safety and Health at Work (ISSN:2093-7911)

- Journal of Loss Prevention in the Process Industries (ISSN:0950-4230)
- International Journal of Integrated Supply Management (ISSN:1477-5360)
- International Journal of Supply Chain and Inventory Management (ISSN: 2054-099X)
- Socio-Economic Planning Sciences (ISSN:0038-0121)
- Electronics (ISSN: 2079-9292)
- Applied Sciences (ISSN: 2076-3417)
- Sustainability (ISSN: 2071-1050)
- Energies (ISSN: 1996-1073)
- Sensors (ISSN: 1424-8220)
- International Journal of Environmental Research and Public Health (ISSN: 1660-4601)
- Global Journal of Flexible Systems Management (ISSN: 0972-2696)
- Energy Sources Part A: Recovery, Utilization, and Environmental Effects (ISSN: 1556-7036)
- Sustainable Energy Technologies and Assessments (ISSN: 2213-1388)
- Case Studies in Construction Materials (Online ISSN: 2214-5095)
- Operational Research (ISSN: 1109-2858)

#### **H. Other Activities**

- Participated in the organization of workshops, field training and summer training activities.
- Participated in the design, contracting and installation of a PV system, weather station, and small-scale hybrid PV/Wind energy system for both demonstration and research purposes.
- Participated in the establishment of IE Labs at Fayoum University.
- Participated as an assessor in several student competitions and project fairs.

### **3. Other Related Experiences**

- Participating in the design, contracting and installation of an on-grid hybrid PV/Wind energy system that will be installed at the Regional Training Center of Fayoum University, which is located on the shore of Qaroun's Lake, in progress (2022).
- Participated in the design, contracting and installation of a weather station that was installed at the Regional Training Center of Fayoum University which is located on the shore of Qaroun's Lake, 2021.

- Participated in the design, contracting and installation of a PV system that was installed at the Faculty of Engineering, Fayoum University.
- Participation in the summer training activities for the undergraduate students at the Department of Mechanical Engineering, Faculty of Engineering, Fayoum University, 2016 - Present.
- Coordinated field trainings on "Grid-connected PV systems" for the Mechanical and Electrical Engineering students, Faculty of Engineering, Fayoum University.
- Coordinated an academic training on Industrial Engineering Subjects for the Exchange students from the Arab Universities that have been received at the Mechanical Engineering Department, Faculty of Engineering, Fayoum University, 2019.
- Participated in the evaluation of students' projects presented in ISEF Fayoum 2019 at Fayoum University, 2019.
- Participation in the evaluation of projects submitted to the Technology Transfer Office at Fayoum University (TICO FU) on Science Day during the National Day of Fayoum in 2019.
- Member of the consulting team for qualifying the Gas Cylinder Filling Station in Kom-Oshim (Fayoum Governorate) to meet the requirements of the international standard OHSAS 18001, Quality Control and Assurance Unit for Industrial and Service Organizations (QCAISO), Faculty of Engineering, Fayoum University, 2017.
- Appointed as a member of many technical committees that have been responsible for the selection of suppliers and technical inspections of supplied materials, components, devices, and systems to the department, faculty, and university units.
- Consultant at the "Integrated Solutions for Consultations and Training (ISCT)" office, Cairo, Egypt, 2006-2008.
- Responsible for developing an evaluation tool for the Faculty of Engineering at Fayoum University to analyze the qualitative evaluation of the students' opinion on Exams and Assessment Systems, 2009 – 2010.
- Coordinator of the Department of Industrial Engineering in the Quality Assurance Unit at Faculty of Engineering for developing and managing IE program matrix, program specifications, course specifications, and course reports, 2008 – 2010.

- Participated in developing an evaluation tool for analyzing the questionnaires and surveys conducted by QAAU regarding the educational process at the Faculty of Engineering, Fayoum University, 2008 – 2009.
- Training experience of AutoCAD, Primavera (P6), VB.net, Advanced Excel Skills, and MATLAB at Fayoum University and Syndicate of Egyptian Engineers in Fayoum, 2006-2010.
- Participated in the recruitment committees of the Printing Unit of Fayoum University and Fayoum Drinking Water and Sanitation Company.

