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sites.google.com/view/iyadjafar

Professor Iyad Fayez 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 and then to Professor in 2013 and 2017, respectively. 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 excellent administrative experience as he served as the Chair of the Computer Engineering Department at the University of Jordan for four years and Assistant Dean for Computer Affairs for two years.

Personal Information

- ***Nationality:*** Jordanian
- ***Date of Birth:*** 28th 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

Jun. 2017 – Now The University of Jordan Amman, Jordan

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 M.Sc. theses

Supervised more than 40 projects for undergraduate students since 2008.

Sep. 2018 – Sep. 2020 **Princess Sumaya for Technology** **Amman, Jordan**

Visiting Professor

- Teaching embedded systems design, digital logic, and computer architecture courses.
- Head of Curriculum Reform Committee for the B.Sc. program.
- Member of Graduate Studies Committee in King Abdullah Second School of Engineering.
- Supervising M.Sc. theses.

Sep. 2013 – 2017 **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

Jun. 2013 – Jun. 2017 **The University Of Jordan** **Amman, Jordan**

Associate Professor in Computer Engineering

May 2008 – Jun. 2013 **The University Of Jordan** **Amman, Jordan**

Assistant Professor in Computer Engineering

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 School 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.

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

Graduate Teaching Assistant and Lecturer

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

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.

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.

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. **I. Jafar**, K. Darabkh and Fahed Jubair, "Separable High Capacity Reversible Data Hiding in Encrypted Images", International Arab Journal for Information Technology, 2022 (accepted for publication).
2. K. A. Darabkh, M. Al-Akhras, A. Khalifeh, **I. Jafar** and F. Jubair, "An Innovative RPL Objective Function for Broad Range of IoT Domains Utilizing Fuzzy Logic and Multiple Metrics," Expert Systems with Applications, vol. 205, Nov. 2022.
3. R. Al-Zubi, S. Al-Sarayrah, M. Hawa, K. Darabkh, **I. Jafar** and S. Alnabelsi, "TCP-CLD: Cross-Layer Design for Improving TCP Performance over Cognitive Radio Networks," International Journal on Communications Antenna and Propagation, vol. 10, no. 6, pp. 399-407, Dec. 2020.
4. K. Darabkh, N. Al-Maaitah, **I. Jafar** and A. Khalifeh, "EA-CRP: A Novel Energy-aware Clustering and Routing Protocol in Wireless Sensor Networks," Computers & Electrical Engineering, vol. 72, no. 11, pp. 702-718, Nov. 2018.
5. R. Al-Zubi, K. Darabkh, M. Hawa and **I. Jafar**, "RSP-WRAN: Resource sharing protocol for inter/intra WRAN communications," Journal of High Speed Networks, vol. 24, no. 1, pp. 31-47, Jan. 2018.
6. K. Darabkh, W. Albtoush and **I. Jafar**, "Improved clustering algorithms for target tracking in wireless sensor networks," The Journal of Supercomputing, vol. 73, no. 5, pp. 1952-1977, May. 2017.
7. 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, vol. 76, no. 2, pp. 2131-2157, Jan. 2017.
8. R. Saifan, G. Alsukkar and **I. Jafar**, "Optimized Cooperative Spectrum Sensing Algorithms in Cognitive Radio Networks," The Computer Journal, vol. 60, no. 6, pp. 835-849, Feb. 2017.
9. K. Darabkh, A. Al-Dhamari and **I. Jafar**, "*A New Steganographic Algorithm Based on Multi Directional PVD and Modified LSB*," Information Technology and Control, vol. 46, no. 1, pp. 16-36, Feb. 2017.
10. 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.

11. 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.

12. **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.

13. 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.

14. **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.

15. 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.

16. 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.

17. **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.

18. 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.

19. 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.

20. **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.

21. 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.

22. 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.

23. **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.

24. 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.
25. **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.
26. 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.
27. **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.
28. **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. S. Alkharabsheh and **I. Jafar**, "High-Capacity Separable Reversible Data Hiding Algorithm for Encrypted Images," Proceedings of 2021 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), Amman, Jordan, Nov. 2021.
2. E. Al-Qtiemat and **I. Jafar**, "Intelligent Cache Replacement Algorithm for Web Proxy Caching based on Multi-level K-means Clustering," Proceedings of 2021 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), Amman, Jordan, Nov. 2021.
3. **I. Jafar** and K. Darabkh, "An Improved Reversible Data Hiding Algorithm for Image Contrast Enhancement", Proceedings of the 3rd International Conference on Electrical, Communication and Computer Engineering (ICECCE 2021), Kuala Lampur, Malaysia, June 2021.
4. **I. Jafar**, H. Maghaydah and K. Darabkh, "Employing Unsharp Masking for Contrast Enhancement in Reversible Data Hiding," Proceedings of 19th International Symposium on Signal Processing and Information Technology ISSPIT 2019), Ajman, UAE, Dec. 2019.
5. K. Darabkh, N. Al-Maaitah, **I. Jafar** and A. Khalifeh, "Energy efficient clustering algorithm for wireless sensor networks," Proceedings of 2017 International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET), Chennai, India, March 2017.
6. 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.
7. K. Darabkh, **I. Jafar**, R. Al-Zubi, and M. Hawa, "An Improved Image Least Significant Bit Replacement Method," Proceedings of the 37th International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO), Croatia, May 2014.

