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07/01/1980

PhD, MSc, BSc – Computer Science

Full Professor of Computer Science/ Network and Security

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RESEARCH INTERESTS

- Machine Learning- ANN, KNN, Fuzzy Logic, Deep Learning.
- Wireless Networking- Handoff, 3G, 4G, 5G, Wi-Fi.
- Smartphone Technology- Smart Devices Sensors.
- Indoor Localization- fingerprinting, Trituration, Smartphone-Based.
- Natural Language Processing
- Network Security.
- Computer Network.

EDUCATION

- **Ph.D.** : 2011. 02 – 2015. 04 Department of Computer Science, **Korea Advanced Institute of Science and Technology (KAIST)**: GPA (3.8 out of 4.3)
- **M.S.**: 2007. 08 – 2010. 02 Department of Computer Science, Jordan University: GPA (3.94 out of 4)
- **B.SC.**: 1998. 08 – 2002. 06 Department of Computer Science, Mutah University: GPA (79.88 %)

ACADMIC EXPERIENCE

- **2025.10 – presents** Full Professor / Department of Computer Science/Applied College at University of Tabuk, Saudi Arabia
- **2023.10 – 2025.12** Associate Professor / Department of Computer Science/Applied College at University of Tabuk, Saudi Arabia
- **2020.04 – 2023.10** Associate Professor / Department of Computer Science at Mutah University, Jordan.
- **2017.05 – 2021.06** Director of Computer Center at Mutah University, Jordan.
- **2015 – 2017**: Head of Computer Science Department at Mutah University, Jordan.
- **2015.04 – 2020.04** Assistant Professor / Department of Computer Science at Mutah University, Jordan.
- 2010. 07 – 2011. 02 Lecturer / Department of Computer Science at Mutah University, Jordan.
- 2002. 08 – 2010. 06 Lab Supervisor / Technician at Department of Computer Science at Mutah University (C++, Assembly, Data structure, Java, Object

oriented programming, Database programming, Web design and developing) , Jordan.

PATENT

- Indoor Localization using physical map and smartphone sensors, Korea 10-2013-0039054.
- Wind Pattern Analysis and Integrated TinyML Sensors for Red Palm Weevil Detection (**Patent Application**).

PUBLICATIONS

1. Afrin, N., Fahim, M. A. N. I., Alamro, W., Allawi, Y. M., Abadleh, A., Sultan, S. M., ... & Zreikat, A. I. (2026). MedSpectralNet: A lightweight convolutional neural network architecture for multi-modal image classification. *PloS one*, 21(4), e0346128.
2. Sabbah, A., & Abadleh, A. (2026). Digital misinformation and antimicrobial stewardship: cross-platform epidemiologic signals from a decade of online discourse (2015–2025). *Infection Control & Hospital Epidemiology*, 1-7.
3. Alghamdi, M., Abadleh, A., Mnasri, S., Alrashidi, M., & Alkhazi, I. S. (2026). PalmRachis-BiLSTM-Attn: An Anatomically Guided Explainable Deep Learning Framework for Spatial–Temporal Progression Modeling of Date-Palm Leaf Diseases. *IEEE Access*.
4. Al-Shqeerat, K. H. A., Al Abadleh, A. H., Dutta, A. K., Tejani, G. G., Sharma, S. K., & Mousavirad, S. J. (2026). An AI-driven multimodal developmental disability detection and intervention framework using enhanced speech and behavioral analysis with BioNeuroFusionNet classification. *Journal of Big Data*.
5. Al-Saleh, A., Al-Shqeerat, K.H.A., Abadleh, A.H.A.L., Dutta, A.K., Tejani, G.G., Mousavirad, S.J., 2026. A Hybrid Deep Learning Framework for Early Detection of Developmental Disabilities Using Speech and Behavioral Biomarkers. *Array* 100691.
6. Al-Shqeerat, K.H.A., Al Abadleh, A.H., Sharma, S.K., Kumar, P., Tejani, G.G., Bassir, D., 2026. MQAD-net: multi-modal quantum-attentive deep learning framework for early mental health detection and personalized therapy recommendation. *Egypt. Informatics J.* 33, 100874.
7. Ayon, S.S., Al Mamun, A., Hossain, M.E., Alamro, W., Allawi, Y.M., Prova, N.N.I., Miah, M.S.U., Sultan, S.M., Abadleh, A., 2026. Explainable AI framework for improved Thalassemia mental health classification and feature selection. *PLoS One* 21, e0341168.
8. Btoush, A., Abadleh, A., Alkasasbeh, A.A., Abdallah, W., Zreikat, A.I., Moustafa, N., 2026. A Lightweight Real-Time Detection and Recovery Framework For Deauthentication Attacks in WPA3-SAE Networks. *Int. J. Softw. Eng. Knowl. Eng.*
9. Abadleh, A., 2025a. ECG-Based Biometric Key Generation Using Principal Component Analysis and Machine Learning. *Iraqi J. Comput. Sci. Math.* 6, 20.
10. Abadleh, A., 2025b. Mitigating the Effect of the Rogue Access Point Based on Machine Learning. In: 2025 4th International Conference on Computing and Information Technology (ICCIT). pp. 221–225.
11. Abadleh, A., Allawi, Y.M., Zreikat, A.I., 2025. Machine Learning-Based Beam Forming Prediction for Energy-Efficient 6G mmWave. In: 2025 IEEE International Conference on Emerging Trends in Engineering and Computing (ETECOM). pp. 1–5.