## ACTIVITIES IN CURRICULUM DEVELOPMENT & REVISION

- 1- Participated in the development and drafting of the Bylaw and Curriculum of the **BSc Degree Program in Mechanical Engineering (Based on Credit-Hours System)** at Fayoum University which includes three concentrations (Industrial Systems Engineering and Management, Mechanical Design and Production Engineering, and Mechanical Power Engineering). The specific activities that I have been involved in include:
  - Head of the Departmental Committee for Developing the Bylaw and Curriculum of BSc in Mechanical Engineering Program.
  - Coordination between the Departmental Committee and the College Committee.
  - Participated in formulating the program objectives, mission, ILOS, course coding system, graduate prospects, etc.
  - Participated in the selection and development of the university and college requirements courses.
  - Participated in the formulation of the program structure and the study/degree plan of the program.
  - Estimating the required number of contact hours for the courses, credit hours, study workload, and ECTS.
  - Participated in the development of the general discipline requirement courses and their distribution over the study/degree plan.
  - Participated in the proposition and description of several industrial engineering courses to be taught and integrated within this program (e.g., *Operation Research, Simulation of Industrial Systems, Artificial Intelligence Applications in Industrial Engineering*,

*Materials and Inventory Management, Supply Chain Management, Quality Control, Technical and Economic Feasibility Studies, Work Design and Ergonomics, Industrial Project Management, Facilities Planning and Design, Production Planning and Control, Performance Evaluation and Improvement Approaches, Design of Manufacturing Systems, Management Information Systems, Total Quality Management, Lean Manufacturing and Six Sigma).*

- Ensuring that the mechanical engineering program meets the National Academic Reference Standards (NARS).
- Editing and assembling the entire program's bylaw and curriculum.
- Following up on the accreditation process of this program by the Supreme Council of Egyptian Universities. *The Bylaw and Curriculum of the Mechanical Engineering Program has been accredited in August 2023.*

**2-** Participated in the development and drafting of the Bylaw and Curriculum of **the Industrial Engineering (IE) Graduate Programs** at Fayoum University. The specific activities that I was involved in include:

- Head of the IE Committee for Developing the Bylaw and Curriculum of the Industrial Engineering Graduate Programs.
- Contributed to the development of three postgraduate programs (Postgraduate Diploma, MSc, PhD) in **Industrial Systems Engineering and Management**.
- Participated in the development of the degree plans for the postgraduate programs.
- Proposed the postgraduate courses for these programs and participated in the description of the following courses: Industrial Operations Research; *Design, Analysis and Maintenance of Industrial Facilities; Statistical Analysis and Data Representation; Industrial Information Systems; Supply Chain Management; Design and Analysis of Engineering Experiments; Modeling and Simulation of Industrial Systems; Advanced Industrial Operations Research; Artificial Intelligence Applications in Industrial Engineering; Computer Applications in Industrial Engineering; Design and Analysis of Logistics Systems; and Advanced Topics in Mathematical Modeling and Optimization.*
- Estimating the required number of contact hours for the courses, credit hours, study workload, and ECTS.

- Followed up the accreditation process of this program by the Supreme Council of Egyptian Universities. *The Bylaw and Curriculum of the Graduate Programs have been accredited in August 2022.*
- 3- Participated in the development and accreditation of a **Postgraduate Diploma in Quality Systems and Management** at Fayoum University. It was one of the outcomes of the TEMPUS Project, entitled: *Industrial Engineering and Management Sciences – New Postgraduate Programs*, No. (544477-TEMPUS-1-2013-1-EG-TEMPUS-JPCR (2013 – 5033/001-001)). *The Bylaw and Curriculum of this postgraduate program has been accredited in February 2017.*
- 4- Participated in developing a **simulation game** at Sapienza University of Rome (Italy) to support the teaching of operation management subjects and to be used for research purposes as well. **DOI:** [10.1109/WSC.2012.6465028](https://doi.org/10.1109/WSC.2012.6465028)
- 5- Participated in the **assessment and reviewing of the Bylaws and Curricula of the BSc Programs** submitted by the Faculty of Engineering at Sohag University to the Engineering Sectoral Committee at the **Supreme Council of Universities (Egypt)** for accreditation.
- 6- External Reviewer, Ministry of Higher Education, Research & Innovation, Oman, Review and Evaluation of an Academic Program (2024-Present).

