CURRICULUM VITA

Nawaf O. Alsrehin, Ph. D

Fulbright Visiting Research Scholar [Associate Professor]
Computer Sciences Department
School of Computers, Data, and Technology
University of Wisconsin – Madison
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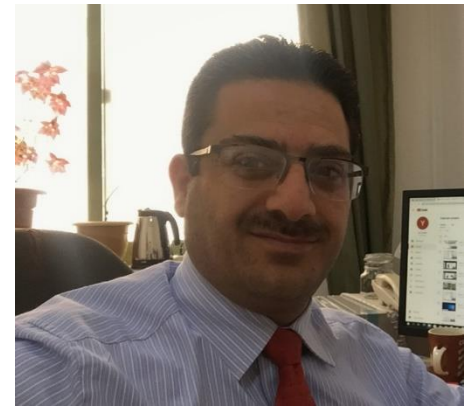Email: n_alsrehin@yu.edu.jo, alsrehin@wisc.edu
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PROFESSIONAL OVERVIEW

I consider teaching is a very important and enjoyable academic duty. While there are many reasons why teaching is important, the most compelling one is that it is one of the most effective ways to pass on our knowledge, thus ensuring that our field grows and prospers. I enjoy teaching for two reasons. First, there is almost nothing more rewarding than seeing someone's eyes light up as they comprehend a new concept. And second, in the process of teaching a difficult concept to others, we ourselves tend to gain a deeper understanding of this concept. Teaching is exhilarating. I never feel more energized than after a class that has gone well.

RESEARCH AREA

My research focuses on using **Artificial Intelligence** and **Machine Learning** algorithms along with **Computer Vision** and **Image Processing** techniques to solve some problems in the transportation systems. Recently, I have been started working in the area of **Multimedia Security, Steganography** and **Cryptography**.

Moreover, I am interested in **Computer Graphics** and **Animation**, **Game Development**, **Mobile Applications Development**, Pattern Recognition, Video Transcoding and Streaming, Multimedia Communications, and content-based multimedia retrieval systems and applications. I dedicate my life, as a faculty member, serving our generations, our community, and our field as well.

EDUCATION

2011-2016 **Ph.D., Computer Science**, Utah State University, Logan, UT, USA. GPA 3.92/4.0. Title: Toward a General Parametric Model for Assessing the Impact of Video Transcoding on Objective Video Quality Supervisor: Dr. Stephen Clyde: swc@mdsc.com.

2003-2006 **M.Sc., Computer Information Systems**, Yarmouk University, Irbid, Jordan, **2006**, GPA 88.1%, ranking as 3rd out of 17. Title: Applying Partition Around Medoids (PAM) Like Clustering Algorithm for Enhancing Retrieval Processes in Arabic Language Text Retrieval System Based on Different Similarity Measures.

1999-2003 **B.S., Computer Science**, Yarmouk University, Irbid, Jordan, **2003**, GPA 71.1%.

