

BRIEF CURRICULUM VITEA (CV)

1. PERSONAL DATA

Full Name : **SALEH ALI KHATTAP ALOMARI**

Nationality : **JORDAINIAN**

Current Position : **ASSOCIATE PROFESSOR**

Qualifications : **PhD**
Field: **Computer Science**

Specialization : **Multimedia, Networking VoD System over Mobile Wireless Network and MANET's, Sensor Networks, Broadcasting and Caching.**

New Interesting Area : **Artificial Intelligence, Image Processing/ Segmentation, Medical Diagnosis, Optimization, Data Clustering.**

Address : **Faculty of Science and Information Technology, Jadara University, 733, Irbil 21110, Jordan.**

Tel (office) at Jadara : **+962-2-7201222 ext. (555)**

Fax (Jordan-Jadara) : **+962-2-7201210/+962-772373517**

Mobile No. : **+962-772373517**

Email : Alomari08@gmail.com / omari08@jadara.edu.jo

Website : http://www.jadara.edu.jo/sections.php?type=mod_staffdetails&stid=10187&facid=52&secid=184

Scholar.google.com : https://scholar.google.com/citations?user=m_9f8vIAAAAJ&hl=en

Researchgate.net : https://www.researchgate.net/profile/Saleh_Alomari

ORCiD : <https://orcid.org/0000-0001-8330-3223>



2. ACADEMIC QUALIFICATION

Degree	Topic	Year	University
PhD	A Video on Demand System for Heterogeneous Wireless Mobile Networks	2013	Universiti Sains Malaysia, Penang, Malaysia.
M.Sc.	Digital Recognition using Neural Network	2007	Universiti Sains Malaysia, Penang, Malaysia.
B.Sc.	A Guiding Film for Instructions of Having a Driver License using Visual Basic and Flash MX	2005	Jerash University, Jordan

- **JERASH UNIVERSITY, JORDAN**

B.Sc. of Science Computer (in February 2005)

Adviser: Associate Professor Dr. Dr Mohamed Maitah

Area of Study: Digit recognition.

Project: “A guiding film to show the instructions of having a driver license by using visual basic language to computerize license authority system and flash MX program to draw the building of this authority with animation to transport from level to another”.

- **UNIVERSITI SAINS MALAYSIA, PENANG, MALAYSIA**

Master of Science (Computer Science) submitted and presented the final project on 30 May 2007. (Convocation In August 2007)

Adviser: Associate Professor Dr. Putra Sumari

Area of Study: Multimedia System, Digit recognition.

Thesis: Digital Recognition Using Neural Networks

- **UNIVERSITI SAINS MALAYSIA, PENANG, MALAYSIA**

P.hD (Computer Science) finish viva on 25 April 2013. (Convocation In September 2013)

Thesis: “VIDEO ON DEMAND SYSTEM FOR HETEROGENEOUS MOBILE WIRELESS NETWORKS”

Adviser: Professor Dr. Putra Sumari

Area of Study: Multimedia System, Mobility System, Broadcasting and Caching

3. WORK EXPERIENCE

- Member of the world ranking and rating head committee (2023 until now) on the University level. Achievements of the committee led to Jadara university being placed on the world map as follows:
 - 2024- Entered the QS Arab ranking (ranked 182 on the Arab region)
 - 2025- Entered the QS World ranking.
 - 2024- Obtained five stars in the teaching, employability, social responsibility, facilities and inclusiveness; with four stars overall rating.
 - 2024- Entered the Times Arab region rank in 2024 (ranked 121-140 on the Arab region).
 - 2024- Achieved a rank of 301-400 Worldwide in the Times Impact Rank.
 - 2024- Achieved a distinguished place in the UI GreenMetrics Ranking of 182 Worldwide.
 - 2024- Achieved a distinguished place in the Arab Ranking for Universities (ranked 80 on the Arab world).
- Vice Dean of the Faculty of Science and Information Technology, Jadara University, Irbid, Jordan, 2020, 2022-until now.
- Head of the IoT Department, Jadara University, Jordan 2022-2023.
- Head of the Software Engineering Department, Jadara University, Jordan 2021-2022.
- Director of the E-learning center, Jadara University, Irbid, Jordan, 2019/2020 - 2022.
- Head of the Software Engineering Department, Jadara University, Irbid, Jordan 2019/2020
- Assistant Dean of the Faculty of Science and Information Technology for Student Affairs & Quality Assurance, Jadara University, Irbid, Jordan 2019/2020.
- Chairman of the Supervising Committee for scientific competitions, Jadara University, Irbid, Jordan 2014-2020. (ieeextreme, ACM, ACPC, JCPC, ArabellaCPC...etc)
- Member of the Proficiency Examination Committee, Academic Development and Quality Assurance Committee, Committee of Study Plans and Equivalence of Courses and Examinations at the College, Jadara University, Irbid, Jordan 2017-2020.

- Director of the University's qualification and Development Center, Quality Center 2019 - 2020.
- Head of Computer Networks Department, Jadara University, Irbid, Jordan 2014-2016
- Teacher at Faculty of Science and information Technology at Jadara University from 1/9/2013 until now, with the current Main Research Field are the computer science and networking.
- Managing director of ICT Technology and Research and Development Division (R&D) in D&D Professional Consulting Company, Malaysia from 2010-2013.
- ACM Programming Trainer (Advance Problems and Solutions) International Collegiate Programming Contest.
- School teacher in Ministry of Education from 4/9/2005 to 21/2/2006.
- Computer maintenance trainer in Alnajjar center for two years.
- ICDL trainer in Alnajjar center for two years.
- Internet supervisor in Yahoo internet (maintenance for the network) center for one year.
- Managing Director of Research and Development Division (R&D) in D&D Professional Consulting Company. (Malaysia)
- Research officer for the following projects:
 - i. The project entitled "Mobile Video on Demand System".
 - ii. The project entitled "Video Placement Scheme for Solid State Disk (SSD) based Storage System".
 - Consultation and planning of purchasing and installing "server" for the system above.
 - Develop programs and designing the "Video on Demand system over Mobile Ad hoc Network".
 - Design and administer the website for multimedia computing research laboratory (www.mcrg.cs.usm.my), School of Computer Science.
 - Manage the registration papers for all student publications under my supervision. Such as (editing research papers, the selection of important journals or conferences, to revise the registration fee and presentations).

