

## Resume

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### Current Position:

Chairman; Associate Professor  
Department of Electrical Engineering-  
University of Jordan.  
Senior Member of IEEE (2004).

### Education:

1996-1999 Ph.D. Electrical Engineering. University of Bremen- Germany.  
1988-1991 M.Sc. Electrical Engineering. Oklahoma State University- USA  
1982-1987 B.Sc. Electrical Engineering. Yarmouk University- Jordan

### Areas of Interest:

Array Processing and Smart Antennas for Mobile Communications. Digital Signal and Image Processing. Neural Networks and Fuzzy Systems. Evolutionary Optimization Techniques.

### Courses Taught:

#### Undergraduate Courses:

Electrical Circuits I; Electrical Circuits II; Signals and Systems; Probability and Random Variables; Digital Signal Processing; Measurement and Instrumentation; Control Systems; Analog Electronics; Digital Electornics; Electromagnetics.

#### Graduate Courses:

Digital Signal Processing and Filtering; Random Variables and Stochastic Processes; Statistical Communication Theory; Linear Systems.

### Experience:

2008-present: Chairman - Department of Electrical Engineering- University of Jordan.  
2007-2008: Sabbatical year at Princess Sumaya University for Technology-Jordan.  
2006-present: Associate Prof.- Department of Electrical Engineering- University of Jordan  
1999-2006: Assistant Prof. -Department of Electrical Engineering- University of Jordan.  
Summer, 2002,  
2004 and 2006 : Visiting Researcher–University of Bremen, Germany.

2003-2004 : Chairman of EE Department- University of Jordan.  
1996-1999 : Research assistant, Department of Automation Technology- University of Bremen.  
10/1995-4/1996: Visiting Researcher–Technical University of Munich (TUM), Germany  
4/1995-9/1995: German language intensive course, Goethe-Institute Bremen- Germany  
1993-1995 : Lecturer, Department of Electrical Engineering- University of Jordan  
1988-1991 : Teaching and research assistant, Department of Electrical and Computer Engineering, Oklahoma State University- USA

#### **Awards:**

German Academic Exchange Service (DAAD) scholarship holder 1995-1999  
Hisham Hijjawi Award for Engineering Sciences 2007.

#### **Short Courses:**

Advanced Process Control at SABIC Training Center , Al-Jubail, Saudia Arabia.  
(6-10/6/2009) and (12-18/11/2009).

#### **Publications:**

#### **Refereed Book Chapters**

- [1] D.I. Abu-Al-Nadi, M.J. Mismar, and T.H. Ismail,” Genetically Evolved Phase-Aggregation Technique for Linear Arrays Control,” *PIER* 43, pp: 287-304,2003.
- [2] J.S.Rahhal, D.I.Abu-Al-Nadi, and M. Hawa," Evolutionary Computation in Coded Communications: An Implementation of Viterbi Algorithm" In *Evolutionary Computation*, edited by Wellington Pinheiro dos Santos, In-Teh, pp: 139-152, 2009.

#### **Refereed Journals**

- [1] D. Abu-Fara, I. Rawabdeh, and D. Abu-Al-Nadi, “ Neural Network Control for Cavity Pressure during Filling and Packing Stages of the Thermoplastics Injection Molding Process,” *J. of Injection Molding Technology*, vol. 5, no.2, pp. 105-119,
- [2] T.H. Ismail, D.I. Abu-Al-Nadi, and M.J. Mismar, “ Phase-Only Control of Antenna Pattern Synthesis of Linear Arrays Using Levenberg-Marquardt Algorithm”, *Electromagnetics*, 24(7) pp: 555-564, 2004.
- [3] D.I. Abu-Al-Nadi, D.I. Abu-Fara, I.Rawabdeh, and R.J. Crawford,” Control of Rotational Molding Using Adaptive Fuzzy Systems”, *Advances in Polymer Technology*, vol. 24, no. 4, pp: 266-277, 2005.
- [4] D.I. Abu-Al-Nadi, T.H. Ismail, and M.J.Mismar,” Interference Suppression by Element position Control of Phased Arrays Using LM Algorithm” *Int. J. of Electronics and Communications (AEÜ)*. Vol. 60, no. 2, pp. 151-158, 2006
- [5] M.J. Mismar, T. H. Ismail, and D. I. Abu-Al-Nadi," Analytical Array Polynomial Method for Linear Antenna Arrays with Phase-Only Control", *Int. J. of Electronics and Communications (AEÜ)*, vol. 61, no.7 pp.485-492, 2007.
- [6] R.T. Al-Zubi, and D.I. Abu-AL-Nadi, “Automated Personal Identification System Based on Human Iris Analysis", *Pattern Analysis and Applications*, vol.10, no.2, pp. 147-164, 2007.