## **TRAINING & WORKSHOPS**

### **Center for Excellence in Teaching and Learning (CETL), Sultan Qaboos University:**

1. Teaching Critical Thinking, March 5, 2024.
2. Impact of Generative Artificial Intelligence on Higher Education: Challenges and Opportunities, March 5, 2024.
3. Research-Driven Teaching: Exploring Action Research in Higher Education, November 28, 2024.
4. Beyond the Classroom: Designing Effective Blended Learning Experiences, December 12, 2024.

### **Faculty and Leadership Development Certificates, Fayoum University:**

5. Creative Scientific Thinking, 15-17 September 2020.

6. Combatting Corruption in Higher Education Institutions, 11-13 August 2020.
7. Decision Making and Problem Solving, 11-13 July 2020.
8. Course Description – English Version, 28-30 December 2019.
9. Test Banks and Specifications of Good Test, 26-28 November 2019.
10. Competitive Research Projects, 12-14 October 2019.
11. University Management, 27-29 June 2015.
12. Course Specifications – Arabic Version, 23-25 June 2015.
13. International Publishing of Research – English Version, 20-22 June 2015.
14. Academic Advising and Student Support, 13-15 June 2015.
15. Managing the Quality of Educational Process, 30 May – 01 June/2015.
16. Strategic Planning, 26-28 May 2015.
17. Exams and Students Evaluation Systems, 22-24 May 2010.
18. Use of Technology in Teaching, 20-22 February 2010.
19. Research Team Management, 16-18 February 2010.
20. Communication Skills, 13-15 February 2010.
21. International Publishing of Scientific Research - Arabic Version, 6-8 February 2010.
22. Managing Time and Meetings, 29-31 January 2010.

#### **Other training certificates:**

1. **Energy Management Systems and ISO 50001-2018 Within the Context of Governmental Excellence**, Delivered by National Quality Institute & NI Consulting Academy, December 2022.
2. **Innovation Management Systems and ISO 56002:2019 Within the Context of Governmental Excellence**, Delivered by National Quality Institute & NI Consulting Academy, August 2022.
3. **Governance and ISO 37000:2021 Within the Context of Governmental Excellence**, Delivered by National Quality Institute & NI Consulting Academy, July 2022.
4. **Quality Management System and ISO 9001:2015 Within the Context of Governmental Excellence**, Delivered by National Quality Institute & NI Consulting Academy, May 2022.

#### **Workshops Participation**



1. Participated in organizing a workshop on “**Advances in Quality Systems and Management**” which was held at Fayoum University in May 2016 within the activities of the “**Industrial Engineering and Management Sciences - New Postgraduate Programs**”, a funded project by the TEMPUS Program (544477-TEMPUS-1-2013-1 -EG-TEMPUS-JPCR).
2. Participated in a workshop organized by the **Arab Academy for Science and Technology**, within the activities of the project "**Industrial Engineering and Administrative Sciences - New Postgraduate Programs**", in which a professor from Nottingham University has presented the modern teaching methods of some courses such as Operations Strategy, February 2016.
3. Participated in the workshops that were held within the activities of the project "**Industrial Engineering and Management Sciences - New Postgraduate Programs**" at **Otto von Guericke University** and **Clausthal University of Technology**, Germany, August 2017.
4. Participated in the closing meeting of the project "**Industrial Engineering and Management Sciences - New Postgraduate Programs**" at the University of Oviedo, Spain, November 2017.
5. Participated in **organizing** a workshop on "**Smart Grids and Energy Management Systems**" within the activities of the research project "**Assessing the Potential Benefits of Smart Grid on Energy Management Systems at Distribution Side in Egypt: A Prototype**", Faculty of Engineering, Fayoum University, February 3, 2019.
6. Participated in a workshop within the activities of the research project “**Optimal design of hybrid renewable energy systems for tourism facilities in the Fayoum Governorate**”, at Imperial College London (United Kingdom), January 2020.
7. Participated in a workshop organized by the British Council in Cairo on "**Science and Research Impact Event: Communicating findings from Newton Mosharafa Fund Research**", Cairo, January 28, 2020.
8. Participated in a webinar on "**Newton Fund Impact Scheme**", organized by the British Council in Cairo, June 2020.
9. Participated in a workshop on "**Sustainable Value Chains in the Bakery Industry**" within the activities of the European Funded Project **ER2Food**, Fayoum, July 25, 2022. (<https://www.er2food.org/>)

