Suleyman A. AlShowarah, Ph.D.

Faculty of Information Technology
Mutah University, Jordan

Associate Professor
Associate Fellow

Emails: showarah@mutah.edu.jo , suleyman.showarah@gmail.com
Phone: +962 77 8003268

Address: SE Dept., Faculty of Information Technology, Mutah University, Al-Karak, Jordan
Scopus Author ID: 56237397200
OCRID: https://orcid.org/0000-0001-8294-8556

Research Gate Profile: https://www.researchgate.net/profile/Suleyman-Al-Showarah
LinkedIn Profile: https://www.linkedin.com/in/suleyman-al-showarah-604621173/
Google Scholar: https://scholar.google.com/citations?user=S2PfEoQAAAAJ&hl=en



Education

- **Ph.D. Computer Science, The University of Buckingham – UK, 2015**
  Dissertation (PhD):
  - "*Effects of Age on Smartphone and Tablet Usability, Based on Eye-Movement Tracking and Touch-Gesture Interactions*".

- **M.Sc. Computer Science, Sunderland University – UK, 2008**
  Dissertation (MSc)
  - "*Assessment Jordanian Universities Students towards E-learning: as a process to improve Learning*".

- **B.Sc. Computer Science, Isra University – Jordan, 2004**

Academic and Professional Experience

- Associate Professor, Department of Software Engineering, Al-Zytoonah University, Jordan, Since September, 2025 – *Present*. [sabbatical leave]
- Vice Dean, Faculty of information Technology, Mutah University, October 2023 – September 2024.
- Chairman of the Department of Computer Science, Mutah University, June 2023 – September 2024.
- Chairman of the Department of Software Engineering, Mutah University, October 2022 – September 2023.
- Associate Professor, Department of Software Engineering, Mutah University, Since September, 2021.

- Chairman of the Department of Computer Information Systems, Mutah University, September 2018 – September 2020.
- Assistant Professor, Department of Software Engineering, Mutah University, Since September, 2017 - 2021.
- Assistant Professor. Department of Information Technology, Mutah University, 2016 – 2017.
- Assistant Professor. Department of Computer Science, Isra University, 2015 – 2016.
- Teacher Assistant, Department of Computer Science, The University of Buckingham, UK 2011 - 2015.
- Research Assistant, Department of Computer Science, The University of Buckingham, UK 2011 - 2015.
- Lecturer, Department of Computer Science, Buckinghamshire University Technical College, UK 2014 - 2015.
- Visiting Lecturer, Department of Computer Science, The University of Buckingham, UK 2014 - 2015.
- Project Leader, Global Vision Soft, Amman - Jordan, 2002-2006.

Research Interests & Specializations

Overview

Research and teaching are the dual pillars of my academic career, driving innovation and development. As an active researcher, I specialize in smartphone usability, biometrics, data mining, and data science. My work sits at the intersection of Human-Computer Interaction (HCI) and Machine Learning, ranging from analyzing the effects of age on smartphone usability through finger gestures and eye-tracking to developing authentication systems and deep learning-based cancer detection using Convolutional Neural Networks (CNNs). Alongside my research, I bring extensive teaching experience in Computer Science and Software Engineering, having delivered modules in mobile application development, web technologies, and various programming languages including Python, Java, C++, and C#.

In my graduate pedagogy, I treat research as a core requirement, mentoring students through the step-by-step process of drafting, presenting, and publishing their findings in reputable international journals and conferences. I have supervised numerous postgraduate (MSc) and undergraduate research projects across the United Kingdom, Saudi Arabia, and Jordan, supporting students as they apply deep learning algorithms, machine learning techniques and statistical analysis to real-world problems. By embedding students within active, ongoing research projects, I provide them with the opportunity to collaborate with experienced researchers and learn how to effectively synchronize their individual contributions within a larger professional framework.

I view research not merely as a path to publication, but as a transformative journey that addresses societal challenges and inspires future generations of scholars. I am particularly committed to bridging the gap between theory and practice—ensuring that our research outcomes, from database architecture to complex algorithms and heuristics, contribute meaningfully to the human condition. Furthermore, I value the richness that interdisciplinary collaboration brings to scientific inquiry. By establishing connections across different fields, I foster a holistic approach that exceeds

traditional academic boundaries, allowing for a more comprehensive understanding of complex phenomena and opening new opportunities for exploration.

