

## Résumé

### Murad M. Alaqtash, Ph.D. Candidate

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#### Contact Information:

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#### Education and Qualifications:

- Ph.D. Candidate in Computer Engineering, Since August, 2008  
Electrical and Computer Engineering Department  
The University of Texas at El Paso, El Paso, TX, USA  
GPA: 4.0/4.0
  - M.Sc. in Computer Engineering, February, 2007  
Computer Engineering Department  
Jordan University of Science and Technology, Irbid, Jordan  
GPA: 84.2/100  
Thesis: "An Efficient Hardware Architecture for Variable Block Size Motion Estimation in H.264/AVC"
  - B.Sc. in Computer Engineering, June 2003  
Computer Engineering Department  
Jordan University of Science and Technology, Irbid, Jordan  
GPA: 81.0/100  
Graduation Project: Software for Classroom Teaching using Computer Networks
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#### Professional Experience:

- June 2009- Jan 2012   Assistant Instructor/ Teaching Assistant  
                                  Electrical and Computer Engineering Department  
                                  Research Assistant  
                                  Industrial, Manufacturing & Systems Engineering Department  
                                  The University of Texas at El Paso, Texas, USA
- Sep 2007- Aug 2008   Full time lecturer  
                                  Electrical and Computer Engineering Department  
                                  Tafila Technical University, Jordan
- Aug 2004- Sep 2007   Computer and Network Support Engineer  
                                  Ministry of Education, Jordan
- Aug 2003- Apr 2004   Software Development Engineer  
                                  Royal Investment Group, Jordan

➤ Jun 2002- Mar 2003 IT Support, Mobilecom, Jordan

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### **Research Activity:**

Development of Intelligent System for the Assessment of Functional Impairments in Human Locomotion using Wearable Biosensors and the Methods of Soft Computing

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### **Research Interests:**

- Human Motion Analysis and Neurorehabilitation
  - Clinical Biomedical Diagnosis
  - Wearable Biosensors
  - Artificial Intelligence and Machine learning
  - Image processing
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### **Peer Reviewed Articles Published on International Journals:**

- Murad Alaqtash, Huiying Yu, R. Brower, A. Abdelgawad, T. Sarkodie-Gyan, "Application of wearable sensors for human gait analysis using fuzzy computational algorithm", *Engineering Applications of Artificial Intelligence*, Vol. 24, Iss. 6, September 2011, Pages 1018-1025.
  - T. Sarkodie-Gyan, Huiying Yu, Murad Alaqtash, A. Abdelgawad, E. Spier, R. Brower, "Measurement of functional impairments in human locomotion using pattern analysis", *Measurement*, Vol. 44, Iss. 1, January 2011, pp. 181-191.
  - Huiying Yu, Murad Alaqtash, Eric Spier, T. Sarkodie-Gyan, "Analysis of muscle activity during gait cycle using fuzzy rule-based reasoning", *Measurement*, Vol. 43, Iss. 9, Nov. 2010, pp. 1106-1114.
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### **Peer Reviewed Articles Published on Peer-Reviewed International Conference Proceedings:**

- Murad Alaqtash, Thompson Sarkodie-Gyan, Huiying Yu, Olac Fuentes, Richard Brower, and Amr Abdelgawad, "Automatic Classification of Pathological Gait Patterns using Ground Reaction Forces and Machine Learning Algorithms", *Proc. 33rd Ann. Int. Conf. IEEE Engineering in Medicine and Biology Society*, Boston, MA, Aug.30- Sep.3,2011 .
- Murad Alaqtash, Huiying Yu, R. Brower, A. Abdelgawad, E. Spier, T. Sarkodie-Gyan, "Application of Wearable Miniature Non-invasive Sensory System in Human Locomotion using Soft Computing Algorithm", *Int. Conf. on Intelligent Robotics and Applications*, Lecture Notes in Computer Science, Vol. 6424, 2010, pp. 288-299.
- T. Sarkodie-Gyan, M. Alaqtash, H. Yu, C. MacDonald, E. Spier, R. Brower, "Determination of Functional Impairments using the methods of computational intelligence", *Proc. 6th World Congress for Neurorehabilitation*, Vienna, Austria, March 21-25, 2010.
- T. Sarkodie-Gyan, Huiying Yu, Murad Alaqtash, Eric Spier, and Richard Brower, "Recognition and Decision-making algorithm in Human Locomotion based on the

Principles of Fuzzy Reasoning”, *Proc. IEEE Int. Conf. on Robotics and Biomimetics*, Guilin, China, Dec. 19-23, 2009, pp.529-534.

