LAWRENCE ALFANDI

EDUCATION

- **Ph.D.,** Industrial and Systems Engineering, Binghamton University, Binghamton, NY, December 2011, [GPA: 3.90/4.00]
  - **Doctoral Research:** A Novel Approach Using Lean and Simulation Modeling for Effective Green Transformation
    - Evaluated the available approaches in assessing the "greenness" of supply chains
    - Developed greenness assessment of supply chain practices; define improvement opportunities, and bridging gaps plans
    - Developed methodology for continuous "Lean and green" improvement in manufacturing processes; focus on energy consumption reduction in manufacturing processes
    - Demonstrated the concept in IBM's Integrated Supply Chain processes
- **M.S.,** Industrial Engineering / Management, College of Engineering, University of Jordan, Amman, Jordan, September 2002
- **B.S.,** Industrial Engineering, College of Engineering, University of Jordan, Amman, Jordan, June 2000

WORK EXPERIENCE

Oct 22 – Present   **Assistant Professor,** Jordan University of Science and Technology, Industrial Engineering Department, Jordan.

Dec 17 – Aug 22   **Associate Professor,** American University of the Middle East, Industrial Engineering Department, Egaila, Kuwait. ABET-accredited program. Taught the following courses:

- IE530- Industrial Applications of Statistics (DOE)
- MGMT 405 Six Sigma and Quality Management
- IEG 320 Production Planning and Control
- IE 383 Integrated Production Systems I
- IE335 Operations Research - Optimization
- IEG 330 Supply Chains and Logistics Engineering
- IE 580 Systems Simulation
- IEG 230 Advanced System Simulation
- MGT 400 Projects Management
- IEG 240 Quality, Reliability, and Maintenance
- STA 220 Probability and Statistics
- IEG 200 Lean Operations Design
- IEG 370 Current Topics in Industrial Engineering III

Jan 12 – Nov 17   **Assistant Professor,** American University of the Middle East, Industrial Engineering Department, Egaila, Kuwait.

Fall 13 – Fall 16   **Head of Industrial Engineering Department,** American University of the Middle East, Industrial Engineering Department, Egaila, Kuwait.

- Led the Industrial engineering department's transition to an ABET-accredited system.
- Led final year graduation projects and capstone projects courses including planed for the main research directions, training supervisors and second readers, preparing and delivering seminars, inviting guest lecturers, managing Moodle pages, and drawing course policies.
- Designed and introduced four new laboratories in the IE department.
- Equipped IE laboratories with state-of-the-art software.

- Engaged in the recruitment process through resumes revision and personal interviews.
- Organized the department's participation in national, regional, and international conferences and competitions.
- Served as a committee member in the admission committee.

June 08 – Oct 11   **Graduate Research Associate,** Binghamton University/ IBM Corporation – Integrated Supply Chain and Operations, NY, USA.

- **Simulation Modeling of Server Fabrication Process**
  - Developed simulation model for strategic decision making
  - Determined 'optimal' number of server fabrication testing cells. Developed batching rule to reduce energy consumption and cooling water
- **Inventory System Design**
  - Developed simulation model to measure customer service level
  - Used simulation to select distribution facility location
  - Designed inventory Kanban system for a service center
- **Capacity Planning and Layout Configuration**
  - Developed distributed simulation framework for performing "what-if" analysis – capacity planning and costs analysis for new manufacturing site

- **Using Lean and Optimization Techniques to Determine Line-Side Stock Area Layout**
  - Developed framework that dynamically allocates commodities to line-side stock in a high-end server assembly
  - Developed an integer optimization model that determines the optimal space assigned to commodities in different storing areas
- **Determine Inventory Release Times for Pull System**
  - Scheduling order release to the warehouse and the manufacturing departments using simulation in a high-end server environment
  - Minimized inventory quantities and waiting time in the production side stock areas while fulfilling customers' orders on time
  - Achieved 47% savings in Kanban inventory level and 51% cycle time reduction
- **Microscopic Inspection using Digital Human Modeling**
  - Ergonomically redesigned microscopic inspection workstation using digital human modeling (JACK® software)
  - Reduced upper-limbs work-related musculoskeletal disorders among workstation operators using various ergonomic assessment tools
- **"Standard Work" Projects Prioritization**
  - Developed a new prioritization methodology for standard work project based on variation in cycle time, workmanship defects, and TAKT time
  - Prioritized 11 manufacturing areas in accordance to excepted improvement opportunity from standard work
- **"Standard Work" Project for Lean Silver Certification: Memories Kitting and Connectors Inspect**
  - Applied silver Lean techniques, such as root cause analysis, 5S, VSM, and TAKT time
  - Reduced cycle time by 25.3% and reduced defects caused by improper tool handling