Researches Topics

- Software Engineering with focus on software evolution, program comprehension, software maintenance, mining software repositories, and software usability using Eye-movement Tracking and Touch-gestures Interactions.
- Deep Learning based on the optimization techniques.
- Machine Learning models based on the performance metrics.
- Data Mining Analysis.
- User- Age Group Recognition based on users' cognitive ability, and efficiency.
- User Identification based on users' cognitive ability, users' patterns, and efficiency.
- APIs and software libraries: reusability and usability.
- Re-engineering, reverse engineering and refactoring.

Publications (Refereed)

1. Suleyman A. AlShowarah, (2026). "Investigating the Effectiveness of Features Extractions and Statistical Operations on bone tumors Detection Systems". *(Under Processing)*
2. Suleyman A. AlShowarah, Wael Alzyadat, Ameen Shaheen, Aysh Alhroob, (2026). "Beyond Accuracy: Protocol-Dependent Robustness and Reliability in Patch-Based Breast Histopathology Classification". International Journal of Advances in Soft Computing and its Applications, Vol(18), No(2), Pages: 132 – 149. DOI: 10.15849/ijasca.v18i2.69. https://www.scopus.com/pages/publications/105047211742?origin=resultslist.
3. Al-khlifeh A, Hassanat AB, AlShowarah SA, Tarawneh AS, Alhasanat LA and Hammouri A, 2026. K-mer-based machine learning method to classify Echinococcus granulosus S.L. mitochondrial DNA sequences. Pakistan Veterinary Journal, 46(4): 816-829. http://dx.doi.org/10.29261/pakvetj/2026.076
4. Suleyman Al-Showarah, & Shiren Salem, (2026). "User Age Group Recognition on Smartphones and Tablets Using Gesture Swiping Features". International Journal of Interactive Mobile Technologies (iJIM). E-ISSN: 1865-7923. Vol 20, No 08 (2026).
5. Suleyman A. AlShowarah, Ayman I. Zreikat, & Hisham A. Assam, (2025). "DeepSystem: The Effect of the Optimized Deep Learning and Blurring Filters on the Automated Detection of Pneumonia Using X-ray Images". International Journal of Innovative Research and Scientific Studies, 8(3), 2817–2833. https://doi.org/10.53894/ijirss.v8i3.7087
6. AlShowarah, S.A., (2025). "DeepCancer: deep learning for brain tumor detection-based application system". Neural Computing and Application. Vol. 37. No. 7. Pages (5577–5596). ISSN: 0941-0643 E-ISSN: 1433-3058. DOI: https://doi.org/10.1007/s00521-024-10926-4.
7. Suleyman A. Al-Showarah, (2024). "Deep learning and statistical operations based features extraction for lung cancer detection system". Journal of Theoretical and Applied Information Technology (JATIT). Vol 102. No. 03. Pages (842-853). ISSN: 1992-8645 E-ISSN: 1817-3195. https://www.jatit.org/volumes/Vol102No3/6Vol102No3.pdf

8. Suleyman A. AlShowarah, (2023). "Breast Cancer Detection System using Deep Learning Based on Fusion Features and Statistical Operations". International Journal of Advanced Computer Science and Applications (IJACSA). Vol.14. No.11. Pages (634-642). ISSN: 2158-107X. E-ISSN: 2156-5570. DOI:http://dx.doi.org/10.14569/IJACSA.2023.0141165.

9. Suleyman AlShowarah, Abubaker Al-Taie, Hamzeh Eyal Salman, Wael Alzyadat, Mohannad Alkhalaileh, (2023). "Predict Quality Medical Drug Data Towards Meaningful Data Using AI Algorithms". International Journal of Advanced Computer Science and Applications (IJACSA). Vol. 14. No. 8. Pages (1052-1059). ISSN: 2158-107X. E-ISSN: 2156-5570. DOI : http://dx.doi.org/10.14569/IJACSA.2023.01408114

10. Wael Alzyadat and Suleyman Al-Showarah, (2023). "Analyzing Data Format Interoperability in API Ecosystems Using Big Data Architecture". 2023 International Conference on Information Technology (ICIT), Jordan. IEEE Xplore. Pages (609-612). ISSN: 2831-3380 E-ISSN: 2831-3399. DOI: 10.1109/ICIT58056.2023.10225959.