- [7] D.I. Abu-Al-Nadi, and J.S. Rahhal, "A Modified Genetic Algorithm for Training Adaptive Fuzzy Systems" *AutoSoft-Intelligent Automation and Soft Computing*, 14(4), pp. 445-460, 2008
- [8] J.S. Rahhal, and D.I. Abu-Al-Nadi, "A General Configuration Antenna Array for Multi-User System with Genetic and Ant Colony Optimization" *Electromagnetics*, 27(7), pp. 413-426, 2007.
- [9] M.A.Taha, D.I. Abu-Al-Nadi, and T.H. Ismail, "Maximum likelihood estimation of the double-directional parameters in the Multiple-input-multiple-output communication system using the particle swarm optimization", *Electromagnetics*, 28(6), pp. 401-410, 2008.
- [10] J.S. Rahhal, and D.I. Abu-Al-nadi, "Pre-Coding for MIMO Systems in Frequency-Selective Fading Channels," Accepted in *Wireless Pers. Commun.*
- [12] D.I. Abu-Al-Nadi, T.H. Ismail, H. Al-Tous, and M.J. Mismar, "Design of Linear Phased Array for Interference Suppression Using Array Polynomial Method and Particle Swarm Optimization", Accepted in *Wireless Pers. Commun.*

### **Refereed Conferences**

- [1] D. Abu-Al-Nadi, and D. Popovic, "Texture Analysis Using an Adaptive Neuro-Fuzzy Networks and Fractals", The 8<sup>th</sup> IEEE Int. Conf. On Fuzzy Systems, Seoul, Korea, Aug. 22-25, 1999.
- [2] D. Abu-Al-Nadi, and D. Popovic, "Texture Identification Using Adaptive Neuro-Fuzzy Approach", The 14<sup>th</sup> World Congress of IFAC'99, Beijing, China, July 5-9, 1999.
- [3] M.J. Mismar, T.H. Ismail, and D. I. Abu-Al-Nadi, "Interference Suppression Using Phase-Only Controlled Linear Array with Element Failures" The 7<sup>th</sup> International Conference on Intelligent Engineering Systems, INES 2003, Asuit- Egypt, pp 713-716, March 4-6, 2003.
- [4] W. Shadeed, D. Abu-Al-Nadi, and M. Mismar, "Road Traffic Sign Detection in Colored Images", 10<sup>th</sup> IEEE conference on Electronics, Circuits and systems, ICECS2003, Sharjah, UAE, pp:890-893, Dec.14-17, 2003.
- [5] M. Takruri, D. Abu-Al-Nadi, "Fractal Image Compression Using Competitive Neural Network in Frequency Domain", 10<sup>th</sup> IEEE conference on Electronics, Circuits and systems, ICECS2003, Sharjah, UAE, pp:96-99, Dec.14-17, 2003.
- [6] D.I. Abu-Al-Nadi, "Training Feedforward Neural Networks with a Modified Genetic Algorithm", The 14<sup>th</sup> Int. Conf. On Computer Theory and Applications, ICCTA'2004, Alexandria, Egypt, Sept. 28-30, 2004.
- [7] J.S. Rahhal and D. I. Abu-Al-Nadi, "Mobile Vehicle Location using Integrated GPS GSM Systems", EUROMEDIA'2007, Delft, The Netherlands, 127-130, April 25-27, 2007.
- [8] J.S. Rahhal, D.I. Abu-Al-Nadi, and M.F. Hawa, "Viterbi Decoder Algorithm Using Quantum Computing" IEEE Congress on Evolutionary Computing CEC2007, Singapore, pp:4094-4099, Sep.25-28, 2007.
- [9] M.J. Mismar, D.I. Abu-Al-Nadi, and T.H. Ismail, "Pattern Synthesis with Phase-Only Control Using Array Polynomial Technique" IEEE Conference on Signal Processing and Communications ICSPC07, Dubai, UAE, vols1-3, pp:444-447, 24-27 Nov. 2007.

- [10] D.I.Abu-Al-Nadi, T.H. Ismail, and M.J. Mismar "Synthesis of Linear Array and Null Steering with minimized Side-Lobe Level Using Particle Swarm Optimization"  
European Conference on Antenna and Propagation EuCAP2010. Barcelona Spain, 12-16 April 2010.

### **Theses Supervised**

- 1) Vision System for Visually Impaired People.
- 2) Fractal Image Compression Using Artificial Neural Networks.
- 3) Automated Personal Recognition System Based on Human Iris Analysis.
- 4) On the Relation between Support Vector Machine (SVM) and Fuzzy Rule-Based Systems.
- 5) Design and Implementation of a Fast Pipelined Viterbi Decoder.
- 6) Independent Component Analysis (ICA) for Texture Classification.
- 7) Estimation of Direction of Arrival in MIMO Systems.
- 8) Investigation of Independent Component Analysis (ICA) Algorithms.
- 9) Interpolation Based Technique for low complexity SIC of MIMO-OFDM System.

### **Theses Currently Supervised**

- 1) Wireless Sensor Networks (WSN) with Orthogonal Frequency Division Multiplexing (OFDM).

### **Languages:**

Arabic (Native language), English, and German.