8. **I. Jafar**, S. Hiary and K. Darabkh, "An Improved Reversible Data Hiding Algorithm Based on Modification of Prediction Errors," Proceedings of the 6th International Conference on Digital Image Processing (ICDIP), Greece, April 2014.
9. 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.
10. **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.
11. **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.
12. 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.
13. **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.
14. **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.
15. **I. Jafar** and H. Ying, "Image Contrast Sharpening Using Adaptive Local Graylevel Transformation Functions," Proceedings of the 4th International Conference on Information Technology, Amman, Jordan, June 2009.
16. **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.
17. **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.
18. **I. Jafar** and H. Ying, "Image Contrast Enhancement by Constrained Variational Histogram Equalization," Proceedings of the IEEE Electro/Information Conference, Chicago, IL, May 2007.
19. **I. Jafar** and H. Ying, A. Shields and O. Muzik, "Computerized Detection of Lung Tumors in PET/CT Images," Proceedings of the 28th Annual International Conference IEEE Engineering in Medicine and Biology, New York, NY, August 2006.

Teaching Activities

Taught the following courses

- 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

1. "Evaluating the Use of Machine Learning in the Detection and Classification of Shoulder Pain Based on Facial Expressions," *Student:* Raad Al-Edwan, *Started in* May 2022.
2. "Investigating and Adapting Pre-trained Deep Learning Models in Digital Image Steganalysis," *Student:* Dima Ibrahim, *Started in* May 2022.
3. "Designing a Speech Emotion Recognition System for Arabic Language Using Modern Machine Learning Techniques," *Student:* Rnad Alkhawatrah, *Started in* January 2022.
4. "Evaluating the Use of Deep Learning in Classifying Encryption Algorithms for Digital Images," *Student:* Noor Khader, *Started in* June 2021.
5. "Design and Implementation of a New Image Compression Algorithm Based on Machine Learning," *Student:* Mohammad Alhmoud, *Started in* Feb. 2021.
6. "Developing Domain-Configurable Arabic Booking Chatbot Based on Machine Learning," *Student:* Rahma Sadder, *Started in* Feb. 2021 (Co-supervisor with Prof. Gheith Abandah).
7. "Using Machine Learning to Build Recognition Engine for Arabic Booking Chatbot," *Student:* Boshra Sadder, *Started in* Feb. 2021 (Co-supervisor with Prof. Gheith Abandah).
8. "Speaker Anonymization Using Generative Adversarial Networks," *Student:* Ayah Aljafary, *Defended in June* 2021 (PSUT Co-supervisor with Dr. Amjed Almousa).
9. "Design and Implementation of a Novel Reversible Data Hiding Algorithm in Encrypted Images," *Student:* Sadaf Alkharabsheh, *Defended in* Jan. 2021 (PSUT).
10. "A Contrast-Enhancing Reversible Image Data Hiding Algorithm," *Student:* Hamzah Maghaydah, *Defended in* July 2018.
11. "Improving the Efficiency of Separable Reversible Data Hiding Techniques in Encrypted Images"; *Student:* Hama Alawasa; *Defended in* August 2017.
12. "Performance Evaluation of Analysis and Synthesis Sparse Modeling in Solving the Inverse Problem," *Student:* Sawsan Elwan; *Defended in* December 2016.
13. "Improved Multiple-image Reversible Data Hiding Algorithms"; *Student:* Sakha Obeidat; *Defended in* May 2016.
14. "Performance Evaluation of Modern Copy-Move Forgery Detection Algorithms in Digital Images Based on Block Matching"; *Student:* Baraah Albashaireh; *Defended in* August 2015.
15. "Intelligent and Efficient Web Proxy Caching Algorithms"; *Student:* Eman Al-Qteimat; *Defended in* August 2015.
16. "Improving the efficiency of Prediction-based Reversible Data Hiding Algorithms"; *Student:* Enas Jaarah; *Defended in* May 2015.
17. "An Improved Image Segmentation Algorithm Based on the Geodesic Active Contour Models"; *Student:* Bushra Altarawneh; *Defended* in May 2015.
18. "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. "Power-Aware Routing Protocol Based on Virtual Hexagonal Cells and Double Mobile Sinks in Power-Constrained IoT Network," *Student:* Reem Elyyan, *Advisor:* Prof. Khalid Darabkh, University of Jordan, May 19th, 2022.