11. A. M. Almanaseer, W. Alzyadat, M. Muhairat, S. Al-Showarah and A. Alhroob, (2022). "A proposed model for eliminating nonfunctional requirements in Agile Methods using natural language processes" 2022 International Conference on Emerging Trends in Computing and Engineering Applications (ETCEA), Karak, Jordan. IEEE Xplore. Pages (1-7). ISBN:978-1-6654-7710-9. E-ISBN:978-1-6654-7709-3. DOI: 10.1109/ETCEA57049.2022.10009796. https://ieeexplore.ieee.org/document/10009796

12. Ra'Fat AL-Msie'deen and Anas H. Blasi and Hamzeh Eyal Salman and Saqer S. Alja'afreh and Ahmad Abadleh and Mohammed A. Alsuwaiket and Awni Hammouri and Asmaa Jameel Al_Nawaiseh and Wafa Tarawneh and Suleyman A. Al-Showarah, (2022). "Detecting Commonality and Variability in Use-Case Diagram Variants". Journal of Theoretical and Applied Information Technology. Vol.100. No.4. Pages (1113-1126). ISSN: 1992-8645 E-ISSN: 1817-3195. URL: https://www.jatit.org/volumes/Vol100No4/19Vol100No4.pdf

13. Suleyman A. Al-Showarah, Sohyb T. Al-qbailat, (2021). "Birds Identification System Using Deep Learning". International Journal of Advanced Computer Science and Applications (IJACSA), Vol. 12, No. 4, 2021. ISSN: 2158-107X E-ISSN: 2156-5570. DOI: 10.14569/issn.2156-5570.

14. Al-Showarah, S., Alzyadat, W., Alhroob, A. & Al-Assam, H. (2020). "User Identification Based on the Dynamic Features Extracted from Handwriting on Touchscreen Devices". International Journal of Interactive Mobile Technologies (iJIM). E-ISSN: 1865-7923. Vol 14, No 11 (2020). (URL: https://online-journals.org/index.php/i-jim/article/view/11859).

15. Alzyadat, W. J., Al-Kasabera, Y., AlHroob, A., Al Showarah, S., & Thunibat, A. (2020). "An Automated Approach to Validate Requirements Specification". COMPUSOFT: An International Journal of Advanced Computer Technology, 9(2). (URL: https://ijact.joae.org/index.php/ijact/article/view/1094).

16. Suleyman Al-Showarah, Sherin Salem. (2020). "The Effect of Age and Screen Sizes on the Usability of Smartphones Based on Handwriting of English Words on the Touchscreen". Mu'ta Lil-Buhuth wad-Dirasat, Mutah University. ISSN: 1022- 6812, Vol 15, No 1 (2020). (URL: https://xwww.mutah.edu.jo/darj/Natural/35-2020-1N.pdf).

17. Suleyman. A. Al-Showarah, (2019). "Dynamic Recognition for User Age-Group Classification Using Hand-Writing Based Finger on Smartphones," 2019 10th International Conference on Information and Communication Systems (ICICS), Irbid, Jordan, 2019, pp. 140-146, doi: 10.1109/IACS.2019.8809083. Publisher: IEEE. E-ISSN: 2573-3346 ISSN: 2471-125X. (URL: https://ieeexplore.ieee.org/abstract/document/8809083).

