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## Dr. Iyad Fayeze Jafar

### Summary of Qualifications

Received his Ph.D. degree in computer engineering from Wayne State University in 2008 and joined the Computer Engineering Department at The University of Jordan as an Assistant Professor in July 2008 and was promoted to Associate Professor in 2013. Since 2008, he has been engaged in the academic life as an instructor and researcher. His research areas are focused on digital image processing, computer vision, and computer networks. He has published several research papers in peer-reviewed journals and conferences. He has been serving as the Chair of the Computer Engineering Department at the University of Jordan since September 2013.

### Personal Information

- **Nationality:** Jordanian
- **Date of Birth:** 28<sup>th</sup> March 1978

### Education

**2004 - 2008**                      **Wayne State University**                      **Michigan, USA**

- Ph.D. in Computer Engineering
- Dissertation Title: The Development and Evaluation of Novel Algorithms for Contrast Enhancement in Grayscale Images
- GPA: 3.93/4.0

**2003 – 2004**                      **Illinois Institute of Technology**                      **Illinois, USA**

- M.Sc. in Electrical Engineering
- GPA: 4.0/4.0
- Outstanding Academic Achievement Award

**1996 – 2001**                      **The University of Jordan**                      **Amman, Jordan**

- B.Sc. in Electrical Engineering
- GPA: 3.2/4.0
- Top 10% of class

### Experience

**Sep. 2013 – Now**                      **The University of Jordan**                      **Amman, Jordan**  
*Associate Professor in Computer Engineering*

- Teaches several graduate and undergraduate courses such as digital logic, assembly language and microprocessors, embedded systems, computer organization, digital signal processing, electric circuits, digital image processing and advanced computer architecture.
- Supervises different laboratories such as digital logic, embedded systems, microprocessors, computer design, and computer applications lab.
- Preparing the experiments and projects of the computer applications lab (Matlab-oriented).
- Supervised/supervising eight M.Sc. theses

- Supervised more than thirty projects for undergraduate students since 2008.

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**Sep. 2013 – Now**                      **The University of Jordan**                      **Amman, Jordan**  
*Acting Chair of Computer Engineering Department*

- Handling academic issues related to students and staff members
- Handling of administrative issues of the department
- Development of the department's laboratories and infrastructure
- Recruiting faculty members, lecturers, and lab engineers

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**May 2008 – Jun. 2013**                      **The University Of Jordan**                      **Amman, Jordan**  
*Assistant Professor in Computer Engineering*

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**Sep. 2010 – Sep. 2012**                      **The University of Jordan**                      **Amman, Jordan**

**Assistant Dean for Computer Affairs**

- Manages and supervises the computing facilities and laboratories that service students and administrative staff in the College of Engineering including computers, web and software servers, and network-related issues.
- Recruiting engineers and technicians.
- Defining technical specifications for computer purchases in the college of engineering.

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**Aug. 2009 – Sep. 2012**                      **JoVision UG**                      **Jordan & Germany**

*Research Consultant*

- Development of a computer-aided diagnosis tool for prostate cancer

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**Sep. 2006 – May 2008**                      **Wayne State University**                      **Michigan, USA**

*Graduate Teaching Assistant and Lecturer*

- Taught the Capestone Design course; a senior-level course that covers advanced topics in embedded systems.
- Taught the Electric Circuits Lab.
- Taught the Microcontrollers Lab.

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**Sep. 2005 – Sep. 2006**                      **Wayne State University**                      **Michigan, USA**

*Graduate Research Assistant*

- Conducted research and development of a computer-aided diagnosis tool for lung cancer based on volumetric PET/CT images.

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**May 2002 – Jan. 2003**                      **The University of Jordan**                      **Amman, Jordan**

*Graduate Teaching Assistant*

- Developed and designed the experiments for the digital logic and computer organization laboratory.