4. Conference Committees:

- Local Conference Chairs, ICSDAA-2019, 1st – 3rd December, 2019 at Jadara University, Jordan.

- Conference Chairs, Scientific Committee, ICSDAA-2020, 6-8 December, 2020 at Canadian University of Dubai (CUD).
- Member Technical Program Committee (TPC), International Conference on Intelligent Engineering and Management (ICIEEM)-2020, at London, UK under IEEE United Kingdom and Ireland Section, on the dates 22-24, April, 2020.

5. AWARDS

- 1.** Best Researcher/ Publisher at the faculty of Science and Information Technology, Jadara University, 2019(For the highest number of researches and the highest percentage of citations) .
- 2.** Best Researcher/ Publisher at the faculty of Science and Information Technology, Jadara University, 2018. (For the highest number of researches and the highest percentage of citations).
- 3.** Best Researcher/ Publisher at the faculty of Science and Information Technology, Jadara University, 2017-2018.
- 4.** Recipient of Excellence in Teaching Award-2018.
- 5.** Best Project in the 8th National Technology Parade in 29th April 2015 at Jordan University. “Smart Parking System”.
- 6.** Research officer and assistant for the above tasks, for 12 months starting from January 2011 to December 2011, with Prof. Dr. Putra, Sumari, RM 12,000.00.
- 7.** Research officer and assistant, for 9 months starting from Jan 2013 to September 2013, with Prof. Dr. Putra, Sumari.
- 8.** Best Paper Award – Computer Science Postgraduate Colloquium, Universiti Sains Malaysia (USM), Penang, MALAYSIA.
- 9.** High Impact Factor Paper – Computer Science Postgraduate Colloquium 2011, Naza Talyya Hotel, Universiti Sains Malaysia (USM), Penang, Malaysia, 5-6 July 2011

10. Two High Impact Factor Paper – Computer Science Postgraduate Colloquium 2012, lecture Hall A, Universiti Sains Malaysia (USM), Penang, Malaysia, 16-17 July 2012.

11. Best Paper Award – World Academy of Science Engineering and Technology, International Conference on Computer Networks and Security (ICCNS 2011), Paris, France, 14-16 Nov 2011.

12. Best Paper Award- *Transactions on Internet and Information Systems (KSII)*, (in Multimedia and Communication), Effective Broadcasting and Caching Technique for Video on Demand over Wireless Mobile Network. Vol. 6, No. 3, pp. 919- 940, March 25, 2012.

6. SKILLS AND QUALIFICATIONS SUMMARY

- Good knowledge in the maintaining of different computers (Hardware + Software).
- Good knowledge and skills in online learning (E-learning system, MS teams, Models..etc
- Good knowledge in computer networks.
- Intellectually curious and fast learner of new skills.
- The process of planning and creating a website
- Good experience in all third Generation Languages Like Basic, Pascal, Fortran, C++, C#, Prolog etc.
- Excellent communication and organization skills.
- Effective problem solver with ability to handle multiple tasks simultaneously.
- Strong experience in technical writing, mathematical modeling, articles and lectures presentations.
- Expertise of using research tools such as latex on Winedit, MikteX, Matlap,
- Photoshop, open office, etc.
- Strong experience in Networking Video-On-Demand System over Mobile Wireless Network and MANET's, Mobility System, Broadcasting and caching, etc.

7. SESSIONS

- Flash program and designing websites.
- Java programming language.

- C++ programming language.
- Oracle 9i,10g...
- ICDL course.
- Mathlab
- Omnet++, NS2 and CSIM++ simulators

8. LANGUAGES

1. Arabic: Mother Language.

2. English: Excellent command writing, reading and speaking.

3. Bahasa Malayu: Good command writing, reading and speaking.

9. CURRENT RESEARCHS AND PAST RELATED RESEARCHS:

	Areas	Topics
1.	Multimedia Applications and Networking	<ol style="list-style-type: none"> 1. Video on demand system in wireless mobile network and Mobile Ad hoc Network. 2. Video-on-Demand Broadcasting protocol. 3. Mobility System. 4. Caching techniques 5. Video/Audio Translation between SIP/IAX and RSW Protocols
2.	Software Engineering	<ol style="list-style-type: none"> 1. Requirement Engineering 2. Process Standard and Methodology
3.	Past related researches	<ol style="list-style-type: none"> 1. Peer to Peer media streaming system. 2. Digital recognition/image processing. 3. Video Conferencing System. 4. Data Scheduling and Placement 5. Video Allocation Algorithm
4.	New Interesting Area	<ol style="list-style-type: none"> 1. Artificial Intelligence and Software Engineering 2. Image Processing 3. Medical Diagnosis 4. Optimization

10. ACHIEVEMENTS

Publications : 76 Journals, 13 international Conference proceedings, 1 national Conference proceedings, 4 Book Chapter, 1 Book and 6 Journals under review.

11. RESEARCH PUBLICATIONS:

Chapter of Book:

1. Saleh Ali Alomari and Putra Suamri, "Multimedia Applications for MANETs over Homogeneous and Heterogeneous Mobile Devices" to appear in book chapter 22 of Wireless Communications and Networks – Recent Advances, InTech Open Access Publisher. 2011. ISBN [978-953-51-0189-5](#), pp. 571-596.
2. Saleh Ali Alomari, Putra Sumari, Raed Abu Zitar, Faiza Gul, Haming Jia, Aseel Smerat, Vaclav Snasel, Absalom E. Ezugwu, Laith Abualigah, Introduction to Artificial Intelligence and Deep Learning, Book; Mastering the Minds of Machines, 1st Edition, 2025, CRC Press, eBook ISBN 9781003516385. Taylor & Francis Group.
3. Saleh Ali Alomari, Khaled Aldiabat, Fatma A. Hashim, Raed Abu Zitar, Zhe Liu, Hazem Migdady, Gang Hu, Aseel Smerat, Laith Abualigah, Supervised Learning: Teaching Machines with Labeled Data, Book: Mastering the Minds of Machines, 1st Edition, 2025, CRC Press, eBook ISBN 9781003516385, Taylor & Francis Group.
4. Saleh Ali Alomari, Mahmoud Abdel-Salam, Ali Raza, Canan Batur Şahin, Raed Abu Zitar, Peiyang Zhang, Aseel Smerat, Laith Abualigah, Vaclav Snasel, The Evolution of Machine Learning: From Traditional Algorithms to Deep Learning Paradigms, Book Mastering the Minds of Machines, 1st Edition, 2025, CRC Press, eBook ISBN 9781003516385, Taylor & Francis Group.
5. Saleh Ali Alomari and Putra Suamri, "Broadcasting Technique for Homogenous and Heterogeneous Mobile Video on Demand System, to appear in book chapter of Multimedia Wireless Communication, InTech Open Access Publisher. ISBN 979-953-307-394-0 (3rd round review,).