18. Al-Showarah, S. (2017). "The Effectiveness of Dynamic Features of Finger Based Gestures on Smartphones' Touchscreens for User Identification". International Journal of Interactive Mobile Technologies (iJIM). E-ISSN:1865-7923. Vol 11, No 1 (2017). (URL: https://online-journals.org/index.php/i-jim/article/view/6368/0).
19. Al-Showarah, S. (2017). "How significant is the individual differences in Finger based Gestures on Smartphones' touch-screen for User Identification?". Journal of Theoretical and Applied Information Technology (JATIT). Vol.95. No.3 (2017), ISSN: 1992-8645, E-ISSN: 1817-3195. (URL: http://www.jatit.org/volumes/Vol95No3/4Vol95No3.pdf).
20. Al-Showarah, S., Al-Jawad, N., Sellahewa, H., (2015). "User-Age Classification Using Touch Gestures on Smartphones", International Journal of Multidisciplinary Studies (IJMS), Volume 2, Issue I, 2015. (URL: https://ijms.sljol.info/articles/abstract/10.4038/ijms.v2i1.57/).
21. Al-Showarah, S., (2015). "Effects of age on smartphone and tablet usability, based on eye-movement tracking and touch-gesture interactions". University of Buckingham. EThOS ID: uk.bl.ethos.651301. ISNI: 0000 0004 5357 9335. (URL: https://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.651301).
22. Al-Showarah, S., Al-Jawad, N., Sellahewa, H., (2014). "Effects of User Age on Smartphone and Tablet Use, Measured with an Eye-Tracker via Fixation Duration, Scan-Path Duration, and Saccades Proportion". HCI International 2014. C. Stephanidis & M. Antona, eds. Universal Access in Human-Computer Interaction. Universal Access to Information and Knowledge. Springer International Publishing, pp. 3-14. (URL: https://link.springer.com/chapter/10.1007/978-3-319-07440-5_1).
23. Al-Showarah, S., Al-Jawad, N., Sellahewa, H., (2014). "User's Age Classification on Smartphones using Gesture-based Applications". BCS Doctoral Consortium 2014, London Central Branch.
24. Al-Showarah, S., Al-Jawad, N., Sellahewa, H., (2013). "Examining eye-tracker Scan-paths for elderly people using smart phones". York Computer Science (YCS) technical report, pp. 255-261. (URL: https://www.cs.york.ac.uk/ftpdir/reports/2014/YCS/493/YCS-2014-493.pdf).

Teaching Experience (courses taught)

Postgraduate courses:

- Programming Language Structure
- Advanced System Analysis & Design
- Advanced Software Engineering
- Software Maintenance and Evolution
- Software Design and Architecture
- Special Topics-System Reengineering
- Research Project
- Software Testing, validation and verification
- Research methodology

Undergraduate courses:

- Intelligent System Engineering
- Fundamentals of Software Engineering
- Entrepreneurship and Project Planning

- Software Testing
- Object Oriented Software Development
- Operating Systems
- Android Applications Programming
- Software Ethics and Security
- Information Security
- Data Structure
- Algorithm
- Object Oriented Programming
- Database systems
- Visual Programming
- Operating Systems
- Systems Analysis and Design

Training Courses

- Design the Effective E-Learning (9/9/2021 – 12/10/2021). Take Place: The Queen Rania Teacher Academy.
- The Interacting in Virtual Learning Environments (31/10/2021 -28/11/2021). Take Place: The Queen Rania Teacher Academy.
- Couse training for association professor promotion purposes (1/6/2021 – 18/9/2021). Take place: Academic Development and Quality Assurance Centre – Mutah University.

Postgraduate Thesis Supervision

Mutah University, Jordan:

- Raeda Shbtat, thesis title: “A New Framework for Enhanced IOT Security Using Blockchain A Focus Towards Ddos Attack”, 2024
- Abubaker Al-Taie. Thesis title: "Predict Quality Medical Drug Data Towards Meaningful Data Using AI Algorithms". (2023)
- Sohyb T. Al-qbailat, Thesis title: "Birds Identification System using Deep Learning", (2021)
- Amani AL-Btoush, thesis title: “Automatic generation of descriptive summary for source code artifact”, 2019
- Mosab Al-tarawneh, thesis title: “Using Software Metric to Evaluate the Evolution on the System”, 2018

Committees

Mutah University, Jordan:

- Member of the scientific and research council committee at the university
- Head of the post graduate studies committee at the faculty.
- Head of the quality assurance committee at the faculty.
- Head of the study plans committee at the department.

- Head of the undergraduate projects committee at the faculty.
- Head of the software engineering council.
- Head of establishing a MSc program in software engineering department committee
- Head of the scientific workshop in IT committee
- Member of the undergraduate studies committee at the faculty.
- Member of the Accreditation Board of Engineering and Technology (ABET) committee.