May 05 – May 06   **Production & Maintenance Manager**, Middle East Waste Management Co., Jeddah – Saudi Arabia
    Plastic recycling factory
- Organized the resources and services necessary for production including production scheduling, staffing, procuring and maintaining equipment, overseeing quality and inventory control, and coordinating production activities among departments
- Laid out the production schedule so that production quotas are met while considering the financial and time constraints
- Maintained records, prepared reports, and composed correspondence relative to work issues

- Monitored product quality by inspecting samples of finished goods, recording any defects to create statistical analyses for quality control purposes
- Developed and maintained an inventory system of spare parts, repair parts, and materials

Aug 04 – May 05   **Production & Quality Manager**, Hussein Jordan for Cloth Manufacturing, Irbid, Jordan
- Controlled the production planning and scheduling
- Designed and implemented quality control systems
- Manpower management (number of workers, labor cost), improve process and labor efficiency, prepared standard time and incentive system

July 02 – Mar 04   **Production Line Assistant Manager**, Century Tailoring Co, Irbid, Jordan
Worked in a formal suits production line with 250 workers, performed line balancing to obtain 1400 suits daily utilizing simulation (Arena® software), conducted time and motion studies, daily production scheduling, supervised inspection of products. Prepared production reports. Managed production employees

Jan 02 – June 02   **Industrial Engineer,** Arab Engineering Industries Co, Irbid, Jordan
Scheduled and monitored work in the molding and finishing Department. Standard work/ Time and motion studies.

TEACHING ASSISTANT EXPERIENCE

Aug 07 – May 08   **Teaching Assistant,** Binghamton University, NY, USA.
SSIE 505 Probability & Statistics and ISE 231 Human Factors

Sep 00 – June 02   **Teaching Assistant,** University of Jordan, Amman, Jordan
Human Factors Lab, Measurement Labs, Vibration Lab, and Workshop.

PUBLICATIONS

- Khalaf, A., Elsamad, B., Mohammad, D., Al-sanad, F., Abdalaziz, K., Al-Fandi, L., (2020), "Study of Text Neck Syndrome Among Smartphone Users Via JACK Software" Proceedings of the 10th Annual International Conference on Industrial Engineering and Operations Management, March 10-12, 2020, Dubai, UAE.

- Al-Fandi, L., Obaid, A., Alfailakawi, B., Alsubaiei, H., & Khudhair, S., (2019). "A Simulation Study to Determine the Parameters of Medicine Inventory Policy". Proceedings of the Estonian Academy of Sciences Journal, 68(4). https://doi.org/10.3176/proc.2019.4.05

- Al-Zain, Y., Al-Fandi, L., Arafeh, M., Salem, S., Al-Quraini, S., Al-Yaseen, A., and Abu Taleb, D., (2019), "Implementing Lean Six Sigma in a Kuwaiti Private Hospital" International Journal of Health Care Quality Assurance, 32 (7).

- Al-Munayes, D., Al-Mahdi, F., Bahman, S., Sadeq, S., Bojbara. S., Al-Fandi, L., (2018), "Reduction of Patient Prolonged Length of Stay in the ED using Lean Six Sigma" 3rd North American IEOM Conference September 27-29, 2018, Washington, DC, USA.

- Aqlan, F., and Al-Fandi, L. (2018), "Prioritizing Process Improvement Initiatives in Manufacturing Environments" International Journal of Production Economics, doi: 10.1016/j.ijpe.2017.12.004.

- Aqlan, F., Ramakrishnan, S., Al-Fandi, L., and Saha, C., (2017) "A Framework for Selecting and Evaluating Process Improvement Projects Using Simulation and Optimization Techniques" Winter Simulation Conference, 2017.

- Al-Fandi, L. & Aqlan, F., (2017). Analysis of End-of-Quarter Inventory in Hybrid Production Environments Using Simulation. Accepted to be presented at the 7th IESM Conference, October 11 – 13, 2017, Saarbrücken, Germany.

- Al-Fandi, L., Yassin, A., Abdulaziz, M., (2017). Analyzing Risk Factors Associated with Bariatric Patients Handling using JACK Software. International Conference on Industrial Engineering and Operations Management, Rabat, Morocco, April 11-13, 20176. Retrieved from http://ieomsociety.org/ieom2017/papers/374.pdf

- Al-Fandi, L. (2016). Application of lean six-sigma methodology in an outpatient department in a private hospital in Kuwait. Presented in IISE Annual Conference and EXPO ISERC 2016. Anaheim, CA. Retrieved from https://www.xcdsystem.com/iise/program/Wg1pquW/index.cfm?pgid=557&speakerid=220609

- Al-Fandi, L. & Aqlan, F. (2014). Using simulation to determine the batch size for I/O drawer test process in a high-end server manufacturing environment. In international FAIM Conference 24th: 2014 (pp. 1017-1022). San Antonio, Texas: DEStech Publications, Inc. Retrieved from http://digital.utsa.edu/cdm/ref/collection/p15125coll7/id/7264