1. Saleh Ali Alomari and putra Sumari.,(2012), A Novel Optimized Design of Popularity Cushion Staggered Broadcast over Video on Demand System, International Journal of the Physical Sciences (IJPS), Vol. 7, No, 9, pp. 1435-1453, 23 Feb, 2012. DOI: 10.5897/IJPS11.1399 (ISI Indexed Journal; **Impact Factor: 0.554**).
2. Saleh Ali Alomari and putra Sumari., (2012), Effective Broadcasting and Caching Technique for Video on Demand over Wireless Mobile Network. KSII Transactions on Internet and Information Systems (TIIS), VOL. 6, NO. 3, Mar 2012, pp. 919- 940, March 25, 2012. (**ISI Indexed Journal; Impact Factor: 0.164**)
6. Saleh Ali Alomari, Vaithegy Doraisamy and Putra Sumari, (2011) “An Effective Neighborhood Initial-Playback Based Caching Scheme for Video on Demand over Mobile Ad Hoc Network”, International Journal of Computer Theory and Engineering (IJCTE) Vol. 4, No.4, pp.500-504
7. ALOMARI, S. A. & SUMARI, P. (2010) An overview of Mobile Ad Hoc Networks For The Existing Protocols and Applications. The International Journal on Applications of Graph Theory in Wireless Ad hoc Networks and Sensor Networks (GRAPH-HOC), Vol.1, No.1, pp. 87 – 110.
8. ALOMARI, S. A., SUMARI, P & Mohammad Azmi Q. Al-Madi (2010) A New Peer to Peer Caching Techniques for transmission The Video over Wireless Ad Hoc Network. IJCSIS) International Journal of Computer Science and Information Security, Vol. 8, No. 3, pp. 240-245. [Citation Indexed ISI Journal][0.423] (**Impact Factor 0.423**).
9. ALOMARI, S. A., SUMARI, P & Sadik A. Al-Taweel, Ahmed M. Manasrah. (2010) "CUSTP: Custom Protocol for Audio and Video Conferencing System over P2P Networks", JDCTA: International Journal of Digital Content Technology and its Applications, Vol. 4, No. 3, pp. 61 ~ 74.
10. SALEH Ali. K .ALOMARI, & SUMARI, P. (2010) Spiking Neurons With Asnn Based-Methods For The Neural Block Cipher. International journal of computer science & information Technology (IJCSIT) Vol.2, No.4, August 2010.

11. SALEH Ali. K. ALOMARI., SUMARI, P., AL-TAWEEL, S. A. & HUSAIN, A. J. A. (2009) Digital Recognition using Neural Network. Journal of Computer Science, Vol. 5, No.6, pp. 427-434.
12. Sadik Ali. M. Al-Taweel, Putra Sumari, Saleh Ali K. Alomari, (2010). Robust Video Watermarking Algorithm Using Spatial Domain Against Geometric Attacks, International Journal of Computer Science and Information Security (IJCSIS), Vol. 8, No 2, pp. 51-58. **(Impact Factor 0.423)**.
13. Sadik Ali M. Al-Taweel, Putra Sumari, Saleh Ali K. Alomari, Anas J.A. Husain, (2009). Digital Video Watermarking in the Discrete Cosine Transform Domain, Journal of Computer Science, 5 (8), pp. 536-543. [Citation Indexed (SCOPUS) Journal
14. Saleh Alomari, Putra Sumari Sadik Al-Tawel, (2009) "Using Neural Key Generator to solve the Public Block Cipher" in International Journal Computer System and Security 2008 Vol. 2, No. 3, 2009.
15. Vaithegy Doraisamy, Saleh Ali Alomari, Putra Sumari., (2011) Video on Demand Caching System using NIPBCS over Mobile Ad Hoc Network, JDCTA: International Journal of Digital Content Technology and its Applications, Vol.5, No.6, pp. 142 ~ 154. [Citation Indexed (SCOPUS) Journal].
16. Mohammad Al-Madi, Wafaa Al Salihi, Saleh Ali Alomari, (2011), A Survey in Mobile Generations and their Mobility Management, European Journal of Scientific Research(EJSR) Inc. 2011, Vol. 58 No.1, pp.88-102 ISSN: 1450-216X / 1450-202X (EJSR).
17. Saleh Ali Alomari and Putra Sumari and Alireza Taghizadeh, (2011), A Comprehensive study of Wireless Communication Technology for Mobile Devices and Mobile Ad hoc Networks, European Journal of Scientific Research (EJSR). Vol. 60, No 4, pp.583-591.

- 18.** Saleh Ali Alomari and Putra Sumari., (2011). Statistical Information of the Increased Demand for Watch the VOD with the Increased Sophistication in the Mobile Devices. Communications and Internet Penetration in Asia, International journal of Multimedia & Its Applications (IJMA), Vol.3 , No,4 .pp.183-199.

- 19.** Valliappan Raman, Putra Sumari, and Saleh Ali Alomari,(2011) Review on Mammogram Mass Detection by Machine Learning Techniques. International Journal of Computer and Electrical Engineering (IJCEE), Vol. 3, No. 6, pp. 873-879, 2011.

- 20.** Seyed Aliakbar Mousavi, Muhammad Rafie Hj and Saleh Ali Alomari (2011) An Efficient Method for Mining Event-Related Potential Patterns. International Journal of Computer Science Issues (IJCSI), Vol. 8, No.6, pp.31-38.

- 21.** Mallikka Rajalingam, Saleh Ali Alomari and Putra Sumari (2011), Prevention of Phishing Attacks Based on Discriminative Key Point Features of WebPages. International Journal of Computer Science and Security (IJCSS), Vol. 6, No. 1, pp. 527-543.

- 22.** Jaafer Al-Sabateen., Saleh Ali Alomari and Putra Sumari, (2012) An Overview of Video Allocation Algorithms for Flash-based SSD Storage Systems. International Journal of Advanced Computer Science and Applications (IJACSA). Vol. 3, No. 3, pp.20-25.