EXPERIENCE

Sept. 2022- now	**Fulbright Visiting Research Scholar [Associate Professor],** Computer Science Department, University of Wisconsin-Madison, Madison, WI, USA. Working with Dr. Mohit Gupta.
2021 - 2022	**Associate Professor**, Computer Science Department, Faculty of Information Technology and Computer Science, **Yarmouk University**, Irbid, Jordan. **[Currently I am in a Sabbatical Leave]**
2017 – 2019	**Department Head**, Computer Information Systems Department, faculty of Information Technology and Computer Science, **Yarmouk University**, Irbid, Jordan.
2017	**Visiting Scholar/Faculty Exchange**, LIRMM research lab, University of Montpellier, France, supported from Erasmus+ Program [Two weeks].
2016 -2021	**Assistant Professor**, Information Systems Department, Faculty of Information Technology and Computer Science, Yarmouk University, Irbid, Jordan.
2015	**Lab Instructor** for the "CS1410: C++ Programming Language" course, Computer Science Department, **Utah State University**, Logan UT, USA.
2013	**Instructor** for the "CS2410 Graphical User Interface Development in Java" course, Computer Science Department, **Utah State University**, Logan UT, USA
2011-2013	**Adobe Flash developer**, The Engineering Education Department, Utah State University, with Dr. Ning Fang (ning.fang@usu.edu).
2012 - 2016	**Graduate Teaching/Research Assistant**, Computer Science Department, **Utah State University**, Logan UT, USA
2008 - 2011	**Full-time lecturer**, Computer Information Systems Department, Faculty of Information Technology and Computer Science, **Yarmouk University**, Irbid, Jordan
2006 - 2008	**Part-time lecturer** in the Computer Science department, Jordan University of Science and Technology (Irbid – Jordan), Yarmouk University (Irbid – Jordan), Arab Open University (Amman – Jordan), and Al-Albayt University (Al-Mafraq – Jordan).

TRAINER

- Accreditation and Quality Assurance Center, Yarmouk University, training the new faculty members on "Integration of E-learning in Higher Education Institutions":
  - E-learning Platform Management – Moodle
  - Adding Educational Resources
  - Online Exams

o Communication with students

PUBLICATIONS

- **Nawaf Alsrehin** and Rami Malkawi, Perceptual Quality Evaluation of Synthetic Vidoes Distorted by Compression and Transmission [under processing].
- **Nawaf Alsrehin**, A Full-Automated System to Detect Driver's Mobile Phone Usage While Driving Based on Computer Vision and Artificial Intelligence [under processing].
- **Nawaf Alsrehin** and Yasmeen Khasawneh, A Full-reference Objective Model for Assessing the Video Motion Quality, The IEEE/CVF Conference on Computer Vision and Pattern Recognition 2023, Canada, Vancouver [under review].
- Ahmad F Klaib, **Nawaf O Alsrehin**, Wasen Y Melhem, Haneen O Bashtawi, Aws A Magableh, (**2021**), Eye Tracking Algorithms, Techniques, Tools, and Applications with an Emphasis on Machine Learning and Internet of Things Technologies, *Expert Systems with Applications*, Volume 166. ⟐ Clarivate˙
- Aws A. Magableh, Mohanad A. Almakhadmeh, **Nawaf O. Alsrehin**, Ahmad F. Klaib, (**2020**), Smart Traffic Light Management Systems: A Systematic Literature Review, *International Journal of Technology Diffusion (IJTD)*, Pages: 22-47. IGI Global
- **Nawaf O. Alsrehin**, A Mu'tasem (**2020**), Face Recognition Techniques using Statistical and Artificial Neural Network: A Comparative Study, *IEEE 3rd International Conference on Information and Computer Technologies (ICICT)*, San Jose, USA, Pages 154-159. ◈IEEE
- **Nawaf O. Alsrehin**; Ahmad F. Klaib; Aws Magableh. (**2019**). Intelligent Transportation and Control Systems Using Data Mining and Machine Learning Techniques: A Comprehensive Study. *IEEE Access*, volume 7, Pg:49830-49857. ⟐ Clarivate˙
- **Nawaf O. Alsrehin**; Ahmad F. Klaib; (**2019**). VMQ: an algorithm for measuring the Video Motion Quality. *Bulletin of Electrical Engineering and Informatics*. Vol. 8, No. 1, pp. 231-238. Scopus˙
- Ahmad F. Klaib, **Nawaf O. Alsrehin**, Wasen Y. Melhem, and Haneen O. Bashtawi. (**2019**). IoT Smart Home Using Eye Tracking and Voice Interfaces for Elderly and Special Needs People. *Journal of Communications*. Vol. 14, No. 7, July 2019. Pages: 614-621. Doi: 10.12720/jcm.14.7.614-621. Scopus˙
- **Nawaf O. Alsrehin** and Bilal Abul-Huda, A General Structure for the Approaches Used in the Human Action and Activity Recognition from Video, *International Arab Conference on Information Technology (ACIT)*, Sfax University, Tunisia, December 22-24, **2017**.
- **Nawaf O. Alsrehin** and Ahmad Klaib, An Algorithm for Measuring the Video Motion Quality based on Frame Rate Reduction, the 2nd International Computer Sciences and Informatics Conference (ICSIC). Sept. 23-25, **2017**, Amman, Jordan.
- **Nawaf O. Alsrehin**, Toward a General Parametric Model for Assessing the Impact of Video Transcoding on Objective Video Quality, **2016**. All Graduate Theses and Dissertations. 4888. http://digitalcommons.usu.edu/etd/4888.
- **Nawaf O. Alsrehin** and Stephen W. Clyde, QoS-Aware Video Transcoding Service Selection Process, *Journal of Media & Mass Communication*, Vol. 1, No. 2, pp. 61-68, (**2015**). Scopus˙
- **Nawaf O. Alsrehin**, QoS-aware Video Transcoding Service Composition Process in a Distributed Cloud Environment, *International Journal of Innovative Research in Computer and Communication Engineering*, Volume 3, pp 3726-3748, **2015**. Scopus˙
- Sameh Ghwanmeh, Ghassan Kanaan, Riyad Al-Shalabi, and **Nawaf O. Alsrehin**, Automatic Query Expansion for Arabic Text Retrieval System Based on an Association

