

# Muhanna Muhanna, Ph.D.

Assistant Professor, Computer Graphics and Animation  
Director of Quality Assurance and Accreditation  
Princess Sumaya University for Technology  
Amman, Jordan  
Cell Phone: +962.79.7096379  
E-mail: m.muhanna@psut.edu.jo

## EDUCATION

---

- Ph.D., Computer Science and Engineering, University of Nevada, Reno, USA, 8/2011
  - Research Focus: Human-Computer Interaction and User Experience
- M.S., Computer Science, University of Nevada, Reno, USA, 5/2007
- B.Sc., Information Technology, Balqa Applied University, Alsalt, Jordan, 8/2004

## EMPLOYMENT

---

- **Princess Sumaya University for Technology**
  - 09/2021 - present Director, Quality Assurance and Accreditation Center
  - 02/2021 - present Assistant Professor, Computer Graphics and Animation
- **Luminus Technical University College, Amman, Jordan**
  - 03/2019 - 02/2021 Vice Dean for Bachelor Programs
  - 09/2017 - 03/2019 Founding Head of Quality Assurance and Accreditation
  - 09/2017 - 02/2021 Assistant Professor, School of Advanced Computing
- **Princess Sumaya University for Technology, Amman, Jordan**
  - 09/2013 - 09/2017 Founding Director, Quality Assurance and Accreditation Center
  - 07/2013 - 09/2017 Assistant Professor, Department of Computer Graphics and Animation
  - 07/2016 - 10/2016 Acting Chair, Department of Computer Graphics and Animation
  - 07/2015 - 10/2015 Acting Chair, Department of Computer Graphics and Animation
  - 09/2011 - 08/2013 Assistant Professor, Department of Computer Science
- **Kwn Online Education, Dubai, United Arab Emirates**
  - 05/2016 – 08/2017 User Experience Professor (online courses)
- **Bayt.com, Amman, Jordan**
  - 10/2016 – 01/2017 User Experience Consultant
- **Solid Softs, Amman, Jordan**
  - 05/2014 - present User Experience Advisor
- **University of Nevada, Reno, USA**
  - 08/2008 - 08/2011 Research Assistant, SE and HCI Lab
  - 01/2005 - 05/2008 Teaching Assistant, Department of Computer Science and Engineering
- **Shred-it, Reno, NV, USA**
  - 05/2007 - 08/2011 UI/UX Designer
- **Ideal Systems, Amman, Jordan**
  - 06/1999 - 06/2004 Software Engineer