- 23.** Saleh Ahmed M. Ali, Muhammad Rafie Hj Mohd and Saleh Ali Alomari. (2012). An Efficient Virtual Landmarc Algorithm to Enhance the Indoor Real Time Location System, IJACT: International Journal of Advancements in Computing Technology, Vol. 4, No. 20, pp. 156 ~ 164, 2012.

24. Hadeel Saleh, Putra Sumari and Saleh Ali Alomari (2013). A Comparative Study of VoIP Protocols. International Journal of Computer Science and Information Security (IJCSIS). Vol.11 , No.4 , pp.97-101.

25. Hadeel Saleh, Putra Sumari and Saleh Ali Alomari (2013). An Efficient Interworking between Heterogeneous Networks Protocols and Multimedia Computing Applications. International Journal of Computer Science and Information Security (IJCSIS). Vol.11, No.5, pp.81-86.

26. Obaida Al-hazaimeh, Saleh Ali Alomari, Jamal Alsakran, Nouh Alhindawi (2014) Across Correlation- New Bsed Technique for Speaker Recognition. International Journal of Academic Research. Vol. 6, No.3, pp. 232-239. May 30 2014. (ISI – Thomson Reuters, Scirus-Elsevier, etc).

27. Saleh Ali Alomari, Sami Hamdi Benamer, Muhammad Rafie Mohd Arshad, Hasimah Hj Mohamed4 (2014), APSEC+: AN ENHANCED SIMPLE MUTUAL AUTHENTICATION PROTOCOL FOR RFID SECURITY, International Journal of Academic Research. Vol. 6. No. 5. September, 2014 (ISI –Thomson Reuters, Scirus-Elsevier, etc).

28. Rami Dirar Malkawi, Mustafa Bani Khalaf, belal Zaqaibah and Saleh Ali Alomari, (2015), AN ENHANCED FIRST SEGMENT CACHING SCHEME (EFSCS) FOR MOBILE AD-HOC NETWORKS BASED IN VIDEO ON DEMAND SYSTEM, International Journal of Academic Research. (ISI –Thomson Reuters, Scirus-Elsevier, etc).

29. Ahmed Izzat Alsalibi, Putra Sumari, Saleh A. Alomari and Mohammed Azmi Al-Betar., (2016), Performance And Reliability Concern Scheme for Efficient Garbage Collection and Wear Leveling On Flash Memory-Based Solid State Disk. Microsystem Technologies, doi:10.1007/s00542-016-3071-4, pp:1-15, Springer Link (Impact Factor).

30. Mowafaq Salem Alzboon, Saleh Ali Alomari, Belal Zaqaibeh, Mohammad Subhi Al-Batah (2017). The Characteristics of the Green Internet of Things and Big Data in

Building Safer, Smarter, and Sustainable Cities. International Journal of Engineering & Technology., Vol. 6, No. 3 (2017). PP: 83-92.

31. Hussam Saleh Abu Karaki and Saleh Ali Alomari (2018), An Interactive Review of Object Motion Detection, Classification and Tracking Algorithms Related to Video Analysis in Computer Vision. International Journal of Engineering Research and Technology (IJASEIT). ISSN 0974-3154 Volume 11, Number 5 (2018), pp. 771-789. (SCOPUS).
32. Saleh Ali Alomari (2018) A Novel Adaptive Caching Mechanism for Video on Demand System Over Wireless Network, International Journal of Computer Networks & Communications (IJCNC). Vol.10, No.6, November 2018. (SCOPUS).
33. Mohammed Hayel Refai, Saleh Ali Alomari , Tarik Khalil, Hussam Saleh Abu Karaki, (2018)., RCuA: Rule Classification Use Association Data Mining Model For Structure And Unstructured Data., International Journal of Engineering & Technology., Vol. 7, No. 4 (2018). PP: 5659-5665
34. Hussam Saleh Abu Karaki, Saleh Ali Alomari and Mohammed Hayel Refai (2019), A Comprehensive Survey of the Vehicle Detection and Tracking Methods for Aerial Surveillance Videos. IJCSNS International Journal of Computer Science and Network Security, VOL.19 No.1, January 2019. PP: 93-106. (Thomson Reuters).
35. Mohammad Al-Batah, Belal Zaqaibeh , Saleh Ali Alomari, Mowafaq Salem Alzboon.(2019), Gene Microarray Cancer Classification using Correlation Based Feature Selection Algorithm and Rules Classifiers., International Journal of Online and Biomedical Engineering (iJOE), Vol. 15, No. 8, 2019.
36. Shadi Shawawreh, Saleh Ali Alomari, Mowafaq Salem Alzboon, Safwan Al Salaimh, (2019), Evaluation of Knowledge Quality in the E -Learning System., International Journal of Engineering Research and Technology. ISSN 0974-3154, Volume 12, Number 4 (2019), pp. 548-553 © International Research Publication House.
37. Saleh Ali Alomari, Mowafaq Salem Alzboon, Belal Zaqaibeh, Mohammad Subhi Al-Batah., (2019) An Effective Self-Adaptive Policy for Optimal Video Quality over Heterogeneous Mobile Devices and Network Discovery Services, Applied Mathematic & Information Sciences. (Natural Science), Vol. 13, No.3, PP:489-505. (*)