- Al-Fandi, L., Lam, S. S., & Ramakrishnan, S. (2011). A framework to reduce problem complexity using lean concepts with simulation. *IIE Annual Conference. Proceedings*, 1-7. Retrieved from http://search.proquest.com/docview/1190410747?accountid=38803

- Al-Fandi, L., Lam, S. S., & Ramakrishnan, S. (2010). A simulation approach to determine inventory release times for a pull system. *IIE Annual Conference. Proceedings*, 1-6. Retrieved from http://search.proquest.com/docview/734584546?accountid=38803

- Chen, J., Lam, S. S., Al-Fandi, L., & Ramakrishnan, S. (2010). A fuzzy optimization approach for product configuration in reverse logistics. *IIE Annual Conference. Proceedings,* 1-6. Retrieved from http://search.proquest.com/docview/734585182?accountid=38803

- Al-Fandi, L., Chen, J., Lam, S. S., & Ramakrishnan, S. (2010). Using lean and optimization techniques to determine line-side stock Kanban limits. *IIE Annual Conference. Proceedings,* 1-6. Retrieved from http://search.proquest.com/docview/734585039?accountid=38803

- Al-Fandi, L., Mabe, N., & Khasawneh, M. T. (2009). The impact of threat type and image color on baggage screening performance: A preliminary investigation. In *Proceedings of the 10th Asia Pacific Industrial Engineering & Management Systems (APIEMS) Conference. Dec* (Vol. 14, p. 16).

- Ramakrishnan, S., Al-Fandi L., Chen, J. (2009). A simulation-based framework to study the impact of lean techniques on green supply chains, *Proceeding of ASEM Annual Conference (ASEM 30th).* Springfield, Missouri, USA.

AWARDS AND HONORS
- 2020 IEOM Undergraduate Student Paper Competition Award, Dubai, UAE.
- 2018 IEOM Undergraduate Student Paper Competition Award, Washington, DC, USA.
- 2016 ISERC best track paper for Continuous Improvement (Lean & Six Sigma), Anaheim, CA, USA.
- Award from Dar Al-Shifa Hospital for implementing six Sigma project.
- Best of Manufacturing/ISC Award from IBM company for Standard Work projects Prioritization 2009
- Member, Alpha Pi Mu (Industrial Engineering Honor Society), Inducted in May 2008

PROFESSIONAL DEVELOPMENT
- ABET certificate, AUM, Kuwait. 24-25 September 2016
- Institute for the Development of Excellence in Assessment Leadership (IDEAL), ABET headquarter, Baltimore, MD, USA. 3-6 August 2015.
- Certificate of Lean Six Sigma, Green Belt: 80 hours of classroom and exam, IBM Poughkeepsie, NY, August 2011
- Certificate of IBM Path Forward to Business Transformation Lean Silver: 100 hours of classroom, exam, and applied learning, IBM Poughkeepsie, NY, December 2009

SOFTWARE SKILLS
- **Languages**: Visual Basic, VBA, Fortran
- **Databases**: SQL, MS Access
- **Simulation**: Arena 15.0
- **Statistical Packages**: MINITAB , SPSS, SAS, ExpertFit, EasyFit
- **Office Productivity**: MS Project, MS Office, MS Visio, Lotus SmartSuite, Lotus Notes, SmartDraw
- **Application Software**: BRIO
- Course Management: Moodle, Blackboard
- **Digital Human Modeling:** JACK® software

PROFESSIONAL SOCIETY MEMBERSHIPS
Institute of Industrial and Systems Engineers (IISE), Jordan Engineers Association (JEA).

REFERENCES

Ahmed Elsafty, Ph.D.
Ex-Provost,
American University of the Middle East
Egaila, Kuwait 54200
Phone: +20106009749
Email: aelsafty@aast.edu

Warren Boldrin
Manager, ISC Operations, High-End Order Fulfillment & Services, Poughkeepsie, NY 12601
Phone :(845) 433-2914
Email: boldrin@us.ibm.com

Sreekanth Ramakrishnan, Ph.D
Advisory Engineer/Scientist, Learning Specialist
Path Forward to Business Transformation, IBM Center for Learning and Development
Phone: +1 (845) 337-2527
Email: sreeekan@us.ibm.com

Krishnaswami Srihari, Ph.D.
Distinguished Professor & Dean, Watson School of Engineering and Applied Science
Director, Watson Institute for Systems Excellence (WISE)
Binghamton University, State University of New York, Binghamton, NY 13902
Phone: +1 (607) 777 4410, Fax: +1 (607) 777 5194
Email: srihari@binghamton.edu

Mohammad T. Khasawneh, Ph.D.
Professor and Department Head, Systems Science and Industrial Engineering
Assistant Director, Watson Institute for Systems Excellence
Binghamton University, State University of New York, Binghamton, NY 13902
 Phone: +1 (607) 777- 4408, Fax: +1 (607) 777- 4094
Email: mkhasawn@binghamton.edu