12. Al Abadleh, A.H., Al-Shqeerat, K.H.A., 2025. Hybrid Feature Extraction-based Learning Disabilities Identification Model. *J. Disabil. Res.* 4, 20250612.
13. Al Abadleh, A.H., Al-Shqeerat, K.H.A., Shaikh, M.A., Sait, A.R.W., 2025. Unravelling handwriting images: deep neural models for dyslexia, dysgraphia, and other learning disabilities detections and classifications: a literature review. *PeerJ Comput. Sci.* 11, e3296.
14. Alawasa, K., Allahham, A., Al-Halhouli, A., Al-Mahmodi, M., Hamdan, M., Khawaja, Y., Muhsen, H., Alja'afreh, S., Al-Odienat, A., Al-Dmour, A., others, 2025. Techno-Socio-Economic Framework for Energy Storage System Selection in Jordan. *Energies* 18, 3099.
15. Alghamdi, M., Abadleh, A., Mnasri, S., Alrashidi, M., Alkhazi, I.S., Alghamdi, A., Albelwi, S., 2025. Hazard-and Fairness-Aware Evacuation with Grid-Interactive Energy Management: A Digital-Twin Controller for Life Safety and Sustainability. *Sustainability* 18, 133.
16. Hayat, M.T., Allawi, Y.M., Alamro, W., Sultan, S.M., Abadleh, A., Kang, H., Zreikat, A.I., 2025. A hybrid convolutional neural network--long short-term memory (CNN--LSTM)--attention model architecture for precise medical image analysis and disease diagnosis. *Diagnostics* 15, 2673.
17. Tareef, A., Allawi, Y.M., Alkasasbeh, A.A., Abadleh, A., Alamro, W., Alghamdi, M., Zreikat, A.I., Kang, H., 2025. A machine learning approach for detecting WPA3 downgrade attacks in next-generation Wi-Fi systems. *PLoS One* 20, e0331443.
18. Zreikat, A.I., AlArnaout, Z., Abadleh, A., Elbasi, E., Mostafa, N., 2025. The Integration of the Internet of Things (IoT) Applications into 5G Networks: A Review and Analysis. *Computers* 14, 250.
19. Abadleh, A., 2024. Integrating GPS and WiFi signal strength analysis for enhanced building entrance localization using fuzzy logic. *J. Electr. Eng.* 75, 297–303.
20. Allawi, Y.M., Mohammed, A.F.Y., Moneer, E.M., Shbat, M., Abadleh, A., Bilal, M., 2024. Cost-efficient citywide neutral host design: A micro-operator business model for expedited 5G and beyond network infrastructure rollout. *IEICE Trans. Commun.*
21. Abadleh, A., 2023a. Signal Loss Detection and Correction for Improved Distance Estimation in Indoor Environments Using Path Loss Models. *Int. Rev. Model. Simulations* 16, 112.
22. Abadleh, A., 2023b. Landmark-Based Indoor Positioning: a Non-Intrusive and Cost-Effective Approach. *Int. J. Commun. Antenna Propag.* 13, 55–62.
23. ABADLEH, A., AL-SARAIHEH, A., HAMZEH EYAL SALMAN, A.A.L., AKASASBEH, S.A., HAMMOURI, A., RA'FAT, A.-M., HASSANAT, A., 2022. COVID-19 DISEASE RECOGNITION USING DISTRIBUTED DATA MINING AND DEEP LEARNING. *J. Theor. Appl. Inf. Technol.* 100.
24. Abadleh, A., Btoush, A., Alkasasbeh, A.A., Mahadeen, A., Al-Hawari, E., Tareef, A., Al-Mjali, M.M., 2022a. Mitigating the Effect of Blackhole Attacks in MANAT. *J. Eng. Sci. Technol. Rev.* 15, 107–114.
25. Abadleh, A., Qatawneh, M., 2022. Deep Neural Network-based Approach to Identifying Road Lanes. *INT J ARTIF INTELL T* 31, 2250043.
26. Abadleh, A., Tareef, A., Btoush, A., Mahadeen, A., Al-Mjali, M.M., Alja'afreh, S.S., Alkasasbeh, A.A., 2022b. Comparative Analysis of TCP Congestion Control Methods. In: 2022 13th International Conference on Information and Communication Systems (ICICS). IEEE, pp. 474–478.