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**May 2001 – Jul. 2002**                      **National Electric Power Company**                      **Amman, Jordan**

- Management and maintenance for OpenVMS and WINNT servers
- Technical support for the Ethernet network devices and internet

service

## Research Areas

- Digital Image and Signal Processing
- Computer Vision
- Multimedia Streaming and Networking
- Wireless Sensor Networks
- Cognitive Radio Networks

## Publications

### *Peer-reviewed Journal Papers*

1. R. Saifan, G. Alsukkar and **I. Jafar**, “Optimized Cooperative Spectrum Sensing Algorithms in Cognitive Radio Networks,” *The Computer Journal*, Accepted for publication.
2. K. Darabkh, A. Al-Dhamari and **I. Jafar**, “A New Steganographic Algorithm Based on Multi Directional PVD and Modified LSB,” *Information Technology and Control*, Accepted for publication.
3. K. Darabkh, W. Albtoush and **I. Jafar**, “Improved Clustering Algorithms for Target Tracking in Wireless Sensor Networks,” *Journal of Supercomputing*, accepted for publication, Oct. 2016, DOI: 10.1007/s11227-016-1898-1.
4. M. Hawa, D. Abu-Al-Nadi, O. Alsmadi, **I. Jafar**, “On Using Spectrum History to Manage Opportunistic Access in Cognitive Radio Networks,” *IEEE Access*, vol. 4, pp. 5293 - 5308, Aug. 2016.
5. G. Al Sukkar, R. Saifan, S. Khwaldeh, M. Maqableh and **I. Jafar**, “Address Resolution Protocol (ARP): Spoofing Attack and Proposed Defense,” *Communications and Network*, vol. 9, no. 3, pp. 118 – 130, Jul. 2016.
6. **I. Jafar**, K. Darabkh and R. Saifan, “SARDH: A Novel Sharpening Aware Reversible Data Hiding Algorithm,” *Journal of Visual Communication and Image Representation*, vol. 39, pp. 239-252, Aug. 2016.
7. E. Jaarah and **I. Jafar**, “Efficient Reversible Data Hiding Algorithms Based on Dual Prediction,” *Signal & Image Processing: An International Journal (SIPIJ)*, vol. 7, no. 2, pp. 1-22, Apr. 2016.
8. **I. Jafar**, K. Darabkh, R. Al-Zubi and R. Saifan, “An Efficient Reversible Data Hiding Algorithm Using Two Steganographic Images,” *Signal Processing*, vol. 128, no. 11, pp. 98-109, Apr. 2016.
9. R. Saifan, G. Al-Sukkar, R. Al-Ameer and **I. Jafar**, “Energy Efficient Cooperative Spectrum Sensing Cognitive Radio,” *International Journal of Computer Networks & Communication*, vol. 8, no. 2, pp. 13-24, Mar. 2016.
10. S. Hiary, **I. Jafar** and H. Hiary, “An Efficient Multi-predictor Reversible Data Hiding Algorithm based on Performance Evaluation of Different Prediction Schemes,” *Multimedia Tools and Applications*, Jan. 2016, DOI 10.1007/s11042-015-3161-9.
11. K. Darabkh, H. Obeid, **I. Jafar** and R. Al-Zubi, “A Generic Buffer Occupancy Expression for Stop-and-Wait Hybrid Automatic Repeat reQuest Protocol Over Unstable Channels,” *Telecommunication Systems*, vol. 63, no. 2, pp. 205–221, Nov. 2015.
12. **I. Jafar**, K. Darabkh, R. Al-Zubi and R. Al Na'mneh, “Efficient