## PUBLICATIONS

---

- [28] Muhanna, M., Masoud, A., and Qusef, A., Usability Heuristics for Evaluating Arabic Mobile Games, *International Journal of Computer Games Technology*, Vol. 2022, pp. 1-7, Aug. 2022.
- [27] Qusef, A., Albadarneh, A., Elish, S., and Muhanna, M., Mitigating Personalization Challenges in Mobile Commerce: An Empirical Study, *Journal of Computers & Electrical Engineering*, Vol. 89(1), Jan. 2021.
- [26] Muhanna, M., Amro, R., and Qusef, A., Using a New Set of Heuristics in Evaluating Arabic Interfaces, *Journal of King Saud University - Computer and Information Sciences*, Elsevier, Vol. 32(2), Feb. 2020, pp. 248 – 253.
- [25] Muhanna, M., Mobile Game Usability Practices in Arab Game Companies, *International Journal of Innovative Technology and Exploring Engineering*, Vol. 9 (4), Feb. 2020, pp. 1780-1785.
- [24] Qusef, A., Ayasrah, A., Shaout, A., and Muhanna, M., By Two: A Two-Dimensional Mobile Game Model for Novice Developers, *Indonesian Journal of Electrical Engineering and Computer Science*, Vol. 14 (3), June 2019, pp. 1336-1344.
- [23] Salah, M. S., Jusoh, S., and Muhanna, M., The Development of Usability Heuristics For Arabic M-Commerce Applications, 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), April 2019, Amman, Jordan, pp. 779-784.
- [22] Amro, R., Dhama, S., Muhanna, M., and Koczy, L. K., Prioritization of Nielsen's Usability Heuristics for User Interface Design Using Fuzzy Cognitive Maps, *Proceedings of the Springer 7th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU 2018)*, Cadiz, Spain, June 2018, pp. 511-522.
- [21] Kiswani, J., Dascalu, S., Muhanna, M., Harris, F. C., Clowiz: A Model-driven Development Platform for Cloud-based Information Systems, *Proceedings of the 6th IEEE International Conference on Multimedia Computing and Systems (ICMCS)*, Rabat, Morocco, pp. 1-6, May 2018.
- [20] Kiswani, J., Muhanna, M., Dascalu, S. M., and Harria, F. C., Software Infrastructure to Reduce the Cost and Time of Building Enterprise Software Applications: Practices and Case Studies, *Proceedings of the 26th International Conference on Software Engineering and Data Engineering*, San Diego, USA, October 2017.
- [19] Qusef, A., Baker, C., and Muhanna, M., Social Commerce Quality Service from the Customer's Perspective, *Proceedings of the IEEE 2017 International Conference on Engineering and MIS (ICEMIS 2017)*, Monastir, Tunisia, May 2017, pp. 1-5.
- [18] Kiswani, J., Muhanna, M., and Qusef, A., Using Metadata in Optimizing the Design and Development of Enterprise Information Systems, *Proceedings of the IEEE International Conference on Information and Communication Systems (ICICS 2017)*, Irbid, Jordan, April 2017, pp. 188-193.
- [17] Wu, R., Muhanna, M., Dascalu, S. M., Barford, L., and Harris, F. C., Data Lossless Compression Using Improved GFC Algorithm with Multiple GPUs, *International Journal of Computers and Their Applications*, vol. 23 (4), December 2016.
- [16] Turabieh, H. and Muhanna, M., GA-based Feature Selection with ANFIS Approach to Breast Cancer Recurrence, *International Journal of Computer Science Issues*, vol. 13 (1), , 2016, pp. 11-21.
- [15] Muhanna, M., Virtual Reality and the CAVE: Taxonomy, Interaction Challenges, and Research Directions, *Elsevier Journal of King Saud University - Computer and Information Sciences*, vol. 27 (3), July 2015, pp. 344-361.