27. Al-Msie'deen, R., Blasi, A.H., Salman, H.E., Alja'afreh, S.S., Abadleh, A., Alsuwaiket, M.A., Hammouri, A., Al-Nawaiseh, A.J., Tarawneh, W., Al-Showarah, S.A., 2022. Detecting commonality and variability in use-case diagram variants. *CoRR*.
28. Alja'afreh, S., Alabadleh, A., 2022. A Broadband Antenna Based on a Single CRLH TL Unit Cell and a Parasitic Strip for Sub-1GHz DVB and LTE Applications. *Int. J. Commun. Antenna Propag.* 12, 65–73.
29. Aljaafreh, A., Abadleh, A., Alja'afreh, S.S., Alawasa, K., Almajali, E., Faris, H., 2022. Edge deep learning and computer vision-based physical distance and face mask detection system using Jetson Xavier NX. *Emerg. Sci. J.* 7, 70–80.
30. Altarawneh, G.A., Hassanat, A.B., Tarawneh, A.S., Abadleh, A., Alrashidi, M., Alghamdi, M., 2022. Stock Price Forecasting for Jordan Insurance Companies Amid the COVID-19 Pandemic Utilizing Off-the-Shelf Technical Analysis Methods. *Economies* 10, 43.
31. Maayah, R., Abadleh, A., Al-Subehat, E., 2022. Analysis of RSS Patterns to Detect Rogue Access Points. In: 2022 International Conference on Emerging Trends in Computing and Engineering Applications (ETCEA). pp. 1–5.
32. Abadleh, A., Al-Mahadeen, B.M., AlNaimat, R.M., Lasassmeh, O., 2021. Noise segmentation for step detection and distance estimation using smartphone sensor data. *Wirel. Networks* 27, 2337–2346.
33. Alja'afreh, S.S., Alabadleh, A., Aljaafreh, A., 2021. An Industry-related Course Development for Mobile Communications Systems in Undergraduate Curriculum of Communications Engineering. In: 2021 International E-Engineering Education Services Conference (e-Engineering). pp. 29–35.
34. Aljaafreh, A., Alabadleh, A., Alja'afreh, S., Alaqtash, M., Abukhait, J., 2021. A questionnaire study on the practice of teaching strategies and technology tools in jordanian engineering teaching. In: 2021 International E-Engineering Education Services Conference (e-Engineering). pp. 43–48.
35. Alnabhan, M., Al-Jaafreh, S., Abadleh, A., Atoum, M., Hammouri, A., Al-dalahmeh, M., 2021. Enhanced D2D Communication Model in 5G Networks. *Int. J. Comput. Digit. Syst.* 10, 217–223.
36. Alnabhan, M., Al-qatawneh, E., Alabadleh, A., Atoum, M., Alnawyseh, M., 2020. Efficient Handover Approach in 5G Mobile Networks. *Int. J. Adv. Sci. Eng. Inform. Technol* 10, 1417–1422.
37. Abadleh, A., 2019a. Accurate entrance position detection based on Wi-Fi and GPS signals using machine learning. *arXiv Prepr. arXiv1912.04556*.
38. Abadleh, A., 2019b. Wi-Fi RSS-based approach for locating the position of indoor Wi-Fi access point. *Commun. Lett. Univ. Zilina* 21, 69–74.
39. Abadleh, A., Maitah, W., Salman, H.E., Lasassmeh, O., Hammouri, A., 2019. Smartphones-Based Crowdsourcing Approach for Installing Indoor Wi-Fi Access Points.
40. Al-Tarawneh, N.A., Abadleh, A.H., Alhalhouli, Z.T., 2019. Direction Estimation Using Patterns of User Movement. *J. Eng. Sci. Technol. Rev.* 12, 195–201.
41. Alja'afreh, S., Alshamaileh, M., Almajali, E., Abadleh, A., 2019. A New Reconfigurable Antenna for Full-band Metal-Rimmed Smartphones' Applications. In: 2019 International Conference on Communications, Signal Processing, and Their Applications (ICCSPA). pp. 1–4.
42. Aljaafreh, A., Al-Tahiri, R., Abadleh, A., Mansour, A.M., 2019a. Automation of traditional butter and ghee production. *Food Nutr. Sci. Int. J.* 3.