- Reversible Data Hiding Using Multiple Predictors,” *The Computer Journal*, vol. 59, no. 3, pp. 423-438, Aug. 2015.
13. K. Darabkh, **I. Jafar**, R. Al-Zubi and M. Hawa, “A New Image Steganographic Approach for Secure Communication Based on LSB Replacement Method,” *Information Technology and Control*, vol. 44, no.3, pp. 315-328, Sep. 2015.
  14. K. Darabkh, A. Khalifeh, **I. Jafar**, B. Bathech, and S. Sabah, “A Yet Efficient Communication System with Hearing-Impaired People Based on Isolated Words of Arabic Language,” *IAENG International Journal of Computer Science*, vol. 40, no. 3, pp. 183-193, Aug. 2013.
  15. **I. Jafar**, R. Al Na’mneh and K. Darabkh, “Efficient Improvements on the BDND Filtering Algorithm for the Removal of High Density Impulse Noise,” *IEEE Transactions on Image Processing*, vol. 22, no. 3, pp. 1223-1232, Mar. 2013.
  16. K. Darabkh, **I. Jafar**, G. Al Sukkar, G. Abandah, and R. Al-Zubi, “An Improved Queuing Model for Packet Retransmission Policy and Variable Latency Decoders,” *IET Communications*, vol. 6, no. 18, pp. 3315-3328, Dec. 2012.
  17. K. Darabkh, S. Ismail, M. Al-Shurman, **I. Jafar**, E. Alkhader, and M. Al-Mistarihi, “Performance Evaluation of Selective and Adaptive Heads Clustering Algorithms over Wireless Sensor Networks,” *Journal of Network and Computer Applications*, Elsevier Science, vol. 35, no. 6, pp. 2068- 2080, Nov. 2012.
  18. **I. Jafar**, K. Darabkh, G. Al-Sukkar, “A Rule-based Fuzzy Inference System for Adaptive Image Contrast Enhancement,” *The Computer Journal*, Oxford University Press, vol. 55, no. 9, pp. 1041-1057, Sep. 2012.
  19. Rami Al Na’mneh, Khalid Darabkh, and **Iyad Jafar**, “Efficient Bit Reversal Algorithms in Parallel Computers,” *International Journal of Computers and their Applications*, vol. 19, no. 3, pp. 154-165, Sep. 2012.
  20. **I. Jafar** and K. Darabkh, “Image Contrast Enhancement Based on Equalization of Edge Histograms,” *IAENG International Journal of Computer Science*, vol. 38, no. 3, pp. 192-204, Aug. 2011.
  21. K. Darabkh, B. Abu Jaradeh and **I. Jafar**, “Incorporating ARQ and Thresholds with Variable Complexity Decoding Algorithms over Wireless Networks: Queuing Analysis,” *IET Communications*, vol. 5, no. 10, pp. 1377-1393, July 2011.
  22. **I. Jafar** and H. Ying, “New Algorithms for Image Contrast Enhancement in Grayscale Images Based on the Variational Definition of Histogram Equalization,” *Integrated Computer-Aided Engineering Journal*, vol.15, pp. 131-147, Apr. 2008.
  23. **I. Jafar**, H. Ying, “A New Method for Image Contrast Enhancement Based on Automatic Specification of Local Histograms,” *International Journal of Computer Science and Network Security*, vol. 7, issue 7, pp. 1-10, Jul. 2007.

*Peer-reviewed Conference Papers*

1. E. Jaarah and **I. Jafar**, "Reversible Data Hiding Based on Histogram Shifting of Prediction Errors Using Two Predictors," Proceedings of 2015 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT), Amman, Jordan, Nov. 2015.
2. K. Darabkh, **I. Jafar**, R. Al-Zubi, and M. Hawa, "An Improved Image Least Significant Bit Replacement Method," Proceedings of the 37<sup>th</sup> International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO), Croatia, May 2014.
3. **I. Jafar**, S. Hiary and K. Darabkh, "An Improved Reversible Data Hiding Algorithm Based on Modification of Prediction Errors," Proceedings of the 6<sup>th</sup> International Conference on Digital Image Processing (ICDIP), Greece, April 2014.
4. G. AL-Sukkar, **I. Jafar**, K. Darabkh, R. Al-Zubi and M. Hawa, "Cooperative Energy Efficient Routing for Wireless Sensor Networks in Smart Grid Communications," Proceedings of the International Conference on Computer and Information Engineering (ICCIE2013), France, April 2013.
5. **I. Jafar**, S. Alrawashdeh and B. Alhamayel, "High Level Synthesis of Digital Filters Based on Sub-Token Forwarding," Proceedings of the International Conference on Computer and Information Engineering (ICCIE2013), France, April 2013.
6. **I. Jafar** and R. AlN'amneh, "Improving the Performance of BDND Filtering in Impulse Noise Removal," Proceedings of the Ninth International Multi-Conference on Systems, Signals & Devices (SSD12), Chemnitz, Germany, March 2012.
7. F. Ghawanmeh, **I. Jafar**, M. Altaee, M. Ghawanmeh and Z. Muhsin, "Development of Improved Automatic Music Transcription System for the Arabian Flute (NAY)," Proceedings of the Eighth International Multi-Conference on Systems, Signals & Devices (SSD11), Sousse, Tunisia, March 2011.
8. **I. Jafar** and K. Darabkh, "A Modified Unsharp-Masking Method for Image Contrast Enhancement," Proceedings of the Eighth International Multi-Conference on Systems, Signals & Devices (SSD11), Sousse, Tunisia, March 2011.
9. **I. Jafar** and G. Al-Sukkar, "A Novel Coloring Framework for Grayscale Images", Proceedings of the International Conference on Multimedia and Information Technology, Sharjah, UAE, March 2010.
10. **I. Jafar** and H. Ying, "Image Contrast Sharpening Using Adaptive Local Graylevel Transformation Functions," Proceedings of the 4<sup>th</sup> International Conference on Information Technology, Amman, Jordan, June 2009.
11. **I. Jafar** and H. Ying, "Automatic Histogram Specification with Brightness Preservation Algorithm for Image Contrast Enhancement," Proceedings of the International Conference on Image Processing, Computer Vision, and Pattern Recognition, Las Vegas, NV, June 2007.
12. **I. Jafar** and H. Ying, "Multilevel Component-Based Histogram

Equalization for Enhancing the Quality of Grayscale Images,” Proceedings of the IEEE Electro/Information Conference, Chicago, IL, May 2007.