38. Safwat Al Tal, **Saleh Ali Alomari**, Muhyeeddin Alqaraleh,. (2019) THE MODERN HOSTING COMPUTING SYSTEMS FOR SMALL AND MEDIUM BUSINESSES, Academy of Entrepreneurship Journal, Volume 25, Issue 4, 2019, ISSN: 1 1528-2686-25-4-309.
39. Mustafa Banikhalaf, **Saleh Ali Alomari**, Mowafaq Salem Alzboon,. (2019) An Advanced Emergency Warning Message Scheme based on Vehicles Speed and Traffic Densities, IJACSA) International Journal of Advanced Computer Science and Applications, Vol. 10, No. 5, 2019.
40. **Saleh Ali Alomari**, Mowafaq Salem Alzboon, Belal Zaqaibeh, Mohammad Subhi Al-Batah (2020), Novel Adaptive Schema to Facilitates Playback Switching Technique for Video Delivery in Dense LTE Cellular Heterogeneous Network Environments. International Journal of Electrical and Computer Engineering (IJECE), Vol. 10, No. 5, pp: 5347, 2020. Q2
41. **Saleh ali alomari***, Safwan al Salaimeh, Emran al Jarrah, Mowafaq Salem Alzboon, (2020), Enhanced Logistics Information Service Systems Performance: Using Theoretical Model and Cybernetics' Principles. WSEAS transactions on business and economics, DOI: 10.37394/23207.2020.17.29, Volume 17, 2020.
42. Tareq Hamadneh, Hassan Al-Zoubi, Saleh Ali Alomari, (2020)., Fast Computation of Polynomial Data Points Over Simplicial Face Values, Journal of Information & Knowledge Management Vol. 19, No. 1 (2020).
43. **Saleh Ali Alomari**, Muhyeeddin Alqaraleh, Emran al Jarrah and Mowafaq Salem Alzboon, (2020) Toward Achieving Self- Resource Discovery in Distributed System based on Distributed Quadtree. Journal of Theoretical and Applied Information Technology 31st October 2020. Vol.98. No 20. . (E-ISSN 1817 3195 / ISSN 1992-8645).
44. Wajdee Mohammadkair Ebrheem Ajlouni, Gurvinder Kaur, **Saleh Ali Alomari**, (2020), The Impact of Employees' Gender and Age on Organizational Citizenship Behavior Using a Fuzzy Approach, Social Science Computer Review, SAGE Publications, 2020/12/1
45. **Saleh Ali Alomari** (2020), Efficient Study on Evaluating Processor's Affinity in Multi-Core Architecture and Multi-Processor Systems, Int. J. Advance Soft Compu. Appl, Vol. 12, No. 3, November 2020 ISSN 2074-8523; Copyright © ICSRS Publication, 2020 www.i-csrs.org.
46. Wajdee Mohammadkair Ebrheem Ajlouni, Gurvinder Kaur, **Saleh Ali Alomari** (2021), Effective Organizational Justice and Organizational Citizenship Behavior

- Using Fuzzy Logic to Obtain the Optimal Relationship, Quality Management in Healthcare, Vol 30, No. 1, 2020/12/9. (ISI).
47. Mowafaq Salem Alzboon, Emran Aljarrah, Muhyeeddin Alqaraleh, Saleh Ali Alomari., (2021), Nodexl Tool for Social Network Analysis, Turkish Journal of Computer and Mathematics Education, Research Article, Vol.12 No.14 (2021), pp: 202 – 216.
 48. Mohammad AL-Oudat, **Saleh Alomari**, Hazem Qattous, Mohammad Azzeh, Tariq AL-Munaizel, (2022), An Interactive Automation for Human Biliary Tree Diagnosis Using Computer Vision, INTERNATIONAL JOURNAL OF COMPUTERS COMMUNICATIONS & CONTROL, e ISSN 1841-9844, ISSN-L 1841-9836, Volume: 19, Issue: 1.
 49. Mowafaq Salem Alzboon, Muhyeeddin Kamel Alqaraleh, Emran Mahmoud Aljarrah, **Saleh Ali Alomari**, (2022), Semantic Image Analysis on Social Networks and Data Processing: Review and Future Directions, Handbook of Research on Foundations and Applications of Intelligent Business Analytics, IGI Global., PP: 189-214.
 50. Vaithegy Doraisamy, Saleh Ali Alomari, Rasslenda-Rass Rasalingam, (2022), Enhance the latency of mobile cloud gaming system, International Journal of Wireless and Mobile Computing, Vol. 22, No.3-4, pp: 236-250.
 51. AL-Oudat Mohammad, Mohammad Azzeh, Hazem Qattous, Ahmad Altamimi, Saleh Alomari, (2022). Image Segmentation based Deep Learning for Biliary Tree Diagnosis, Webology, Vol.19, No.1, pp: 1834-1849.
 52. Saleh Ali Alomari,(2023). An Efficient System for Diagnosis of Human Blindness Using Image-Processing and Machine-Learning Methods, International Journal of Online and Biomedical Engineering (iJOE), Vol. 19 No. 10 (2023)
 53. Mohammad Al-Omar, **Saleh Alomari**, Tamer Bani Amer, (2023), An Efficient Cyber Security And Data Science For Analyzing Big Medical Data, Journal of Theoretical and Applied Information Technology, Vol. 101 , No.24.
 54. Osama Al-Baik, **Saleh Alomari**, etc, (2024), Pufferfish optimization algorithm: a new bio-inspired metaheuristic algorithm for solving optimization problems, Biomimetics, Vol.9, No.2, PP: 65. Q1
 55. Taoufik Benhmad, Chibani Belgacem Rhaimi, **Saleh Alomari**, Leenah Aljuhani, (2024), Design and Implementation of an Integrated IoT and Artificial Intelligence

- System for Smart Irrigation Management. *International Journal of Advances in Soft Computing & Its Applications*, Vol.16, No.1.
56. Ibraheem Abu Falahah, Osama Al-Baik, **Saleh Alomari**.(2024), Frilled lizard optimization: A novel nature-inspired metaheuristic algorithm for solving optimization problems. *Computers, Materials & Continua*. Vol.79, No.3.
 57. **Saleh Alomari**, Khalid Kaabneh, Ibraheem AbuFalahah, Kei Eguchi, Saikat Gochhait, Irina Leonova, Zeinab Montazeri, Mohammad Dehghani (2024). Dollmaker Optimization Algorithm: A Novel Human-Inspired Optimizer for Solving Optimization Problems. *International Journal of Intelligent Engineering & Systems*, Vol.17, No.3.
 58. **Alomari, S.**, Al-Tarawneh, H. *et al.*(2024). Fractional discrete neural networks with variable order: solvability, finite time stability and synchronization. *Eur. Phys. J. Spec. Top.* (2024). <https://doi.org/10.1140/epjs/s11734-024-01167-6>. Springer
 59. Jamal Alsadi, Faten AM Al Btoush, Ameen Alawneh, Ahmed Ali Khatatbeh, Mustafa Alsefan, Wardeh Al-Younis, Mutaz Abdel Wahed, Amer Al-Canaan, Rabah Ismail, Issam Trad, Hashem Al-Mattarneh, **Saleh Alomari**.(2024). Optimization of Execution Microscopic Extrusion Parameter Characterizations for Color Polycarbonate Grading: General Trend and Box–Behnken Designs. *Applied Sciences*, Vol 14. No.11,PP:4848.
 60. Jamal Alsadi, Ameen Alawneh, Ahmed Ali Khatatbeh, Mutaz Abdel Wahed, Mustafa Alsefan, **Saleh Alomari**. (2024). Evaluating Processing Parameter Effects on Polymer Grades and Plastic Coloring: Insights from Experimental Design and Characterization Studies. *Polymers*, Vol 16. No. 23, PP:3409.
 61. **Saleh Alomari**, Khalid Kaabneh, Ibraheem AbuFalahah, Saikat Gochhait, Irina Leonova, Zeinab Montazeri, Mohammad Dehghani. (2024). Carpet Weaver Optimization: A Novel Simple and Effective Human-Inspired Metaheuristic Algorithm. *International Journal of Intelligent Engineering & Systems*, Vol7. No.4.
 62. Laith Abualigah, Mohammad H Almomani, **Saleh Ali Alomari**, Raed Abu Zitar, Hazem Migdady, Kashif Saleem, Vaclav Snasel, Aseel Smerat, Absalom E Ezugwu. (2025). Optimizing Intrusion Detection in Wireless Sensor Networks via the Improved Chameleon Swarm Algorithm for Feature Selection. *IET Communications*, Vol.19, No.1. Q2
 63. Ahmad MohdAziz Hussein, **Saleh Ali Alomari**, Mohammad H Almomani, Raed Abu Zitar, Hazem Migdady, Aseel Smerat, Vaclav Snasel, Laith Abualigah.(2025). A Hybrid PSO-GCRA Framework for Optimizing Control Systems Performance.