43. Aljaafreh, A., Al-Tahiri, R., Abadleh, A., Mansour, A.M., Alaqtash, M., 2019b. Design and development of an automated and quality controlled system for traditional butter and ghee production. *Wseas Trans. Environ. Dev.* 15, 478–484.
44. Mars, A., Abadleh, A., Adi, W., 2019. Operator and Manufacturer Independent D2D Private Link for Future 5G Networks. In: *IEEE INFOCOM 2019-IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS)*. IEEE, pp. 1–6. **(Funded by DFG - Germany)**
45. Mohammad Abbadi Ahmad Abadleh, S.A.Z.H., 2019. Machine Learning-Based Approach For Detecting Driver Behavior Using Smartphone Sensors. *Int. J. Sci. & Technol. Res.* 8, 1057–1060.
46. Abadleh, A.H., 2018. Smartphone Based Distance Estimation Algorithm Using Dynamic Step Length. *Int. J. Commun. Antenna Propag.* 8, 333–339.
47. Alabadleh, A., Aljaafreh, S., Aljaafreh, A., Alawasa, K., 2018. A RSS-based localization method using HMM-based error correction. *J. Locat. Based Serv.* 12, 273–285.
48. Hamadaqa, E., Abadleh, A., Mars, A., Adi, W., 2018. Highly Secured Implantable Medical Devices. In: *2018 International Conference on Innovations in Information Technology (IIT)*. IEEE, pp. 7–12. **(Funded by DFG - Germany-Best Paper Award)**
49. Mulhem, S., Abadleh, A., Adi, W., 2018. Accelerometer-Based Joint User-Device Clone-Resistant Identity. In: *2018 Second World Conference on Smart Trends in Systems, Security and Sustainability (WorldS4)*. IEEE, pp. 230–237. **(Funded by DFG - Germany)**
50. Abadleh, A., Al-Hawari, E., Alkafaween, E., Al-Sawalqah, H., 2017. Step detection algorithm for accurate distance estimation using dynamic step length. In: *2017 18th IEEE International Conference on Mobile Data Management (MDM)*. IEEE, pp. 324–327.
51. Aljaafreh, A., Alawasa, K., Alja'afreh, S., Abadleh, A., 2017. Fuzzy inference system for speed bumps detection using smart phone accelerometer sensor. *J. Telecommun. Electron. Comput. Eng.* 9, 133–136.
52. Alsawalqah, H., Al-Shboul, B., Alshamaileh, Y., Faris, H., Aljarah, I., Abadleh, A., 2017. A Proposed Index for Evaluating Component Commonality for Software Product Family. *New Trends Inf. Technol. (NTIT)*--2017 9.
53. Abadleh, A., Han, S., Hyun, S.J., Lee, B., Kim, M., 2016. Construction of indoor floor plan and localization. *Wirel. Networks* 22, 175–191.
54. Abadleh, A., Han, S., Hyun, S.J., Lee, B., Kim, M., 2014. ILPS: Indoor localization using physical maps and smartphone sensors. In: *Proceeding of IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks 2014*. pp. 1–6.