13. **I. Jafar** and H. Ying, “Image Contrast Enhancement by Constrained Variational Histogram Equalization,” Proceedings of the IEEE Electro/Information Conference, Chicago, IL, May 2007.

14. **I. Jafar** and H. Ying, A. Shields and O. Muzik, “Computerized Detection of Lung Tumors in PET/CT Images,” Proceedings of the 28<sup>th</sup> Annual International Conference IEEE Engineering in Medicine and Biology, New York, NY, August 2006.

### Teaching Activities

**Taught the following courses at the University of Jordan**

- Digital Logic
- Assembly Language and Microprocessor
- Embedded Systems
- Embedded Systems Lab
- Digital Image Processing
- Computer Organization
- Electric Circuits
- Digital Signal Processing
- Computer Applications Lab
- Advanced Computer Architecture

### Graduate Studies Service

**Supervised/supervising the following M.Sc. theses at the University of Jordan**

1. “Performance Evaluation of Analysis and Synthesis Sparse Modeling in Solving the Inverse Problem,” *Student*: Sawsan Elwan; *Started in*: September 2015.
2. “Improved Multiple-image Reversible Data Hiding Algorithms”; *Student*: Sakha Obeidat; *Defended in* May 2016.
3. “Improving the Efficiency of Separable Reversible Data Hiding Techniques in Encrypted Images”; *Student*: Hama Alawasa; *Started in* April 2015.
4. “Performance Evaluation of Modern Copy-Move Forgery Detection Algorithms in Digital Images Based on Block Matching”; *Student*: Baraah Albashaireh; *Defended in* August 2015.
5. “Intelligent and Efficient Web Proxy Caching Algorithms”; *Student*: Eman Al-Qteimat; *Defended in* August 2015.
6. “Improving the efficiency of Prediction-based Reversible Data Hiding Algorithms”; *Student*: Enas Jaarah; *Defended in* May 2015.
7. “An Improved Image Segmentation Algorithm Based on the Geodesic Active Contour Models”; *Student*: Bushra Altarawneh; *Defended in* May 2015.
8. “Performance Evaluation of Different Prediction Schemes in Reversible Image Data Hiding”; *Student*: Sawsan Hiary; *Defended in* May 2014.

**Committee member for the following M.Sc. theses**

1. “New Clustering and Routing Algorithms for Gathering Data in Wireless Sensor Networks,” *Student*: Reham Maqat, *Advisor*: Prof. Khalid Darabkh, The University of Jordan, Jordan, August 8<sup>th</sup>, 2016.
2. “Balanced Energy-Aware Clustering and Routing Algorithms for Wireless Sensor Networks” *Student*: Mohammad Alyabroudi, *Advisor*: Prof. Khalid Darabkh, The University of Jordan, Jordan, August 7<sup>th</sup>, 2016.
3. “Reversible Data Hiding in Encrypted Images,” *Student*: Nour Kittawi, *Advisor*: Dr. Ali Al-Haj, Princess Sumaya University For Technology, May 2016.