64. Ahmad MohdAziz Hussein, **Saleh Ali Alomari**, Mohammad H Almomani, Raed Abu Zitar, Kashif Saleem, Aseel Smerat, Shawd Nusier, Laith Abualigah.(2025). A smart IoT-cloud framework with adaptive deep learning for real-time epileptic seizure detection. *Circuits, Systems, and Signal Processing*, Vol.44, No.3, PP: 2113-2144. Springer Q1
65. Laith Abualigah, **Saleh Ali Alomari**, Mohammad H Almomani, Raed Abu Zitar, Kashif Saleem, Hazem Migdady, Vaclav Snasel, Aseel Smerat, Absalom E Ezugwu.(2025). Artificial intelligence-driven translational medicine: a machine learning framework for predicting disease outcomes and optimizing patient-centric care. *Journal of Translational Medicine*, Vol.23, No.1, PP:302. Q1
66. Abualigah, L., **Alomari, S.A.**, Almomani, M.H. et al. Improved Geysler-Inspired Optimization Algorithm with Adaptive Turbulence and Dynamic Pressure Equilibrium for Data Clustering. *J Bionic Eng* (2025). <https://doi.org/10.1007/s42235-025-00694-9> .Q1
67. Abualigah, L., Al-Okbi, N.K., **Alomari, S.A.** et al. Optimized image segmentation using an improved reptile search algorithm with Gbest operator for multi-level thresholding. *Sci Rep* 15, 12713 (2025). <https://doi.org/10.1038/s41598-025-96429-1>. Q1
68. Abualigah, L., **Alomari, S.A.**, Almomani, M.H. et al. Enhanced aquila optimizer for global optimization and data clustering. *Sci Rep* 15, 13079 (2025). <https://doi.org/10.1038/s41598-025-95888-w>. Q2
69. Mahmoud Abdel-salam, **Saleh Ali Alomari**, Mohammad H Almomani, Gang Hu, Sangkeum Lee, Kashif Saleem, Aseel Smerat, Laith Abualigah(2025). Quadruple strategy-driven hiking optimization algorithm for low and high-dimensional feature selection and real-world skin cancer classification. *Knowledge-Based Systems*, Vol.315, pp: 113286. Elsevier Q1
70. Mahmoud Abdel-Salam, **Saleh Ali Alomari**, Jing Yang, Sangkeum Lee, Kashif Saleem, Aseel Smerat, Vaclav Snasel, Laith Abualigah. (2025). Harnessing dynamic turbulent dynamics in parrot optimization algorithm for complex high-

- dimensional engineering problems. *Computer Methods in Applied Mechanics and Engineering*. Vol. 440, PP: 117908. Elsevier Q1
- 71.** Laith Abualigah, **Saleh Ali Alomari**, Mohammad H Almomani, Raed Abu Zitar, Hazem Migdady, Kashif Saleem, Aseel Smerat, Vaclav Snasel, Absalom E Ezugwu. (2025). An enhanced Walrus Optimizer with opposition-based learning and mutation strategy for data clustering. Volume 26, July 2025, 100409. Elsevier Q1
- 72.** Lee, S., Almomani, M.H., **Alomari, S.A.** et al. A novel deep learning framework with artificial protozoa optimization-based adaptive environmental response for wind power prediction. *Sci Rep* 15, 18746 (2025). <https://doi.org/10.1038/s41598-025-97793-8>. Q1
- 73.** Laith Abualigah, Mohammad H Almomani, **Saleh Ali Alomari**, Raed Abu Zitar, Vaclav Snasel, Kashif Saleem, Aseel Smerat, Absalom E Ezugwu (2025). A control-driven transition strategy for enhanced multi-level threshold image segmentation optimization. *Egyptian Informatics Journal*, Vol.30, PP: 100646. Elsevier Q1
- 74.** Mohammed Otair, Faten Ali Qawaqzeh, **Saleh Ali Alomari**, Raed Abu Zitar, Hazem Migdady, Kashif Saleem, Aseel Smerat, Anas Ratib Alsoud, Laith Abualigah. (2025). Enhanced Arithmetic Optimization Algorithm for Intrusion Detection in Wireless Sensor Networks. *International Journal of Communication Systems*, Vol. 38, No.10, PP: e70122. WILEY Q1
- 75.** Saleh Ali Alomari (2025). An Effective Hybrid Harmonic Staircase Broadcasting Protocol (HaSB) for Video-on-Demand System. *International Journal of Interactive Mobile Technologies (iJIM)*, Vol.19, No.11. Q2
- 76.** Saleh Ali Alomari (2025). Skin Cancer and Benign Lesion Classification Using Machine Learning Algorithms. *Applied Mathematics & Information Sciences (AMIS)*. *Appl. Math. Inf. Sci.* 19, No. 5, 1093-1107 (2025) Q2
- 77.** Saleh Ali Alomari, Safwan Ali Al Salaimeh, Mofleh Al-Diabat. (2025). Big Data Knowledge Management for Automated Enterprise Efficiency and Performance. *Journal of Information & Knowledge Management (ICAIMT special issue)* Q2
- 78.** Saleh Ali Alomari (2025). Computational Artificial Neural Network Performances for the Fractional Order Lumpy Skin Disease Model. *Journal of Intelligent Systems and Internet of Things*, vol.17 , no. 2 , 2025, pp. 119-132. **DOI:** <https://doi.org/10.54216/JISIoT.170209>