2. "Energy-Aware Security Protocol for IoT Networks," *Student:* Malak Albarari, *Advisor:* Dr. Ramzi Saifan, University of Jordan, May 19th, 2022.
3. "Applying Deep Learning and Transfer Learning for Classifying Images of Bacterial Colonies," *Student:* Batool Shdaifat, *Advisor:* Prof. Gheith Abandah, *Co-Advisor*: Mohammad Abdul-Majeed, University of Jordan, March 24th, 2022.
4. "Investigating Encoder-Decoder Recurrent Neural Network For Diacritizing Arabic Text and Correcting Spelling Mistakes," *Student:* Ahmad Almajdoubeh, *Advisor:* Prof. Gheith Abandah, University of Jordan, August 26th, 2021.
5. "Efficient Sensor Network Clustering using Particle Swarm Optimization with Mobile Sink over Internet of Things," *Student:* Asmaa Alaween, *Advisor:* Prof. Kahlid Darabkh, The University of Jordan, May 20th, 2021.
6. "Lossy Image Compression Using Multi-Model Stacked AutoEncoder," *Student:* Ahmad Alqam, *Advisor:* Dr. Salam Freihat, Princess Symaya University for Technology, March 29th, 2021.
7. "Cross layer designs for efficient sensor routing over the internet of things and cloud computing," *Student:* Muna Alakhras, *Advisor:* Prof. Kahlid Darabkh, The University of Jordan, December 22nd, 2020.
8. "Ultrasound image smoothing to reduce ultrasound speckle and preserve edge cues," *Student:* Lina Hammad, *Advisor:* Dr. Ismail Hababeh and Dr. Mohammad Aldaoud, German Jordan University, May 20th, 2020.
9. "Machine Learning Translation from Arab Vocal Improvisation to Instrumental Melodic Accompaniment," *Student:* Ayah Alshamayleh, *Advisor:* Prof. Gheith Abandah, University of Jordan, December 26, 2019.
10. "Joint Routing and Channel Assignment for Throughput Maximization in Mobile Wireless Sensor Netoworks," *Student:* Mahmoud Nuaimat, *Advisor:* Dr. Ammar Gharaibeh, German Jordanian University, November 14th, 2019
11. "An Efficient Security Mechanism for the Internet of Things Systems," *Student:* Islam Alshawish, *Advisor:* Prof. Ali Alhaj, Princess Symaya University for Technology, August 8th, 2019.
12. "Enhancing Content Availability in Peer-to-Peer Systems," *Student:* Younis Sahmmout, *Advisor:* Prof. Mohammad Hawwa, The University of Jordan, Jordan, July 4th, 2018.
13. "A Cross-Layer Algorithm for Improving Ad-Hoc on Demand Distance Vector Protocol," *Student:* Mohammad Alfawares, *Advisor:* Prof. Khalid Darabkh, The University of Jordan, Jordan, April 26th, 2018.
14. "Investigating Recommended Guidelines for the Use of Microsoft Azure Cloud Services for High Performance Computing Applications," *Student:* Rawan Aljamal, *Advisor:* Dr. Ali Elmousa, The University of Jordan, Jordan, April 26th, 2018.
15. "Sink Mobility Optimization for Data Gathering in Wireless Sensor Networks," *Student:* Raya Alghsoon, *Advisor:* Dr. Ali Elmousa, The University of Jordan, Jordan, December 26th, 2017.
16. "Preprocessing and Segmentation of Handwritten Arabic Documents for Writer-Independent Automatic Recognition," *Student:* Ahmad Al-Hourani, *Advisor:* Prof. Gheith Abandah, The University of Jordan, May 1st, 2017.
17. "Combining Different Hybrid Encryption Algorithms to Secure Outsourced Data in Public Cloud Storage," *Student:* Haydar Al-Janabi, *Advisor:* Prof. Andraos Swidan, The University of Jordan, Jordan, September 2016
18. "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 8th, 2016.
19. "Balanced Energy-Aware Clustering and Routing Algorithms for Wireless Sensor Networks" *Student:* Mohammad Alyabroudi, *Advisor:* Prof. Khalid Darabkh, The University of Jordan, Jordan, August 7th, 2016.
20. "Reversible Data Hiding in Encrypted Images," *Student:* Nour Kittawi, *Advisor:* Prof. Ali Al-Haj, Princess Sumaya University for Technology, May 2016.