Clustering Thesaurus, *Information Technology Journal*, vol. 4, issue 4, pp 476-483, **2005**.

FUNDED PROJECTS

- **Video Quality Evaluation for Synthetic Video Sequences.**
  - Funding Agency: Yarmouk University, Department of Scientific Research
  - Budget : **$ 9007.72**
  - Year: 2019-2020
  - Role: PI

- **Traffic Management System using IoT.**
  - Funding Agency: Yarmouk University, Department of Scientific Research
  - Budget : $ **14,073.52**
  - Year: 2018-2020
  - Role: PI

- **Smart home system for people with special needs using the Audio interface and remote-control using eye movement.**
  - Funding Agency: Yarmouk University, Department of Scientific Research
  - Budget : **$13,498.76**
  - Year: 2018-2020
  - Role: Co-PI

- **A Condensation-based Approach to Anonymize Network Logs.**
  - Funding Agency: RIPE-NCC community projects
  - Budget : **€ 32,000.00**
  - Year: 2019-2020
  - Role: Co-PI

- **A Competency-based Career Focused Training for Syrian and Jordanian Students in Northern Jordan.**
  - Funding Agency: GIZ
  - Budget : **€ 122,860.26**
  - Year: 2019-2020
  - Role: Co-PI

CONFERENCES/JORNALS

Conference/Journal	Role	Date
4th International Conference on Electronic Design	Reviewer	Nov 8-9, 2018
2nd Mosharaka International Conference on Digital Signal Processing (MIC-Signals 2020)	Committee Member	May 29-31, 2020
IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology	Reviewer	9-11 April, 2019
IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology	Committee Member	9-11 April, 2019
9th International Conference on Advanced Information Technologies and Applications (ICAITA 2020)	Reviewer and Committee Member	Jul 11-12, 2020

2020 IEEE Global Conference on Artificial Intelligence and Internet of Things (GCAIoT)	Reviewer	December 12-15, 2020
IEEE Access	Reviewer	2020

MEMBERSHIPS

- American Society for Research (ASR), www.asr.org
- IEEE Advance Teaching for Humanity, Graduate Student, Utah State University, 2015, www.ieee.org
- Scientific Committee (SC) member for the IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), 2019).
- Membership of the Golden Key International Honor Society, Utah State University, Logan, UT, USA, 2012.