79. Saleh Ali Alomari (2025). ChainGuard 6G+: A Secure and Private Architecture for Wireless Communication Using Federated Learning and Blockchain in IoT Networks. *Journal of Intelligent Systems and Internet of Things*, vol.18 , no.1 , 2026, pp. 12-33. **DOI:** <https://doi.org/10.54216/JISIoT.180102>

Conferences and Proceedings

1. **ALOMARI, S. A. K.** & SUMARI, P. (2010) A Video on Demand System Architecture for Heterogeneous Mobile Ad Hoc Networks for Different Devices. 2nd International Conference on Computer Engineering and Technology (ICCET 2010). Sichuan, China, IEEE and IACSIT. IEEE 2010, Vol. 7, pp. v7- 700 – v7-707, [Citation Indexed (ISI/SCOPUS) Conference].
2. **ALOMARI, S. A. K.**, SUMARI, P. & AL-TAWEEL, S. A. (2010) Peer to Peer Media Streaming System: A/V Conferencing System Using Custom Protocol. The 5th International Conference on Future Information Technology (FutureTech 2010). Busan, Korea, IEEE Xplore (indexed by EI), [Citation Indexed (ISI/SCOPUS) Conference]
3. **ALOMARI, S. A.** & SUMARI, P. B. (2010) New System Architecture for Mobility to Provides VoD Services over Heterogeneous Mobile Ad Hoc Networks. 4TH International Symposium on Broadband Communications (ISBC2010) Melaka, Malaysia, Symposium.
4. **Saleh Ali Alomari**, Putra Sumari, Sadik Ali Taweel and Raman Valliappan (2011), “An Efficient Popularity Cushion Staggered Broadcasting for Homogeneous and Heterogeneous Mobile Video-on-Demand System “,2011 International Conference on Wireless and Optical Communications (ICWOC 2011), Vol.4, pp.272-277 May 21 - 22, 2011 Chongqing, China. [Citation Indexed (ISI/IEEE) Conference].
5. Hadeel Saleh, **Saleh Ali Alomari** and Putra Sumari and (2011), “An Effective Method for Audio Translation between IAX and RSW Protocols”, World Academy of Science Engineering and Technology Conference, (International Conference on

Computer Networks and Security (ICCNS 2011)), ISSUE 59. pp.253-256. Paris, France. NOVEMBER 14-16, 2011.

6. Hadeel Saleh, **Saleh Ali Alomari** and Putra Sumari (2011), “An Efficient Audio Translation Approach between SIP and RSW Protocols”, 3rd World Conference On Information Technology, (WCIT-2012). Vol. 2, pp.241-246, NOVEMBER 23-27 2012. Ppublished janauary 2013 Turkey. by ELSEVIER.
7. Jaafer Al-Sabateen, **Saleh Ali Alomari** and Putra Sumari, (2012). Cost Benefit Processor: Video Allocation Algorithm for Flash-Based Solid State Disks. 4th WORLD CONFERENCE ON EDUCATIONAL SCIENCES (WCES-2012) 02-05 February 2012 Barcelona, Spain. [Volume 46](#), 2012, pp. 5581–5587.(published by ELSEVIER and indexed ScienceDirect, Scopus, Thomson (ISI))
8. **Saleh Ali Alomari** and Putra Sumari (2012). “Zero-Delay Broadcasting Protocol for Video on Demand over Mobile Ad Hoc Networks”. 2nd World Conference on Innovation and Computer Sciences (INSODE-2012), Vol, 2, pp.318-326, Kusadası Izmir, Turkey. (ISSN: 1877-0509) by ELSEVIER.
9. **Alomari, S;** Sumari, P. and Ahmad, S. (2012). “An Interactive Proxy Server Cache Mechanism for Video on Demand system over Mobile Ad Hoc Networks. 2nd World Conference on Innovation and Computer Sciences (INSODE-2012). Published in Procedia Computer Science Journal. Vol. 2, pp. 327-334, Kusadası Izmir, Turkey. (ISSN: 1877-0509) by ELSEVIER.
10. **Saleh Ali Alomari**, Mohammad Al-Madi and Putra Sumari (2012). “A New Fair Load Balancing Method for Multiple Component Carriers in 3GPP LTE-Advanced System”. 2nd World Conference on Innovation and Computer Sciences (INSODE-2012), Vol, 2, pp.370-378, Kusadası Izmir, Turkey. (ISSN: 1877-0509) by ELSEVIER.
11. **Saleh Ali Alomari**, and Putra Sumari (2014). “PSCM: Proxy Server Cache Mechanism for VOD System” International Conference on Communications, Signal

Processing and Computers (CSPC 2014). **Interlaken, Switzerland, February 22-24 2014.** (ISSN: 1790-5117) PP: 138-144, by ISI (Thomson Reuters), Scopus, ELSEVIER, etc.

12. **Saleh Ali Alomari**, Mohammad Atallah Aloudat, Linda Sameh Bani Hani and Sara Saed Alomari (2014). “Design Resources Events Agents Ontology Model for Knowledge Sharing in IT Project”, the International Business Information Management Conference (24th IBIMA) on 6-7 November 2014 in Milan, Italy, (ISBN:978-0-9860419-3-8). by ISI (Thomson Reuters), Scopus, etc.