4. "Analysis of Adaptive Behavioral Authentication Model Based on Keystroke Dynamics," *Student: Asma Salem, Advisor: Prof. Andraos Swidan, The University of Jordan, Jordan, April 28<sup>th</sup>, 2016.*
5. "An Improved Adaptive-Head Clustering Algorithm for Target Tracking in Wireless Sensor Networks," *Student: Wijdan Albtoosh, Advisor: Dr. Khalid Darabkh, The University of Jordan, Jordan, April 14<sup>th</sup>, 2016.*
6. "Investigating Social Networks with Genalogical Features," *Student: Alia Alhusban, Advisor: Prof. Gheith Abandah, The University of Jordan, Jordan, Dec. 12<sup>th</sup>, 2015.*
7. "Automatic Arabic Text Diacritization Using Recurrent Neural Networks," *Student: Alaa Arabyiat, Advisor: Dr. Gheith Abandah, The University of Jordan, May 4<sup>th</sup>, 2015.*
8. "Efficient Image Steganographic Algorithms Based on Pixel-Value Differencing," *Student: Ahlam Al-Dhamari, Advisor: Dr. Khalid Darabkh, The University of Jordan, Arpil 16<sup>th</sup>, 2015.*
9. "Computer-Aided Diagnosis of Lumbar Disc Herniation," *Student: Mais Al-doweikat, Advisor: Dr. Mahmoud Al-Ayyoub and Dr. Mohammad Alsmairat, Jordan University of Science and Technology, February 25<sup>th</sup>, 2015.*
10. "Enhancing the Security of Cloud Computing Environment Using Semantic Segregation Techniques," *Student: Rami Matarneh, Advisor: Prof. Ahmad Kayed, Middle East University, January 26<sup>th</sup>, 2015.*
11. "Protection of E-government Document Images Using Digital Watermarking," *Student: Husam Barruqa, Advisor: Dr. Ali Al-Haj, Princess Sumaya University For Technology, December 21<sup>st</sup>, 2014.*
12. "Energy-Aware and Layering-Based Clustering and Routing Algorithms for Data Gathering in Wireless Sensor Networks," *Student: Noor Almaitah, Advisor: Dr. Khalid Darabkh, The University of Jordan, December 18<sup>th</sup>, 2014.*
13. "Efficient and Adaptive Computation Control for Variable Complexity Fano Algorithms over Wireless Networks," *Student: Fatima Alqudah, Advisor: Dr. Khalid Darabkh, The University of Jordan, August 5<sup>th</sup>, 2014.*
14. "Exploring Encryption and Watermarking Techniques for Secure Telemedicine," *Student: Noor Hajj Abdullah, Advisor: Dr. Gheith Abandah and Dr. Ali Al-Haj, The University of Jordan, July 28<sup>th</sup>, 2013.*
15. "Adaptable Audio/Video Quality for Performance Enhancement in e-Health Video Conferencing System," *Student: Ayman Murshid, Advisor: Prof. Majid Altaee, The University of Jordan, March 3<sup>rd</sup>, 2013.*
16. "Distributed Architecture for Electronic Referral Health System Utilizing Computational Intelligence for Decision Support," *Student: Majd Alzghol, Advisor: Prof. Majid Altaee, The University of Jordan, July 29<sup>th</sup>, 2012.*

### **Professional & Academic Activities**

#### **Computer Engineering Department – The University of Jordan**

- Chair of the ABET committee 2015-2017
- Chair of the Course Plan committee 2013-2017
- Chair of the Graduate Studies Committee 2013-2017
- Member in the Graduate Studies Committee 2009-2013
- Member in the Course Plan Committee 2009-2013
- Member in ABET Committee 2012
- Member of the E-learning Committee 2008 -2013.
- Member of Faculty Recruitment and Outreach Committee 2008.
- Member of Accreditation and Quality Assurance Committee since 2010.
- Member of Students Union Election Committee since 2009.
- Chair of Exams Coordination Committee 2008 - 2011.

#### **School of Engineering – The University of Jordan**

- Member in the Graduate Studies Committee 2013-2017

- Member in the Students Union Election Committee 2009-2016
- Member of Faculty Council for the academic 2013-2016
- Member in the Course Scheduling Committee 2014-2015
- Chair and Coordinator of the School of Engineering Committee for The University of Jordan 50<sup>th</sup> Anniversary Exhibition, 2013
- Chair of the Computer Affairs Committee 2010-2012
- Member of Faculty Council 2010/2011

#### **Reviewer for**

- IEEE Signal Processing Letters.
- Signal Processing Journal (Elsevier).
- The 2015 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies, Jordan, November 2015.
- Journal of Vision and Image Computing (Elsevier).
- The 6<sup>th</sup> International Conference on Digital Image Processing (ICDIP 2014), Greece, April 2014.
- Journal of Intelligent and Fuzzy Systems.
- Digital Signal Processing Journal (Elsevier).
- Journal of Dynamics of Continuous, Discrete & Impulsive Systems – Series B: Applications and Algorithms.
- KSII Transactions on Internet and Information Systems.
- Dirasat Journal published by the University of Jordan.
- The 2011 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies, Jordan, December 2011.
- Reviewer for the Third Mosharaka International Conference on Communications, Computers and Applications, MIC-CCA, Amman, October 2009.
- 4<sup>th</sup> International Conference on Information Technology, Jordan, June 2009.
- 2012 IEEE Region 8 Student Paper Contest, 2010-2012.