- [14] Zawati, S., and Muhanna, M., Arabic Mobile Applications: Challenges of Interaction Design and Development, Proceedings of the 10th IEEE Wireless Communications and Mobile Computing Conference (IWCMC), Nicosia, Cyprus, Aug. 2014, pp. 134-139.
- [13] Muhanna, M. and Jaser, E., HCI-Based Guidelines for Electronic and Mobile Learning for Arabic Speaking Users: Do They Effectively Exist?, Proceedings of the Springer HCI International Conference (HCII'2014), Universal Access in Human-Computer Interaction, Heraklion, Crete, Greece, June 2014, Springer International Publishing, pp. 378-387.
- [12] Muhanna, M. and Ghazaleh, H., Interactive Environment for Command and Control Simulation Scenarios inside the CAVE, Proceedings of the 2012 IEEE International Conference on Systems and Informatics, Yantai, China, IEEE Computer Society Press, May 2012, pp. 2113-2119.
- [11] Muhanna, M., Real Time Supervisor Intervention Software for Scenario Modifications in CAVE, Doctoral Dissertation, University of Nevada, Reno, USA, Aug. 2011.
- [10] Muhanna, M., Buntha S., Okamoto, S., McMahon, M. J., Dascalu, S., and Harris, F. C., CAVEMANDER: Creating 3D Command and Control Scenarios for the Cave Automatic Virtual Environment, Proceedings of the 16th International Conference on Distributed Multimedia Systems (DMS'10), Oak Brook, IL, USA, Oct. 2010, pp. 300-305.
- [09] Buntha, S., Muhanna, M., Dascalu, S., Harris, F. C., and Okamoto, S., A GUI Wizard for Developing Command and Control Applications in CAVE, Proceedings of the 4th IASTED International Conference on Human-Computer Interaction, St. Thomas, US Virgin Islands, USA, Nov. 2009, pp. 301-308.
- [08] Tackitt, B., Muhanna, M. and Dascalu, S., Prototype Details of the SmartphoneBased Researcher's Companion Software (RCS), Journal of Computational Methods in Sciences and Engineering (JCMSE), vol. 9(2), 2009, pp. 191-201.
- [07] Ghazaleh, H. and Muhanna, M., Enhancement of Throughput Time Using MSTCP Transport Layer Protocol for 4G Mobiles, Proceedings of the 5th IEEE International Multi-Conference on Systems, Signals, and Devices, Amman, Jordan, IEEE Computer Society Press, July 2008, pp. 105-111.
- [06] Tackitt, B., Muhanna, M. and Dascalu, S., Prototype Details of the SmartphoneBased Researcher's Companion Software (RCS), Proceedings of the ISCA 17th International Conference on Software Engineering and Data Engineering (SEDE-2008), Los Angeles, CA, USA, July 2008, pp. 30-35.
- [05] Muhanna, M., Nemutlu, B. De Armas, H., Hanchett, E., Norcross, Z., and Lee, R., Touch Screens and Handheld Devices for CSE Senior Projects and HumanComputer Interaction Courses, Poster, Instructional Enhancement Grant Workshop, Excellence in Teaching, University of Nevada, Reno, USA, Feb. 2008.
- [04] Muhanna, M., Dascalu, S., Harris, F. C., Elfass, S., and Karam, M., Specification and Design Aspects of the Academic Researcher's Assistant (ARA) Software for Mobile Devices, Proceedings of the 1st IEEE International Conference on Advances in Computer-Human Interaction (ACHI'08), S.L. Martinique, France, Feb. 2008, IEEE Computer Society press, pp. 95-100.
- [03] Muhanna, M., Exploration of Human-Computer Interaction Challenges in Designing Software for Mobile Devices, MS Thesis, University of Nevada, Reno, USA, May 2007.
- [02] Dascalu, S., Karam, M., Muhanna, M., and Reed, S., Using UML in a Non Software Design Task: Creating an Electronic Software Engineering Handbook, Proceedings of the 15th International Conference on Software Engineering and Data Engineering (SEDE'06), Los Angeles, CA, USA, July 2006, pp. 98-103.

- [01] Muhanna, M., Turabieh, H., Aljarrah, O., and Elsayad, A., Steganalysis of LSB Encoding in Digital Images Using GLCM and Neural Networks, Proceedings of the 3rd International Conference on Informatics and Systems (INFOS2005), Cairo, Egypt, March 2005, pp. 131-137.

## **GRANTS / PROJECTS**

---

- The MEDiterranean countries: Towards Internationalization at Home, Erasmus+ Programme of the European Union , Capacity building in Higher Education, 900,000 Euros, January 2020 – January 2023, Project Manager for LTCU.
- *Creating Digital Access to the Arts and Culture of the Areas Shaped by Islam*, DAAD Research Project, March 2017 – March 2019, member of the cooperation partner (PSUT).
- *Enhancing Quality of Technology-Enhanced Learning at Jordanian Universities*, eQTeL, TEMPUS project number 544491-TEMPUS-1-2013-1-ES-TEMPUS-SMGR, approved by the European Commission under grant agreement for 2013-4568. 1,108,666 Euros, 15 December 2013 to 14 May 2017, member.
- *Enhancing Quality Assurance Management in Jordanian Universities*, Tempus Project, 900,873.66 Euros, October 2012 to March 2016, PI.
- *Promoting ICT Dialogue and Cooperation with the MPC Towards Horizon 2020*, Co-funded by European Union, Framework Program 7, ICT, Grant Agreement 611433, member.

## **GRADUATE SUPERVISION**

---

- Rasha Agrabawi, User Experience for Children with ADHD, Challenges and Opportunities, MS Thesis, expected August 2018.
- Nour Khater, Arabic Usability Heuristics to Evaluate Arabic E-Commerce Websites, MS Thesis, expected January 2018.
- Razan Sawalha, Optimizing the User Experience of Social Media Platforms Using Business Intelligence Tools, MS Thesis, expected August 2017.
- Jalal Alkiswani, Smart EIS: Towards and End-to-End Enterprise Information System Framework, MS Thesis, August 2016.
- Yaser Saleh, Undercover Ethnography: Towards an Automated Framework to Study the Human Level of Interest, Master Thesis, May 2013.

