

# MAHMOUD EL BANNA

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## Objective:

Eager to start a challenging career with a company or university of progressive growth, and superior reputation where I can utilize my education, experience, and skills to help the company grows and succeeds.

## Employment History:

### **German Jordanian University**

Feb., 2011-Present

#### **Assistant Professor:**

Bachelor Courses: Operations Research, Supply Chain Management, Product Development and Automation

### **American University of Middle East (AUM) , Kuwait**

Feb., 2010 –Feb., 2011

#### **Assistant Professor :**

- Bachelor Courses: Statistics I & II, Computer Programming for Engineering (Matlab), Numerical Analysis, Operations Research I & II, Reliability Engineering, Production Planning, and Simulation.

### **University of Jordan**

**Amman, Jordan**

Sept., 2006- Jan., 2010

#### **Assistant Professor :**

- Master Courses : Advanced Engineering Statistics, Design of Experiments,
- Bachelor Courses: Six Sigma, Statistics II, Statistics I, Quality control

### **Welding Technology Corporation**

**Farmington Hills, MI, USA**

February 2004 – Sept., 2006

#### **Research Engineer** (*Responsible for Ford Motor Company Projects*)

##### **Intelligent Resistance Welding project**

- Develop and implement new algorithms, for enhancing the quality of Resistance Welding process.
- Recommend improvement to working conditions, and the use of equipment to increase efficiency of the Welding process.
- Develop, evaluate, and improve, the Welding testing methods.
- Define/benchmark non destructive Welding testing techniques (quality and quantity) to estimate future Welding requirements and track existing techniques.
- Introduce new technology and new material to improve quality of Welding process.
- Participates in meetings, seminars, and training sessions to keep within the state-of-the-art of the industry

### **Wayne State University**

**Detroit, MI, USA**

October 2004 – February 2006

#### **Research Assistance**

##### Projects:

- Hot Metal Gas Forming, Hydro Forming (HMGF) project.

- Develop; implement methods and procedures for testing and validation of processes and manufacturing systems.
- Test and improve the capability of equipment to achieve and maintain specified performance criteria.
- Recommend improvement to working conditions, and the use of equipment to increase efficiency of the manufacturing operation.
- Develop, evaluate, improve, and troubleshoot manufacturing methods.
- Define/benchmark manufacturing processes (quality and quantity) to estimate future manufacturing requirements and track existing production.
- Implement and validate new technology and new material to improve quality of manufacturing processes.
- Participate in meetings, seminars, and training sessions to keep within the state-of-the-art of the industry.

### **Wayne State University**

**Detroit, MI, USA**

February 2002 – October 2004

## Education, Licenses and Certificates:

**PhD** (March 2006). GPA is 3.8 out of 4.0

Major: Industrial Engineering / Quality

Wayne State University

Detroit, MI , USA

**Master's** (February 2001 / Top 5%)

Major: Industrial Engineering/ Design and Manufacturing

University of Jordan

Amman, Jordan

**Bachelor's** (July 1998 / Top 5%)

Major: Mechanical Engineering / Design

University of Jordan

Amman, Jordan

### **Skills and Abilities:**

Excellent in: Matlab, Minitab, ProModel, TORA, CPLEX, AMPL, AutoCAD, MSOffice... Quality tools such as SPC, Process Optimization and cost reduction. Strong mathematical and analytical capabilities.

### **Publications:**

#### **Patent:**

- Method For Controlling Weld Energy / United States Patent 20070119823, 2007

#### **Book Chapter:**

- El-Banna, M., Filev, D., and Chinnam, R.B., "Automotive Manufacturing: Intelligent Resistance Welding," Computational Intelligence in Automotive Applications, Edited by Danil Prokhorov, Springer Berlin / Heidelberg, 2008 (ISBN-13: 978-3-540-79256-7; pp. 219-235).

#### **Published papers:**

- Force Based Weld Quality Monitoring Algorithm /International Journal of Intelligent Systems Technologies and Applications, Vol. 10, No.1, pp 1-14, 2011
- Online Qualitative Nugget Classification by Using Linear Vector Quantization Network for Resistance Spot Welding / International Journal of Advanced Manufacturing Technology, 2008
- A New Approach For Assessing The Wear Resistance Of Soft Ductile Materials / International Symposium on Advanced Materials, ISAM, 2007
- Intelligent Constant Current Control for Resistance Spot Welding / IEEE World Congress on Computation Intelligence 2006, Canada
- Mahalanobis Taguchi System For Feature Extraction and Nugget Quality Classification in Resistance Spot Welding / Sheet Metal Welding Conference XII 2006,USA
- Experiments on The Effect of Zirconium on the fatigue life of Aluminum / Sixth International Conference on Production Engineering & Design for Development- PEDD 6, 2002, Egypt.
- *Tip Dressing Detection by using Hierarchal Fuzzy C-Means Clustering (submitted to journal of Intelligent Manufacturing)*
- *Applying lean Six Sigma Approach in Health Care; Reducing discharge time in Hospitals (submitted to journal of Simulation in Healthcare)*

#### **Papers on Progress:**

- Reducing Orange Live Box installation time by using lean six sigma approach
- New Algorithm for Detecting the Quality of Welding Tips

### **Research Visits:**

- University of Siegen /Germany/ June-Aug. 2008: Optimize Number of Stages of Deep Drawing Process.

**References: Available upon request**

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### **Brief description of current projects:**

1. Applying Lean Six Sigma approaches in Telecommunications industry: The combined effect of Lean and Six Sigma implementation tools in Orange-Jordan Company has led to a reduction in average installation time. These improvements have resulted not only in cost reduction, but also the possibility of presenting these improvement stories to the customer, building the reputation of the company as a leading supplier of Live Box service, and thereby increasing the probability of getting higher volumes of business. This project illustrates the effectiveness of Six Sigma optimizations for nearly any type of process, provided that its goals and techniques of key parameter measurement are defined properly.
2. Reducing discharge time of patients by using Lean Six Sigma Approach: The objective of this work is to minimize the discharge time (for insured patients) to be less than 50 minutes by using six sigma approach, this improvement will also lead to and increase in customer satisfaction, increase the number of admissions and turnover on the rooms, increase hospital profitability. Applying lean Six Sigma approach gives the following results: increase the insured female patients percentage that will have discharge time less than 50 minutes from 29.5% to 93%, increase the insured male patients percentage that will have discharge time less than 50 minutes from 9.0% to 91.3%, and increase the insured pediatrics patients percentage that will have discharge time less than 50 minutes from 29.8% to 52%.