21. "Analysis of Adaptive Behavioral Authentication Model Based on Keystroke Dynamics," *Student:* Asma Salem, *Advisor:* Prof. Andraos Swidan, The University of Jordan, Jordan, April 28th, 2016.
22. "An Improved Adaptive-Head Clustering Algorithm for Target Tracking in Wireless Sensor Networks," *Student:* Wijdan Albtoush, *Advisor:* Prof. Khalid Darabkh, The University of Jordan, Jordan, April 14th, 2016.
23. "Investigating Social Networks with Genalogical Features," *Student:* Alia Alhusban, *Advisor:* Prof. Gheith Abandah, The University of Jordan, Jordan, Dec. 12th, 2015.
24. "Automatic Arabic Text Diacritization Using Recurrent Neural Networks," *Student:* Alaa Arabyiat, *Advisor:* Prof. Gheith Abandah, The University of Jordan, May 4th, 2015.
25. "Efficient Image Steganographic Algorithms Based on Pixel-Value Differencing," *Student:* Ahlam Al-Dhamari, *Advisor:* Prof. Khalid Darabkh, The University of Jordan, Arpil 16th, 2015.
26. "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 25th, 2015.
27. "Enhancing the Security of Cloud Computing Environment Using Semantic Segregation Techniques," *Student:* Rami Matarneh, *Advisor:* Prof. Ahmad Kayed, Middle East University, January 26th, 2015.
28. "Protection of E-government Document Images Using Digital Watermarking," *Student:* Husam Barruqa, *Advisor:* Prof. Ali Al-Haj, Princess Sumaya University For Technology, December 21st, 2014.
29. "Energy-Aware and Layering-Based Clustering and Routing Algorithms for Data Gathering in Wireless Sensor Networks," *Student:* Noor Almaitah, *Advisor:* Prof. Khalid Darabkh, The University of Jordan, December 18th, 2014.
30. "Efficient and Adaptive Computation Control for Variable Complexity Fano Algorithms over Wireless Networks," *Student:* Fatima Alqudah, *Advisor:* Prof. Khalid Darabkh, The University of Jordan, August 5th, 2014.
31. "Exploring Encryption and Watermarking Techniques for Secure Telemedicine," *Student:* Noor Hajj Abdullah, *Advisor:* Prof. Gheith Abandah and Dr. Ali Al-Haj, The University of Jordan, July 28th, 2013.
32. "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 3rd, 2013.
33. "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 29th, 2012.

Professional & Academic Activities

Computer Engineering Department – The University of Jordan

- Chair of the ABET committee 2015-now
- 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 Quality Assurance Committee 2020 - now
- 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 50th Anniversary Exhibition, 2013
- Chair of the Computer Affairs Committee 2010-2012
- Member of Faculty Council 2010/2011

Princess Sumaya University for Technology

- Member in Scientific Research Council 2021/2022 (external Member)
- Member in Scientific Research Council 2019/2020
- Chair of the Curricula Update for B.Sc. Computer Engineering program 2018-2019
- Chair of Establishing a new M.Sc. program in intelligent systems engineering 2018-2019.
- Member in Scientific Research Council 2018/2019

Reviewer for

- IEEE Signal Processing Letters
- Journal of Computing and Informatics
- The 2019 Jordan International Joint Conference on Electrical Engineering and Information Technology, Jordan, April 2019
- The 2017 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies, Jordan, October 2017
- 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 6th 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
- 4th 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

- Technical Program Committee Chair, 2021 Jordan International Conference on Electrical Engineering and Information Technology, Amman, Jordan, 2021
- Technical Program Committee Chair, 2019 Jordan International Conference on Electrical Engineering and Information Technology, Amman, Jordan, 2019
- Steering Committee Member, 9th 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 8th National Technology Parade, 2015
- Technical Program Committee, International Conference on Digital Image Processing since 2014

Speaker in

- The 3rd International Conference on Electrical, Communication and Computer Engineering (ICECCE 2021), Kuala Lampur, Malaysia, June 2021 (Virtual)
- IEEE International Symposium on Signal Processing and Information Technology, December 2019
- The 6th 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 4th 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 28th Annual International Conference IEEE Engineering in Medicine and Biology, New York, NY, August 2006

Attendee in

- Could Infrastructure and Services Workshop, Princess Sumayah 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

- Erasmus+ Teaching Mobility Award, Anadolu University, Turkey, 9/4/2018-13/4/2018
- Erasmus+ Teaching Mobility Award, Vilnius Gediminas Technical University, Lithuania, 19/3/2017-24/3/2017
- 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 Cance*r," 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 Qurtus and Proteus

Languages Fluent in written and spoken Arabic and English

References Available upon request