10. Participated in **organizing** a workshop on "**Renewable Energy Applications and Climate Change: Prospects and Barriers**" within the activities of the research project " **Optimal Design of Hybrid Renewable Energy Systems for Tourism Facilities in Fayoum Governorate**", Faculty of Engineering, Fayoum University, October 9, 2022.
11. Participated as a speaker in a seminar organized by Future Institute of Engineering in Fayoum on "**Renewable Energy, Climate and Environment**", Fayoum, November 30, 2022.
12. Participated in a workshop on "**SciVal for SQU**", organized by SQU Library and ELSEVIER, Sultan Qaboos University, Thursday 12 October 2023.
13. Participated in many workshops organized by the project management unit at Fayoum University on "**How to apply for ERASMUS PLUS projects**", Fayoum University.
14. Participated in many workshops organized by the Faculty of Engineering, Fayoum University on crisis and risk management, first aid, occupational safety, and health systems etc.

#### **Undergraduate Internships and Industrial Visits**

- Internship at Egyptian Military Factory No.54, Cairo (Egypt), 4 Weeks, Summer 2005.
- Internship at Egyptian Iron and Steel Corporation, Cairo (Egypt), 4 Weeks, Summer 2004.
- Internship at El-Nasr Automotive Manufacturing Company, Cairo (Egypt), 4 Weeks, Summer 2003.
- Industrial visit to El-Nasr for Intermediate Chemicals, Fayoum (Egypt), 2008.
- Industrial visit to Catar Pillar (CAT), Alexandria (Egypt), 2006.
- Industrial visit to El-Nasr for Castings Foundry, Alexandria (Egypt), 2006.
- Industrial visit to EMISAL Company for Salts and Minerals, Fayoum (Egypt), 2005.
- Industrial visit to Alexandria Shipyard, Alexandria (Egypt), 2004.
- Industrial visit to Portland Cement - Beni-Sweif Company, Beni-Sweif (Egypt), 2003.

#### **Conferences Participation**

1. Participated in the **2<sup>nd</sup> GCC International Conference on "Industrial Engineering and Operations Management, December 1-3, 2024"**, 1-3/12/2024, Muscat, Oman. Under my supervision with Dr. Nasr Al Hinai, a team of undergraduate students achieved the **First Place** in the **Simulation Competition**.

2. Participated in the **6<sup>th</sup> European Conference on “Industrial Engineering and Operations Management”**, 18-20/07/2023, Lisbon, Portugal. Under my supervision, a team of undergraduate students achieved the third place in the **Simulation Competition**.
3. Participated in the **4<sup>th</sup> European Conference on “Industrial Engineering and Operations Management”**, 2-5/8/2021, Rome, Italy. A paper that I co-author was presented in this conference.
4. Participated in the **Second International Scientific Conference of Faculty of Engineering of Fayoum University on “Construction, Energy and Urbanism: Current Challenges and Future Solutions”**, Fayoum, 25-26 February 2018. A paper that I co-author was presented in this conference.
5. Attended the **First International Joint Symposia on “Product Development and Innovation and Industrial Systems and Operations Management”**, Ain Shams University, Cairo, 3-5 May 2016.
6. Presented two papers in the **Winter Simulation Conference 2012 (WSC’12)**, Berlin (Germany), 9-12/12/2012
7. Presented a paper in the **17<sup>th</sup> International Symposium on Inventories**, Budapest (Hungary), 20-24/08/2012.
8. Presented a paper in the **Seventeenth International Working Seminar on “Production Economics”**, Innsbruck (Austria), 20-24/02/2012.
9. Presented a paper in the **8<sup>th</sup> Conference on “Production Engineering and Design for Development (PEDD8)”**, Faculty of Engineering, Ain Shams University, Cairo, 9-10/03/2010.
10. Presented a paper in the **44<sup>th</sup> Annual Conference on “Statistics, Computer Science and Operation Research”**, Institute of Statistical Studies and Research (ISSR), Cairo University, Giza, 7-10/2009.