- Fayez Idris, Sameer Batanieh, Ahmad Sawalmeh, and Murad Alaqtash, “JPEG Compression using Improved Fast Cosine Transform”, *1st Int. Conf. in Digital Communications and Computer Applications*, Irbid, Jordan, 19-22 March 2007.

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**Research Skills:**

- Human motion analysis using wearable inertial sensors and optical motion capture systems for the acquisition of kinematics, instrumented treadmill for kinetics, and surface EMG sensors for muscles activity
- Development of data acquisition and processing systems for biomedical signals
- Development of Wearable Biosensors
- Clinical Biomedical Diagnosis
- Artificial Intelligence and Machine learning
- Fuzzy Logic

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**Technical Skills:**

- Computer Aided Design using Verilog hardware description language
- Programming in C, C++, Visual Basic, VB.NET, Matlab, API, VBA, and HTML
- Software development using Microsoft Visual Studio
- Measurement and control systems development using National Instruments LabVIEW®
- Database management using SQL Server and Microsoft Office Access
- TC/IP networks and wireless networks administration
- Linux, Microsoft Windows and Windows server administration

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**Teaching Courses:**

- Software Design
- Object Oriented Programming
- Data Structure and Algorithms
- Computer Networks
- Microprocessor and Assembly Language
- Computer Maintenance
- Electric Circuits
- Measurements and Transducers

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**Awards:**

- Dodson Dissertation Fellowship, Jan – May 2012, Graduate School, The University of Texas at El Paso, El Paso, TX, USA

- Teaching/Research Assistantship. Jun 2009- Jan 2012, Electrical and Computer Engineering Department, The University of Texas at El Paso, El Paso, TX, USA

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**Academic Events/ Conferences:**

- Attended the 1st Annual Doctoral Research Exposition, The University of Texas at El Paso, El Paso, TX, USA, Nov. 11, 2011 (Oral Presentation)
- Attended the 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Boston, MA, USA, Aug. 30- Sep. 3, 2011 (Poster Presentation)
- Attended the 8th Annual Border Security Conference, The University of Texas at El Paso, El Paso, TX, USA, Aug. 15-16, 2011
- Attended the International Congress on Artificial Intelligence and Applied Robotics, CIAR-UNISANGIL, Colombia, Oct. 28-31, 2009 (Oral Presentation)
- Attended the 1st International Conference in Digital Communications and Computer Applications, DCCA, Irbid, Jordan, 19-22 March (Oral Presentation)

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**Workshops:**

- “Graduate Student Instructor Teaching Seminar”, Aug. 17-20, 2011, The University of Texas at El Paso, El Paso, TX, USA
- “A Foundation Management Training Programme for New Entrants to Business”, Dec. 3-15, 2005, EuroJordanian Advanced Business Institute and International Finance Corporation, Amman, Jordan.

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**Institutional and Professional Societies Membership:**

- Neuroscience Research Association, President, UTEP
- UTEP Student Chapter of Engineering World Health, Vice President, UTEP
- The Society for Robotics and BioCybernetics, Member, UTEP

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**References:**

- Thompson Sarkodie-Gyan, Ph.D. Associate Professor  
Electrical and Computer Engineering Department,  
The University of Texas at El Paso, Texas, USA  
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- Scott Starks, Ph.D. Professor  
Electrical and Computer Engineering Department,  
The University of Texas at El Paso, Texas, USA  
Email: [sstarks@utep.edu](mailto:sstarks@utep.edu) Tel: (915) 747-8856
- Amr Abdelgawad, M.D. Assistance Professor

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University Health Science Center, El Paso, Texas  
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➤ Eric D. Smith, Ph.D.

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The University of Texas at El Paso, Texas, USA  
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