AWARDS

- **Best Oral Presentation Award**, in the Second International Conference on Multimedia Communication Technology (ICMCT 2015), Hong Kong, September 19-21, 2015.

SCHOLARSHIPS/GRANTS

- A **Scholarship** from Yarmouk University to pursue my Ph.D. in computer science, September 2011 to August 2015, Utah State University, USA.
- **Travel Grant** from Yarmouk University to attend the 3rd International Conference on Information and Computer Technologies (ICICT), IEEE, San Jose, USA, March 7-12, 2020.
- **Travel Grants** from: RGS graduate student, Dean travel grant, and Computer Science Department travel grant, Utah State University, USA to attend the 2nd International Conference on Multimedia and Communication Technologies (ICMCT 2015). Hong Kong, September 19-20, 2015.

MASTRE STUDENTS - SUPERVISOR

- Yasmine F. Khasawneh (2017930008), Master Student, A Full-Reference Objective Model for Assessing the Video Motion Quality, (Graduated in August 2022)

MASTER THESIS/PROPSAL DISCUSSION - COMMITTEE MEMBER

- Mohannad. A. M. Al-Makadmeh (2017930001), Thesis Title: Using Video Oculography to Detect Strabismus. (**27/12/2020**).
- Ahmad M. Al. Al-Omari (2017930017), Thesis Title: An Adaptive Traffic Light System using Machine Learning (**17/11/2020**).
- Khalid Al-Khateeb (2015930002) A Knowledge-based Technology Transfer to Predict Daily Activities in Smart Home (**26/12/2017**).
- Zahiah M. A. Al-Assoolly (2015930018) Using Accelerated Particle Swarm Optimization (PSO) Algorithm for Arabic Query Expansion (23/4/2019).

EXTERNAL COMMITTEES

- The Higher Education Accreditation and Quality Assurance Commission:
  - Committee Member: Setting standards for the special accreditation of *Computer Graphics and Animation* and submitting it to the authority.
  - Visit Al-Balqa Applied University (the Center) to study the application for special accreditation for the specialization in *Computer Graphics and Animation*.
  - Setting standards for special accreditation for the *Digital Film Industry* (Bachelor) and submitting it to the authority.

    o Visit Luminous University College to study the application for special accreditation for the specialization in *Digital Film Industry* (Bachelor).

DEPARTMENT/FACULTY COMMITTEES

- Quality Assurance – Teaching and Courses, (2016/2017), (2017/2018), (2018/2019)
- Proposing a study Plan for a Master Program in Multimedia Systems (2016/2017).
- Research Activation Committee in the CIS department (2016/2017)
- Supporting the collaboration between Yarmouk University and the Ministry of Communications (18/8/2017).
- Graduate Committee to update the Study Plan for the CIS - Master program (2016/2017).
- Organizing Committee for the IT Scientific Day (17/1/2018).
- Faculty advisory/strategic plan committee (2017/2018)
- Programming club committee (2017/2018)
- Faculty extracurricular activities committee (2017/2018)

DEPARTMENT HEAD - COMPUTER INFORMATION SYSTEMS DEPARTMENT [2017-2019]

- Heading the committees formed in the department (the study plan and examination committee, the higher studies committee, the quality control committee, the scientific committee) for the bachelor's and master's stages in the department, following them up and preparing periodic reports on their work.
- Organizing and following up the department council meetings and calling for them.
- Follow up of undergraduate students, checking the submitted forms, and helping them to solve problems during registration.
- Follow up of master's students and help them to solve problems during registration.
- Follow up and check the forms submitted by postgraduate students and submit them to the postgraduate studies committee in the department.
- Preparing and checking the academic schedule for all the divisions in the department.
- Preparing and checking the normal and additional teaching load for the faculty members in the department in accordance with the instructions in force.
- Checking the transactions of promotion, transfer, installation, and vacations of faculty members.
- Follow up the annual and sick leaves of the faculty members in the department and the department secretary.
- Preparation of the department's budget project.
- Follow up on quality control activities and form committees for this purpose.
- Follow up and document the scientific activities of the faculty members.
- Follow up on graduation projects for undergraduate students, while converting them into technological production projects.
- Follow up exams and verify the integrity of their conduct.
- Preparing and updating the department's strategic plan.
- Preparing an explanatory several brochures and flyers for the department.
- Working on an Agreement of Collaboration (AoC) between Yarmouk University and Utah State University for establishing a Master program.