## **SOCIETY MEMBERSHIP**

1. International Association of Engineers (IAENG)
2. Syndicate of Egyptian Engineers (Egypt)
3. The Federation of Arab Engineers
4. International Society for Inventory Research (Hungary, 2012-2013)

## AWARDS & SCHOLARSHIPS

- **Fayoum University Award for Excellence in Scientific Research**, March 2023.
- Faculty of Engineering Nominee for Fayoum University Award for Excellence in Scientific Research, October 2022. (Selected by the Faculty of Engineering's Council)
- Fayoum University Encouragement Award for Excellence in **Promotion to the Academic Rank of Associate Professor**, March 2022.
- Faculty of Engineering Award for Excellence in **Promotion to the Academic Rank of Associate Professor**, Fayoum University, 2021.
- Fayoum University Award for Excellence in **International Scientific Publishing**, 2021.
- Fayoum University Award for Excellence in **International Scientific Publishing**, 2020.
- Fayoum University Award for Excellence in **International Scientific Publishing**, 2019.
- Fayoum University Award for Excellence in **International Scientific Publishing**, 2018.
- Fayoum University Award for Excellence in **International Scientific Publishing**, 2017.
- Fayoum University Award for Excellence in **International Scientific Publishing**, 2016.
- Fayoum University Award for Excellence in **International Scientific Publishing**, 2015.
- Fayoum University Award for Excellence in **International Scientific Publishing**, 2014.
- A **Complete PhD Fellowship** from the University of Rome "La Sapienza", 2010-2014.
- A **Postdoc Fellowship** at the Department of Mechanical and Aerospace Engineering, University of Rome "La Sapienza", 2014-2015.
- **Excellence Award for Undergraduate Students**, Faculty of Engineering, Fayoum University, from 2002/2003-2005/2006.
- Under my supervision in collaboration with Dr. Nasr Al Hinai, a team of undergraduate students achieved the **First Place** in the Simulation Competition held during the **2<sup>nd</sup> GCC International Conference on "Industrial Engineering and Operations Management, December 1-3, 2024"**, 1-3/12/2024, Muscat, Oman.
- Under my supervision, a team of undergraduate students achieved the **Third Place** in the Simulation Competition held during the **6<sup>th</sup> European Conference on Industrial Engineering and Operations Management in Lisbon**, Portugal, July 18-20, 2023.
- The following paper has been chosen by the journal of Energies as a candidate for the **Energies 2021 Best Paper Award**:

*Francesco Calise, Francesco L Cappiello, Maria Vicidomini, Jian Song, Antonio M Pantaleo, Suzan Abdelhady, Ahmed Shaban, and Christos N Markides. "Energy and Economic Assessment of Energy Efficiency Options for Energy Districts: Case Studies in Italy and Egypt." Energies, February 2021, 14(4), p.1012. DOI: 10.3390/en14041012*

- Pre-selected Expert for the Capacity Building in Higher Education (CBHE) evaluation exercise in 2023, European Commission, European Education and Culture Executive Agency (EACEA), December 2022. A formal decision will be taken by February 2023.

## POSTDOCTORAL FELLOWSHIP & INTERNATIONAL VISITS

- A **Postdoc Fellowship** at the Department of Mechanical and Aerospace Engineering, University of Rome "La Sapienza", 2014-2015.
- Several **academic and research international visits** have been conducted to some European universities (**Otto von Guericke University - Germany, Clausthal University of Technology – Germany, University of Oviedo – Spain, Imperial College London - UK**) within the activities of research and capacity building projects that I have been involved in it.

## PUBLICATIONS LIST

### A. Journal Publications

1. **Ahmed Shaban**, Mohamed Salhen, Mohamed A. Shalaby, and Tamer F. Abdelmaguid. "Optimal household appliances scheduling for smart energy management considering inclining block rate tariff and net-metering system." *Computers & Industrial Engineering* (2024): 110073.
2. Suzan Abdelhady, and **Ahmed Shaban**. "A Simulation Modeling Approach for the Techno-Economic Analysis of the Integration of Electric Vehicle Charging Stations and Hybrid Renewable Energy Systems in Tourism Districts." *Applied Sciences* 14, no. 11 (2024): 4525.
3. **Ahmed Shaban**, Fatma-Elzahraa Zaki, Islam H. Afefy, Giulio Di Gravio, Andrea Falegnami, and Riccardo Patriarca. "An Optimization Model for the Design of a Sustainable Municipal Solid Waste Management System." *Sustainability*, May 2022, 14(10), p.6345. **DOI: 10.3390/su14106345**
4. **Ahmed Shaban**, Ahmed Abdelwahed, Giulio Di Gravio, Islam H. Afefy, and Riccardo Patriarca. "A systems-theoretic hazard analysis for safety-critical medical gas pipeline and

oxygen supply systems.” *Journal of Loss Prevention in the Process Industries*, July 2022, 77C, 104782. **DOI:** [10.1016/j.jlp.2022.104782](https://doi.org/10.1016/j.jlp.2022.104782)