## **INVITED TALKS AND PRESENTATIONS**

---

The following is a list of invited talks and presentations other than those made at conferences:

- Towards Better Outcomes from College to IT Industry: Challenges and Solutions, Zain Telecommunication and Applied Science University, Amman, Jordan, April, 2018.
- User Experience in the Arab World: Challenges and Directions, DAAD Digital Technologies and Cultural Heritage, Istanbul, Turkey, March 2017.
- Using User Experience Tools to Design Arabic Interfaces, Adobe InspireME 2016, Adobe Inc., Amman, Jordan, Nov. 2016
- ICT Applications in Education, 3<sup>rd</sup> International Workshop on Applications of ICT in Education, Healthcare and Agriculture, RSS Amman, Jordan, June 2016.
- Ten Skills You Need to Land Your First Job in Design, Workshop, Amman, Jordan, March 2016.

- Usability in the UX Process, Adobe InspireME 2015, Adobe Inc., Amman, Jordan, Nov. 2015.
- Quality Assurance at Princess Sumaya University for Technology: Experiences and Lessons Learned, The National Agency for Quality Assessment and Accreditation of Spain, ANECA, Madrid, Spain, Sep. 2015.
- The Culture and Model of Quality Assurance at Princess Sumaya University for Technology, Sapeinza University, Rome, Italy, June 2015.
- Interaction Design for Graphic Designers, SAE Amman, June 2010.

## **TRAINING AND CERTIFICATIONS**

---

- Internal Quality Assurance Management, Sapienza University of Rome, Italy, June 2015.
- UI Design Patterns, Interaction Design Foundation, 2015.
- Building a Reviewer Capacity, Quality Assurance Agency for Higher Education (QAA), 2014.
- External Reviewer Training, Quality Assurance Agency for Higher Education (QAA), 2014.
- Java Enterprise Technologies, 2013.
- Adobe Certified Instructor – Photoshop, 2004.
- Adobe Certified Expert - Photoshop, 2004.
- Microsoft Certified Systems Engineer, Windows Server, 2003.

## **OTHER PROFESSIONAL ACTIVITIES**

---

### **Associate Editor**

- International Journal of Computers and Their Applications, May 2013 - Present

### **Program Committee Member (selected)**

- HCI International, 2019.
- CSEDU, Italy, 2018.
- HCI International, Canada, 2017.
- SDS, Germany, 2016.
- CSEDU, Italy, 2015.
- AICCSA, Morocco, 2015.
- CSEDU, Spain, April 2014.
- IEEE CTS, USA, 2013.
- ICICS, Jordan, April 2012.
- IEEE CSE, Spain, April 2010.
- IASTED HCI, USA, November 2009.
- IEEE ITNG, UK, November 2007.

### **Journal Article Referee**

- International Journal of Human Computer Interaction. One review.
- AIS Transactions on Human Computer Interaction. Two reviews
- International Journal of Mobile Human Computer Interaction. Two reviews.
- International Journal of Computers and Their Applications. Two reviews.
- Elsevier Journal of the Science of Computer Programming. One review.

### **Refereed Conference Proceedings Reviewer (selected)**

- SEDE 2021 - ITNG 2022 - HCII 2018 - SEDE 2018 - SEDE 2017 - SDS 2017 - HCII 2016 - SEDE 2016 - ICICS 2015 - HCII 2015 - CoVE 2013 - ICICS 2012 - CAINE 2010 - WMSCI 2010 - CTS 2010 - CHI 2010 - CSEDU

2010 - ACHI 2010 - HCI 2009 - ITA 2009 - SEDE 2009 - ICSEA 2009 - CTS 2009 - ITNG 2008 - MobileHCI 2008 - ITNG 2008 - HCI 2007 - CATA 2007.

## **SERVICE INVOLVEMENT**

---

### **Luminus Technical University College:**

- Member, QA Higher Committee, 2020 – present.
- Chair, QA Observation Team for online and classes, 2020 – present.
- Project Director, Implementation of the new CRM and SIS system, 2017- 2019.
- Chair, Student and Faculty Evaluation Committee, 2017-present.
- Chair, Committee for Developing new Bachelor Degree Regulations and Instructions, 2018 – present.
- Chair, Establishing an ICT School and Coding Boot-Camps, 2018.