POSTERS

- Nawaf O. Alsrehin and Stephen W. Clyde, "VTOM: Toward A General Parametric Model for Assessing the Impact of Video Transcoding on Objective Video Quality", GrTS Research Week, Utah State University, April 2016, USA.

- Nawaf O. Alsrehin and Stephen W. Clyde, "QoS-Aware Video Transcoding Service Selection Process", Computer Science Department, Utah State University, Spring 2014, Fall 2015.
- Nawaf O. Alsrehin and Stephen W. Clyde, "QoS-Aware Video Transcoding Process", Computer Science Department, Utah State University, Industry Day, Spring 2014.

TRAINING AND WORKSHOPS

Date	Title	Organization	Location
May 14, 2018	Alexander Von Humboldt	DAAD	Irbid, Jordan
March 1, 2017	Web of Science and EndNote Training	Thomson Reuters	Irbid, Jordan
January 17-19, 2017	Proposal Writing for H2020 EU Funded Opportunities	SRTD-II	Amman, Jordan
August 21-25, 2016	Workshop to develop the performance of new faculty members	Yarmouk University-Faculty Development Center	Irbid, Jordan
August 13 - 22, 2012	International Teaching Assistant workshop (ITA)	Intensive English Language Institute, Utah State University	Logan, UT, USA
December 26, 2009	Using Interactive Smart Boards and Tools in Collaborative Learning	Ketab Technology	Irbid, Jordan
June 28, 2009 - July 29, 2009,	Electronic Learning using Moodle	Queen Rania Center for Jordanian Studies and Community Services, Yarmouk University	Irbid, Jordan
June 10 – 12, 2008	Design and Evaluation of Innovation Policy in Developing Countries	Jordan Innovation Center, Royal Scientific Society, and United Nations University in Princes Somayah University	Amman, Jordan

PERSONAL/SCIENTIFIC SKILLS

- Game Development (Unity Framework and C#).
- Programming Languages: (Java, JavaScript, NodeJS, Python, and C#)
- Mobile Applications Development (Android Studio).
- Web Programming development (XHTML, HTML, XPath, XQuery, XML)
- Database Management Systems: (Advanced Access 2019, Oracle10g, MySQL Workbench, Hadoop, Firebase)
- Web Page development (ASP.NET, Ionic, AngularJS)
- Object Oriented Methodologies (Modeling Languages): UML, Booch, and Coad Methodology.
- Modeling Tools: Rational Rose, Smart Draw, Meta Mill, Request Brow, Visual Paradigm UML 8.3.
- Geographic Information System (GIS) Software Tools: ArcView 3.2, ArcGIS.
- Multimedia Software: Adobe Animate, Adobe Photoshop CS5, Adobe Illustrator CS3, and Adobe Creative Cloud Applications
- SQL tools MySQL 5.2 CE, OQL, SQL server.
- Image Processing applications using Python.
- Parallel Computing: MPI-C++ under UNIX. Scripting Languages: PostScript, JavaScript.