Publication and Organization committees at International Journals/Conferences (reviewer):

- Neural Computing and Applications, Journal Impact Factor: 4.5 (2023). E-ISSN: 1433-3058 ISSN: 0941 0643. URL: https://link.springer.com/journal/521
- ICICS (2017 – 2024): The 10th - 15th International Conference on Information & Communication Systems. IEEE Xplore. URL: https://www.just.edu.jo/icics/
- The International Conference on Emerging Trends in Computing and Engineering Applications (ETCEA2022). IEEE Xplore. https://eportal.mutah.edu.jo/etcea2022/
- International Journal of Computing and Digital Systems. University of Bahrain. EISSN: 2210-142X. URL: https://ijcds.uob.edu.bh/
- Visual Computing for Industry, Biomedicine, and Art. Springer Science and Business Media Deutschland GmbH – German. EISSN: 2524-4442. ISSN: 2096-496X. URL: https://vciba.springeropen.com/
- International Journal of Interactive Mobile Technologies (iJIM). EISSN: 1865-7923. URL: https://online-journals.org/index.php/i-jim
- International Journal of Advances in Soft Computing and its Applications (IJASCA). E ISSN: 2074-8523 ISSN: 2710-1274. URL: https://ijasca.zuj.edu.jo/Default.aspx
- 12th International Conference on Information Technology (ICIT 2025). Al-Zaytoonah University of Jordan in collaboration with British Telecommunications (BT), the BT Ireland Innovation Centre (BTIIC), and Ulster University (UK), and technically co-sponsored by IEEE Xplore. URL: https://icit.zuj.edu.jo/Home/
- Nature Machine Intelligence, Springer Nature Switzerland AG. Switzerland. E ISSN: 2522-5839. URL: https://www.nature.com/natmachintell/submission-guidelines

Grants/ Awards

- "U.S.-Jordan partnership for University Leadership and Student Engagement" (PULSE) July 24-26, 2022 - U.S.-Jordanian University Cooperation Network (UCN).
    - A grant was given to my accepted article that presented in the conference within the framework of UCN's joint cooperative project "PULSE" titled: New Approaches to US-Jordan University Collaboration for Sustainable Development
    - It was held from Sunday 24/07/2022 to Monday 25/07/2022, in Prince Al-Hussein Bin Abdullah II School of International Studies.

Attended Conferences/Symposium/ Workshop

- Capacity-building workshop on Artificial Intelligence, hosted by the British Council, scheduled for **17th September 2025**, Amman - Jordan.

- Capacity Building: Active Pedagogies for Critical Thinking in a Changing World. Jordanian National Qualifications Framework (JNQF). Hosted by the British Council, scheduled for 3rd **December 2025**, Amman - Jordan.
- Learning and Teaching Capacity-building Workshop. Hosted by the British Council, scheduled for Wednesday, **20th November 2025**, Amman - Jordan.
- (ICIT 2025) 12th International Conference on Information Technology. Innovation Technologies. May 27th-30th,2025, Amman,Jordan
- PULSE - Event program "U.S.-Jordan partnership for University Leadership and Student Engagement" - July 24-26, 2022. U.S.-Jordanian University Cooperation Network (UCN). The participation was in deep learning and AI. Titled by (Customized User Interfaces Based on Users' Fingers on Touchscreen Gestures using AI Algorithms). The presenter (me) represents Mutah University in this grant project, which was held in the University of Jordan.
- ETCEA – 2022 International Conference on Emerging Trends in Computing and Engineering Applications (Co-Chair Artificial Intelligence and Member of the Editorial Board)
- IJECSA - International Journal of Engineering for Computer Science and Application (Honorary Member of the Editorial Board)
- IT 2020 - 9th International Conference on Information Theory (IT 2020) - March 28 ~ 29, 2020, Sydney, Australia. (PC Member)
- ICICS 2019 -The 10th International Conference on Information and Communication Systems, Jordan. (PC Member/ Presenter)
- ICSIC 2019 - THIRD INTERNATIONAL CONFERENCE ON COMPUTER SCIENCE AND INFORMATICS – Amman Arab University, Jordan. (PC Member)
- BINCOM 2018 – Conference on Business and Technology Electronic (22-23/4/2018) - Business and Commercial Electronic (Aamalcom), Jordan. (PC Member)
- ACIT 2015 - International Arab Conference on Information Technology (15 and 17 December, 2015) - Isra University, Jordan. (PC Member)
- UAHCI 2014 - 8th International Conference: Universal Access in Human-Computer Interaction. Universal Access to Information and Knowledge– Greece. (Presenter)
- YDS 2013 - The 6th York Doctoral Symposium on Computer Science, UK. (Presenter)
- BCS 2014 - Doctoral Consortium 2014, London Central Branch. (PC Member/ Presenter)