FUNDED PROJECTS

- Towards improved networks security campus at Mutah University: **Funded by Deanship of Scientific and research at Mutah University, Jordan, 2018.**
- An Intelligent Method for enhancing the archiving and registration system at Mutah University: **Funded by Deanship of Scientific and research at Mutah University, Jordan, 2018.**

- Computer-vision based automatized assessment of COVID-19 protective equipment usage in Jordan: **Funded by Scientific Research Support Fund, Jordan, 2020.**
- Severe Illness Detection for Home-Quarantined COVID-19 Patients Using Wearable Sensors and IoT Technology: **Funded by Scientific Research Support Fund, Jordan, 2020.**
- Decarbonizing Jordanian Energy Systems Utilizing Smart Solutions based on Energy Storage: **Funded by Royal Academy of Engineering, UK, 2021.**
- Fostering Clean Energy transition in Jordan Utilizing Energy Storage Technologies and integrating Demand Side Management: **Funded by Royal Academy of Engineering, UK, 2024.**
- **Smart Agriculture in Saudi Arabia:** Funded by the Deanship of Research and Graduate Studies at the University of Tabuk.
- **Fire and Safety:** Funded by the Deanship of Research and Graduate Studies at the University of Tabuk.

RESEARCH VISIT – DFG GRANT 2018 – Germany- Network Security Grant

Grant From: German Research Foundation.

University: Technical University of Braunschweig, Germany.

Project Name: "Securing privacy on Indoor localization crowdsourcing approach".

Duration: Three months.

Output: Publishing three papers on the field of network security.

ACHIEVEMENTS

- Recognized **among the top 2% of the world's most influential** researchers in the annual ranking by Stanford University for the year 2023: Elsevier Data Repository.
- **Track Chair** of Network Track at the 2022 International Conference on Emerging Trends in Computing and Engineering Applications (ETCEA), **Jordan**
- **Best Paper Award:** Highly Secured Implantable Medical Devices, International Conference on Innovations in Information Technology (IIT), **UAE**

COURSES

- Artificial Intelligence.
- Computer Network.
- Programming languages.
- Database.
- Computer Algorithm.
- Wireless Networks.
- Advanced Database.
- Advanced Network.
- Computer Security.
- Network Security.

- Operating Systems.
- ASP, VB, C#, C++, Java Programming, Mobile programming, Python.
- Enterprise Networks.
- Technical Skills.
- Ethical Hacking.
- Cybercrime and Digital Forensics.
- Routing and Switching.

MASTER THESES SUPERVISION

- Enhancing Wi-Fi Security by Preventing Backward Compatibility Attacks on WPA3 Protocols.
- Ensuring WIFI 6 Network Availability using Robust WPA3 Security.
- Indoor Localization using Smartphone Sensors.
- Distance Estimation using accelerometer.
- An approach for detecting malicious content on Facebook pages.
- Direction finding system using Smartphone sensors.
- An approach for preprocessing and clustering documents based on given keywords.
- Wi-Fi Based crowdsourcing for indoor localization using Smartphone.
- An approach for automatic assessment of student grades.
- An autonomous road elements detection approach based on deep neural network.
- Suspicious Behavior Detection on Shoplifting Cases for Crime Prevention by Using Neural Networks.
- Highly Secure Wireless Network by Detecting of Rogue Access Points and Preventing Cloning of Legitimate Access Point.
- NLP-Based Approach for Rumors Detection on Social Media.

REFERENCES

- Prof. Thafer Y. Assaraira: President of Higher Education Accreditation and Quality Assurance Commission
- Prof. Arafat A. Awajan: Former President of Mutah University.
- Prof. Ala'aldeen Al-Halhouli: President of German Jordanian University.