5. **Ahmed Shaban**, George Ayad, and Neamat G. S. Ahmed. “Integration of Simulation Modelling and Lean Management to Improve Patient Flow at Outpatient Clinics.” *International Journal of Productivity and Quality Management*, August 2022, 36(3), 439-458. **DOI:** [10.1504/IJPQM.2021.10037227](https://doi.org/10.1504/IJPQM.2021.10037227)
6. **Ahmed Shaban**, Hagag Maher, Mahmoud Elbayoumi, and Suzan Abdelhady. “A cuckoo load scheduling optimization approach for smart energy management.” *Energy Reports*, November 2021, 7, 4705-4721. **DOI:** [10.1016/j.egyr.2021.06.099](https://doi.org/10.1016/j.egyr.2021.06.099)
7. Suzan Abdelhady, Mohamed A. Shalaby, and **Ahmed Shaban**. “Techno-Economic Analysis for the Optimal Design of a National Network of Agro-Energy Biomass Power Plants in Egypt.” *Energies*, May 2021, 14(11), p.3063. **DOI:** [10.3390/en14113063](https://doi.org/10.3390/en14113063)
8. Francesco Calise, Francesco L Cappiello, Maria Vicidomini, Jian Song, Antonio M Pantaleo, Suzan Abdelhady, **Ahmed Shaban**, and Christos N Markides. “Energy and Economic Assessment of Energy Efficiency Options for Energy Districts: Case Studies in Italy and Egypt.” *Energies*, February 2021, 14(4), p.1012. **DOI:** [10.3390/en14041012](https://doi.org/10.3390/en14041012)
9. **Ahmed Shaban**, Francesco Costantino, Giulio Di Gravio, and Massimo Tronci. “Coordinating of multi-echelon supply chains through the generalized (R, S) policy.” *SIMULATION*, 96 (9), September 2020, 767-778. **DOI:** [10.1177/0037549720920708](https://doi.org/10.1177/0037549720920708)
10. **Ahmed Shaban**, Mohamed A. Shalaby, Giulio Di Gravio and Riccardo Patriarca. “Analysis of variance amplification and service level in a supply chain with correlated demand.” *Sustainability*, 12(16), August 2020, 6470. **DOI:** [10.3390/su12166470](https://doi.org/10.3390/su12166470)
11. Suzan Abdelhady, Ahmed Osama, **Ahmed Shaban**, and Mahmoud Elbayoumi. “A real-time optimization of reactive power for an intelligent system using genetic algorithm.” *IEEE Access*, 8, January 2020, 11991-12000. **DOI:** [10.1109/ACCESS.2020.2965321](https://doi.org/10.1109/ACCESS.2020.2965321)
12. **Ahmed Shaban**, Francesco Costantino, Giulio Di Gravio, and Massimo Tronci. “A new efficient collaboration model for multi-echelon supply chains.” *Expert Systems with Applications*, 128, August 2019, 54-66. **DOI:** [10.1016/j.eswa.2019.03.026](https://doi.org/10.1016/j.eswa.2019.03.026)