#### **Referee Member in**

- National Technology Parade, Amman Alahlyiah University, Jordan, 2016.
- National Technology Parade, Hashemite University, Jordan, 2012.
- National Technology Parade, Philadelphia University, Jordan, 2011.
- National Technology Parade, Jordan University of Science & Technology, Jordan, 2010.
- METS graduation projects contest, Jordan, 2008.

#### **Technical Meetings**

##### ***Conference Committees***

- Steering Committee Member, 9<sup>th</sup> National Technology Parade, Amman Alahlyiah University, 2016
- Technical Program Committee, International Conference on Digital Image Processing, Chengdu, China, May 2016
- The 2015 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies, Jordan, November 2015.
- Chair of the Steering Committee of the 8<sup>th</sup> National Technology Parade, 2015
- Technical Program Committee, International Conference on Digital Image Processing since 2014

##### ***Speaker in***



- The 6<sup>th</sup> International Conference on Digital Image Processing (ICDIP), Greece, April 2014.
- The International Conference on Computer and Information Engineering (ICCIE2013), France, May 2013
- The Ninth International Multi-Conference on Systems, Signals & Devices (SSD12), Chemnitz, Germany, March 2012.
- The Eighth International Multi-Conference on Systems, Signals & Devices (SSD11), Sousse, Tunisia, March 2011.
- The International Conference on Multimedia and Information Technology, Sharjah, UAE, March 2010.
- The 4<sup>th</sup> International Conference on Information Technology, Amman, Jordan, June 2009.
- The International Conference on Image Processing, Computer Vision, and Pattern Recognition, Las Vegas, NV, June 2007.
- The IEEE Electro/Information Conference, Chicago, IL, May 2007.
- The 28<sup>th</sup> Annual International Conference IEEE Engineering in Medicine and Biology, New York, NY, August 2006.

#### *Attendee in*

- Could Infrastructure and Services Workshop, Princess Summayah University for Technology, Organized by EMC, January 26 – 30, 2014.
- The workshop on “E-learning in The University of Jordan: Vision and Ideas,” The University of Jordan, Jordan, September 2012.
- The 2011 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies, Jordan, December 2011.
- The College of Engineering Workshop on Status and Prospects of Sustainable Engineering Education, The University of Jordan, May 2011.
- The Global Conference on Renewal Energy and Energy Efficiency for Desert Regions, The University of Jordan, Jordan, April 2011.
- The Third Mosharaka International Conference on Communications, Computers and Applications, MIC-CCA, Amman, October 2009.

#### **Honors & Awards**

- National Technology Parade First Place Award in the Smart Services theme for the project entitled "*Mobile Mirror*", Yarmouk University, Jordan, 2014.
- National Technology Parade First Place Award in the Games and Entertainment theme for the project entitled "*Virtual Reality Piano*", Yarmouk University, Jordan, 2014.
- Elected as "*The Best Instructor in the Computer Engineering Department*" in a poll organized by the Registrar Office, The University of Jordan, Jordan, 2012.
- UN Woman honorary award for the project entitled "*Computer-Aided Diagnosis of Prostate Cancer*," National Technology Parade, Hashemite University, Jordan, 2012.
- National Technology Parade Second Place Award in the Business Solutions theme for the project entitled "*Automated Class Attendance System with Network Support*", Philadelphia University, Jordan, 2011.
- National Technology Parade First Place Award in the Health theme for the project entitled "*Voice Commanded Robotic Arm: A Surgeon Assistant*", Jordan University of Science and Technology, Jordan,

2010.

- College of Engineering Outstanding Teaching Assistant Service Award 2007, Wayne State University, USA.
- Outstanding Academic Achievement Award, 2004, Illinois Institute of Technology, USA.
- Academic Achievement Honor Award, 1997, The University of Jordan, Jordan.

**Technical Skills**

- Programming Languages: C, C++, Java, Visual Basic, SQL, HTML, ASP, Matlab, Assembly (MIPS, x86, PIC, Motorola 68000).
- Operating Systems: WinNT, Win2003 Server, Windows 95-7, Unix and Linux.
- Development Frameworks: Visual Studio .Net, NetBeans, MASM, TASM, and MPLAB.
- Applications: Microsoft Word, Excel, PowerPoint, FrontPage, Access, Visio, Multisim, Altera Quartus and Proteus.

**Languages**

Fluent in written and spoken Arabic and English

**References**

Available upon request