13. **Saleh Ali Alomari (2025)**., Safwan Ali Al Salaimeh, Mofleh Al-Diabat, Big Data Knowledge Management for Automated Enterprise Efficiency and Performance, publication in the ICAIMT special issue for the Journal of Information & Knowledge Management. Scopus Q2

Journal Articles under Review/ Process/ Accepted/ Submitted and Waiting

1. **Saleh Ali Alomari** and Hussam Saleh Abu Karaki (2025), A Novel Method for Vehicle MOTion DETection, CLAssification and Tracking Based on Aerial Video (MODECLAT). Submitted and Waiting. **Q1**

2. **Saleh Ali Alomari** nd Mohammed I. M. Rajab (2025), Mathematical And Simulation Model for The Hyprid Harmonic Staircase Broadcasting Protocol. (IETE - Journal). Submitted and Waiting. **Q2**

3. Convergent Approaches to Image and Graphics Acceleration for Future Smart Environments. Submitted and Waiting. **Q2**

4. A Novel Hybrid AI-Optimization Framework for Autonomous Drone Path Planning and Navigation. Submitted and Waiting. **Q1**

5. A Quantum-Enhanced Hybrid Optimization Algorithm for High-Dimensional and Real-World Engineering Challenges. Submitted and Waiting. **Q1**

6. A Hybrid Deep Learning Framework for Fake News Detection on Social Media Using CNN, RNN, and GloVe Embeddings. Submitted and Waiting. **Q1**

12. FUNDED PROJECTS

Project One:

Project Name: **USM Video on Demand System for Mobile Devices**
Project Type: **Prototype Development Research Grant Scheme (PRGS)**
Duration: **2011- 2012.**

Project Two:

Project Name: **Mobile on Demand Content Delivery GRID**
Project Type: **RU-Grant**
Duration: **2010- 2014**

Project Three:

Project Name: **Broadcasting Environment for CDN-P2P based Video on Demand System**
Project Type: **RUI-Grant**
Duration: **2011- 2013**

13. EDITORSHIP

1. I am a Reviewer in **International Journal of Digital Content Technology and its Applications (JDCTA)** published by AICIT (Advanced Institute of Convergence Information Technology).
2. I am a Reviewer in **International Journal of the Physical Sciences**, published by Academic Journals.
3. I am a Reviewer in **International Association of Computer Science and Information Technology (IACSIT)**.
4. I am a member in **Institute of Electronics, Information and Communication Engineers (IEICE)**.
5. I am a Reviewer in **Transactions on Internet and Information Systems (TIIS)**.
6. I am a Reviewer in **International Journal of Advanced Computer Science and Applications (IJACSA)**.
7. I am a Reviewer in **International Journal of Computer Theory and Engineering (IJCTE)**

8. I am a Reviewer in **International Journal of Computer Science & Information Technology (IJCSIT)**.
9. I am a Reviewer in Peer-to-Peer Networking and Applications, Journal under Elsevier Publisher.
10. I am a Reviewer in **Computer Science Journal**

14. TEACHING & SUPERVISION

1. Multimedia System
2. Programing Language 1
3. Programing Language 2
4. Computer Skills and Digital world and the internet
5. Data Communication and Networks
6. Computer Networks 1,2
7. Introduction to IT
8. Introduction to programing language
9. System Analysis and design
10. Final Year Project for all (Computer Science, Software Engineering and Computer Networks)
11. Wireless network
12. And others

15. Project at Jadara University

• Education Mobile Application	• Voice Recognition System
• Smart Home using Mobile	• License Services System
• Smart Shopping using Mobile	• Electronic Voting System for Jadara University
• Retrieval Date from your Android Phone to the E-mail	• Restaurant Delivery System
• Search of the Lowest Cost for any Item	• Cultural and Artistic System
• My Tour	• Management of warehouses and storage System
• Fitness Application	• Running Tracker
• System to pay electricity bills	• System of financial accounting and human resources

• Airline Reseration System	• Digital Mother Child Healthy Handbook
• New Caching Technique For Mobile Ad-Hoc Network based VoD System	• Source Code Explorer System
• Linkage between Border Crossing Point in the Kingdom of Jordan	• Automat Silent Mode for Android Smartphone
• E-Cafe' System	• Jadara Online Room Reservation
• E-Agriculture Extension System	• Healthy Center System
• Child Tracker System of Indoor Environments	• Delivering System for Streaming Live and Video on Demand
• Automat Silent Mode Using Sensor Network	• Archive Application for College of Computer Science and Information technology (CCSIT)
2019/2020 -2	
• Find the nearest emergency doctor Mobile APP	• Face Recognition For Criminal identification
• Smart lawyer	• KYAN services
• The Techno Doctor	• Book an appointment at hospital (Mawaedcom)

➤ **Project at Jadara University (1st Semester 2014-2015)**

1. Smart Parking System, Best **project** at eighth Annual Technology Parade in April 2015.

17. BIOGRAPHY

Saleh Alomari obtained his MSc and PhD degrees in Computer Science from Universiti Sains Malaysia (USM), Pulau Penang, Malaysia in 2008 and 2013, respectively. He is a lecturer at the faculty of Information Technology, Jadara University, Irbid, Jordan since 2013 until now, where he has been an Associate Professor since 2019. He is a Vice dean of the Faculty of Information Technology since 2022 until now and was assistant dean of the Faculty of Information Technology for Student Affairs & Quality Assurance, and head of the Software Engineering Department starting in 2019. He was a head of the Computer Network Department at Jadara University from 2014 until 2016. He has published over 100 papers in international journals and refereed conferences in areas related to his research. His research interest is in multimedia networking; video communications system design; and multimedia communication, specifically on video-on-demand systems, P2P media streaming, MANETs, and caching techniques for advanced mobile broad-casting networks. New Interesting Area are in artificial intelligence, image processing, medical diagnosis, and software engineering. (alomari08@gmail.com, omari08@jadara.edu.jo)

18. Names/affiliation and contact details potential referees

	Name	Affiliation	Position	email
1	Prof. Dr Mohammad Obaidat	Jadara Univesity, 21110, Irbid Jordan	The President of Jadara university	president@jadara.edu.jo
	Prof. Dr. Iman Basheti	Jadara Univesity, 21110, Irbid Jordan	Vice President of Jadara university	i.basheti@jadara.edu.jo
2	Prof. Dr. Ahamad Tajudin Khader	University sains Malaysia, 11800, Penang, Malaysia	The Dean of the School of Computer Sciences	tajudin@cs.usm.my
3	Associate Prof. Dr. Ameen alawneh	Jadara Univesity, 21110, Irbid Jordan	The Dean of the faculty of Computer Sciences and Information Technology, 2021	ameen.al@jadara.edu.jo
4	Prof. Dr. Putra Sumari	University sains Malaysia, 11800, Penang, Malaysia	Professor at school of computer sciences, Master and PhD Supervisor	putras@usm.my
5	Prof. Dr. Shawkat Alkhazaleh	Jadara Univesity, 21110, Irbid Jordan	The Dean of the faculty of Sciences and Information Technology,	s.alkhazaleh@jadara.edu.jo