13. **Ahmed Shaban**, and Mohamed A. Shalaby. “Modeling and optimizing of variance amplification in supply chain using response surface methodology.” *Computers & Industrial Engineering*, 120, June 2018, 392-400. **DOI:** [10.1016/j.cie.2018.04.057](https://doi.org/10.1016/j.cie.2018.04.057)
14. Suzan Abdelhady, Domenico Borello, and **Ahmed Shaban**. “Techno-economic assessment of biomass power plant fed with rice straw: Sensitivity and parametric analysis of the performance and the LCOE.” *Renewable Energy*, 115, January 2018, 1026-1034. **DOI:** [10.1016/j.renene.2017.09.040](https://doi.org/10.1016/j.renene.2017.09.040)
15. Suzan Abdelhady, Domenico Borello, and **Ahmed Shaban**. “Assessment of levelized cost of electricity of offshore wind energy in Egypt.” *Wind Engineering*, 41(3), June 2017, 160-173. **DOI:** [10.1177/0309524X17706846](https://doi.org/10.1177/0309524X17706846)
16. Francesco Costantino, Giulio Di Gravio, **Ahmed Shaban**, and Massimo Tronci. “Smoothing inventory decision rules in seasonal supply chains.” *Expert Systems with Applications*, 44, February 2016, 304-319. **DOI:** [10.1016/j.eswa.2015.08.052](https://doi.org/10.1016/j.eswa.2015.08.052)
17. **Ahmed Shaban**, Francesco Costantino, Giulio Di Gravio, and Massimo Tronci. “Managing the bullwhip effect in multi-echelon supply chains.” *Industrial Engineering & Management*, 4(2), May 2015, e128. **DOI:** [10.4172/2169-0316.1000e128](https://doi.org/10.4172/2169-0316.1000e128)
18. Francesco Costantino, Giulio Di Gravio, **Ahmed Shaban**, and Massimo Tronci. “The impact of information sharing on ordering policies to improve supply chain performances.” *Computers & Industrial Engineering*, 82, April 2015, 127-142. **DOI:** [10.1016/j.cie.2015.01.024](https://doi.org/10.1016/j.cie.2015.01.024)
19. Francesco Costantino, Giulio Di Gravio, **Ahmed Shaban**, and Massimo Tronci. “A real-time SPC inventory replenishment system to improve supply chain performances.” *Expert Systems with Applications*, 42(3), February 2015, 1665–1683. **DOI:** [10.1016/j.eswa.2014.09.028](https://doi.org/10.1016/j.eswa.2014.09.028)
20. Francesco Costantino, Giulio Di Gravio, **Ahmed Shaban**, and Massimo Tronci. “SPC forecasting system to mitigate the bullwhip effect and inventory variance in supply chains.” *Expert Systems with Applications*, 42(3), February 2015, 1773–1787. **DOI:** [10.1016/j.eswa.2014.09.039](https://doi.org/10.1016/j.eswa.2014.09.039)

21. Francesco Costantino, Giulio Di Gravio, **Ahmed Shaban**, and Massimo Tronci. “The impact of information sharing and inventory control coordination on supply chain performances.” *Computers & Industrial Engineering*, 76, October 2014, 292–306. **DOI:** [10.1016/j.cie.2014.08.006](https://doi.org/10.1016/j.cie.2014.08.006)
22. Francesco Costantino, Giulio Di Gravio, **Ahmed Shaban**, and Massimo Tronci. “Inventory control system based on Control Charts to improve supply chain performances.” *International Journal of Simulation Modelling*, 13(3), August 2014, 263-275. **DOI:** [10.2507/IJSIMM13\(3\)1.263](https://doi.org/10.2507/IJSIMM13(3)1.263)
23. Francesco Costantino, Giulio Di Gravio, **Ahmed Shaban**, and Massimo Tronci. “Replenishment policy based on information sharing to mitigate the severity of supply chain disruption.” *International Journal of Logistics Systems and Management*, 18(1), June 2014, 3-23. **DOI:** [10.1504/IJLSM.2014.062119](https://doi.org/10.1504/IJLSM.2014.062119)
24. Francesco Costantino, Giulio Di Gravio, and **Ahmed Shaban**. “Multi-criteria logistics distribution network design for mass customization.” *International Journal of Applied Decision Sciences*, 7(2), April 2014, 151–167. DOI: [10.1504/IJADS.2014.060328](https://doi.org/10.1504/IJADS.2014.060328)
25. Francesco Costantino, Giulio Di Gravio, **Ahmed Shaban**, and Massimo Tronci. “SPC-based inventory control policy to improve supply chain dynamics.” *International Journal of Engineering and Technology*, 6(1), February-March 2014, 418-426. URL: <http://www.enggjournals.com/ijet/docs/IJET14-06-01-233.pdf>, ISSN Portal: <https://portal.issn.org/resource/ISSN/2319-8613>
26. Francesco Costantino, Giulio Di Gravio, **Ahmed Shaban**, and Massimo Tronci. “Exploring the bullwhip effect and inventory stability in a seasonal supply chain.” *International Journal of Engineering Business Management*, 5, August 2013, 5-23. **DOI:** [10.5772/56833](https://doi.org/10.5772/56833)
27. Francesco Costantino, Giulio Di Gravio, **Ahmed Shaban**, and Massimo Tronci. “Information sharing policies based on tokens to improve supply chain performances.” *International Journal of Logistics Systems and Management*, 14(2), January 2013, 133-160. **DOI:** [10.1504/IJLSM.2013.051336](https://doi.org/10.1504/IJLSM.2013.051336)



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