### **Princess Sumaya University for Technology:**

- Member, Local Ranking Committee, 2017.
- Member, PSUT Curricula Review and Evaluation Committee, 2016-2017.
- Member, PSUT Master Plan Committee, 2016-2017.
- Chair, Spreading Quality Assurance Culture at the University, PSUT, 2016.
- Member, Committee of Employee Evaluation and Assessment Review, PSUT, 2016.
- Member, Enhancing QS Ranking, 2015-present.
- Member, Student Awards and Competition Committee, PSUT, 2015.
- Member, Higher Committee for Quality Assurance, PSUT, 2014-present.
- Chair, Searching and Hiring Committee of Secretaries, PSUT, 2014.
- Member, Curriculum Review Committee, Computer Graphics, PSUT, 2013.
- Chair, Organizing Committee, Student Council Election for King Hussein School of Computing Sciences, PSUT, 2012, 2013, and 2015.
- Member, Committee of Administrative Job Titles Review, PSUT, 2013.
- Chair, Workshops and Student Exhibits Committee for the preparation of the ceremony of the 21st anniversary, 2012.
- Member, Executive Board, Jordanian Software Quality and Testing Board September 2012 - present.
- Member, PSUT Graduation Committee, 2012.
- Chair, Organizing Committee, International Conference on Cloud Computing, 2013.
- Member, Steering Committee, Arabic Digital Content Workshop, 2011-2012.
- Chair, Media Team, ACM Arab Collegiate Programming Contest, 2012-2014.
- Member, Steering Committee, ACM ACPC, 2011-2014.
- Member, Organizing Committee, ACM JCPC, 2011.
- Chair, Editorial Committee, Website Content, PSUT, 2011-2015.

## **PROFESSIONAL AFFILIATION**

---

- Institute of Electrical and Electronics Engineering (IEEE), Member
- Interaction Design Foundation, Professional Member
- Jordan Computer Society (JCS), Member

## **AWARDS AND SCHOLARSHIPS**

---

- Princess Sumaya University for Technology Trophy of Excellence, Amman, Jordan, 2012, and 2015.

- Outstanding International Graduate Student Award and Scholarship, Graduate Student Association, University of Nevada, Reno, 2008, 2009, and 2010.
- Outstanding Teaching Assistant Award in Science, Technology, Engineering, and Mathematics (STEM), Excellence in Teaching Program, Core Curriculum Office, and Graduate Student Association, University of Nevada, Reno, 2008.
- Teaching Recognition Award, Excellence in Teaching Program, Core Curriculum Office and Graduate Student Association, University of Nevada, Reno, 2006.
- Award of Honor Certificate for Individual Creativity, Jordan Computer Society 1997 and 2001.
- Golden Trophy Award for Excellence in Essay Writing, United Nations Environment Program, Bahrain, 1999.

## **TEACHING PORTFOLIO**

---

### **Courses Taught at PSUT:**

- Advanced Software Engineering (Graduate Level)
- Advanced Human-Computer Interaction (Graduate Level)
- User Experience
- Human Computer Interaction
- Advanced Interaction Design
- Artificial Intelligence for Games
- Introduction to Computer Science
- Structured Programming
- Object Oriented Programming
- Application Tools for Fine Arts
- 2D and 3D Rigging and Animation
- Software Engineering

### **Online Courses Designed and Taught at Kwn Education**

- Fundamentals of User Experience (450 international students registered)
- Computer Systems Requirements Analysis (in preparation)
- Interactive Media Design and Prototyping (in preparation)

### **Curricula Reviews and Updates**

- Advanced Software Engineering (Graduate Level)
- 2D and 3D Rigging and Animation
- Human-Computer Interaction

### **Curricula Development of Courses Taught for the First Time at PSUT**

- Advanced Interaction Design
- User Experience
- Advanced Software Engineering (Graduate Level)
- Advanced Human-Computer Interaction (Graduate Level)

## **STUDENT EVALUATION**

---

- My average student evaluation is 96.4%
- Detailed student evaluation is available upon request.