PRACTICAL SKILLS

- Participated in evaluating TransJ project. This project is proposed by Anas Alsoboh at the computer science department, Utah State University. My task was implementing three tasks using TransJ.
- Participated in evaluating CommJ project. This project is proposed by Ali Raza at computer science department at Utah State University. My task was implementing three tasks using CommJ.
- Participated in developing a computing system of Principal Basma Hospital in Jordan (Visitor, Staff, and Accounting), and going on programming it for Database Analysis course project,
- Participated in analyzing and developing of Jordan Micro Credit Company (JMCC) as a requirement of System Analysis course project,
- Participated in analyzing and programming of Athletic Activity Office in Al-Yarmouk University as a requirement of Fourth Generations Programming Language course projects by using Oracle 8i with Developer 6.0,
- Participated in dealing with re-establishing of al-Aqaba institutionary system (practical study),
- Participated in establishing a Web site for the Marine Science Center in Aqaba.

COURSES THOUGHT

- **Yarmouk University, Irbid, Jordan (2016-current)**
  - Summer and Spring 2021/2021
    - CS 281 Multimedia Systems **[Undergraduate Level]**
    - CS 411 Developing Mobile Applications-Android **[Undergraduate Level]**
  - Fall 2021/2021
    - AI681: Computer Vision and Image Processing **[Graduate Level]**
    - CS 281 Multimedia Systems **[Undergraduate Level]**
    - CS 411 Developing Mobile Applications-Android **[Undergraduate Level]**
  - Summer 2020/2021
    - CS 281 Multimedia Systems **[Undergraduate Level]**
  - Spring 2020/2021
    - CS 281 Multimedia Systems **[Undergraduate Level]**
    - CS 411 Developing Mobile Applications-Android **[Undergraduate Level]**
    - CIS 433 Network Information Management **[Undergraduate Level]**
  - Fall 2020/2021
    - CS 281 Multimedia Systems **[Undergraduate Level]**
    - CIS 492 Advanced Topics in Multimedia Systems **[Bachelor Level]**
    - CIS 695 Graduation Project **[Graduate Level]**
  - 2016-2021
    - CS104 Introduction to Information Systems**[Bachelor Level]**
    - CS 110 Visual Basic Development **[Bachelor Level]**
    - CIS 227 Human Computer Interaction **[Bachelor Level]**
    - CIS 498 Practical Training **[Bachelor Level]**
    - CIS 499 Graduation Project **[Bachelor Level]**
    - CIS 685: IoT-Advanced Multimedia Systems **[Graduate Level]**

- **Utah State University (USU), Logan UT, USA (2011-2016)**
  - CS214 Graphical User Interface Development in Java
  - CS101 C++ Programming Language

- **Yarmouk University, Irbid, Jordan (2008-2011)**
  - Computer Skills I and II
  - Informatics and Society
  - Introduction to Computer Science
  - Introduction to Information System
  - Introduction to Computer Information System
  - HTML Programming
  - Software Engineering Lab (Rational Rose, Request Pro., and N-Unit)
  - Multimedia Systems Lab (Adobe Flash CS3, Photoshop CS3, Illustrator CS3)
  - Data Structure
  - Discrete Mathematics
  - Programming using Visual Basic.NET

- **Jordan University of Science and Technology (JUST), Irbid, Jordan (2006-2008)**
  - CS 110 Programming using C++
  - CS 116 Programming using Visual Basic.NET

- **Arab Open University, Amman, Jordan (2006-2008)**
  - Computer Skills I and II

- **Al Albayt University, Al Mafraq, Jordan (2006-2008)**
  - Computer Skills I and II

REFERENCES

- Prof. Dr. Samer Samarah, Full Professor, Vice President, Yarmouk University, Jordan, samers@yu.edu.jo, office: (+962) 2 7211111 Ext. 2632.
- Dr. Moy'awiah A. Al-Shannaq, Associate Professor, Head of the Computer Science Department, Yarmouk University, Jordan, moyawiah.s@yu.edu.jo, Mobile: +962791317437, office: (+962) 2 7211111 Ext. 2561
- Dr. Stephen Clyde, Associate Professor, Computer Science Department, Utah State University, stephen.clyde@usu.edu, Phone (435) 797-2307, Old Main 401D [PhD Supervisor].