ASHWAG O. ALBAKRI

Jazan, Saudi Arabia
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Education

University of Missouri-Kansas City, MO   May 2020
- *PhD in Computer Science*
- GPA: 3.97 (out of 4.00)

University of Pittsburgh, PA   December 2015
- *Master of Science in Information Science*
- GPA: 4.00 (out of 4.00)

King Abdulaziz University, KSA   December 2010
- *Bachelor of Science in Computer Science*
- GPA: 3.9 (out of 4.00), with first honor.

Skills

- Computer skills: Java, C, python, Go, Java Security, Android Applications, Linux OS, Oracle Database, Kali Linux, MS SQL server, HTML, Matlab, LaTeX
- Languages: Arabic (native), English (advance).

Academic Certifications

- **Graduate Certificate in College Teaching & Career Preparation**
  - ❖ University of Missouri-Kansas City, Kansas City, MO (2018-2020)
  - ❖ It is a graduate certificate that prepares a graduate student to become a professor at diverse higher education institutions.
- **Intensive English Program**
  - ❖ English Language Institute (ELI), University of Pittsburgh, USA (2012-2014)
- **Certificates of excellence**
  - ❖ Department of Computer Science, King Abdul-Aziz University, Saudi Arabia.
  - ❖ 5 Certificates (2016-2010)

Professional Certifications

- ASQ "*Certified Manager of Quality/ Organizational Excellence*" certification training (No. 2021/78349)
  - ❖ LEORON professional Development Institute
  - ❖ July 11-15, 2021
- Training of Trainer (ToT)
  - ❖ Technical and Vocational Training Corporation, Saudi Arabia
  - ❖ Total of 30 hours, from 15-5-2020 to 20-5-2020
- Certified Blockchain Expert (CBE)
- CNSS 4011: Information System Security Professionals
- CNSS 4012: Designated Approving Authority
- CNSS 4013: System Administrators in Information Systems Security

Scholarships & Awards

Scholarships

Grace Hopper Celebration (GHC) Student Scholarship 2018 , Houston, USA.
Ministry of Education- Jazan University 2015-2020
- Full scholarship to pursue PhD degree in the University of Missouri- Kansas City, MO.

Ministry of Education –Jazan University 2014-2015
- Full scholarship to pursue Master degree in the University of Pittsburgh, PA.

Saudi Arabia Cultural Mission 2012-2013
- Full scholarship to study English as a Second Language in the University of Pittsburgh, PA.

Awards

- Excellence Award, Ministry of Education, 2022-2023.
- Scientific Research paper award (Q3), Jazan University, 2022.
- Scientific Research paper award (Q1), Jazan University, 2021.
- Graduate Assistance Fund (GAF) award 2019-2020
- UMKC Doctoral Award 2017-2020
- UMKC CSEE Instructor Support Award 2017-2018
- SACM Outstanding Student Award 2015
- SACM Student Graduating from top ten USA University Award 2015
- SACM Student Graduating before the Academic Program Deadline 2015

Research Interests

Research Grant

1. Institutional Funds and Innovation Program - Phase II (grant number: ISP22-13)

Title: Mathematical modeling and control of infectious disease problems

Abstract: Epidemiological research helps us to understand how many people a disease or disorder has, if those numbers are changing, and how the disorder affects our society and our economy. The rise of co-infections and the advancement of drug-resistant pathogens constrain the utility of current treatments against diseases and creating nations in specific are confronting an awesome challenge in combating irresistible infection. Later advancements in nanotechnology permit us to address this issue at two levels: diagnostics and treatment. Anticipation of the spread of irresistible pathogens requires fast and exact recognizable proof of the irresistible specialists for legitimate treatment. Appropriate and successful treatment not as it were sparing the understanding, but too anticipates the spread of the pathogens. Particular nanoparticle vehicles created to typify restorative specialists and convey them to a target location speak to a promising procedure to boost safe reactions for immunization and boost the adequacy of drugs for treatment. Here, we portray an assortment of nanotechnologies for use in applications such as resistant reaction balance, sedate conveyance, diagnostics, and treatment, which are particularly required in creating nations.

2. Institutional Funds and Innovation Program - Phase II - College Research Unites (RUP3-01)

Title: An Internet of Medical Things (IoMT) Security approach for Blockchain in Healthcare Industry

Abstract: Due to the sensitivity of the medical records, it becomes of great importance to design healthcare systems taking into account the necessary security services such as confidentiality, privacy, and integrity. Most healthcare systems are centralized in which patient's records are stored locally. That approach limits the accessibility of data by researchers, and it becomes vulnerable to a single point of failure which could lead to catastrophe effects, i.e., data losses. Blockchain is a distributed ledger in which data is stored in a block, and the blocks are chained by running cryptographic techniques to provide immunity to the ledger and to the data stored in the ledger. In order to develop a smart and distributed healthcare system, we propose an Internet of Medical Things (IoMT) security approach for blockchain in healthcare systems. With our proposed solution, we aim to adopt new technologies, i.e., IoT and Blockchain, to overcome security issues exist in the current centralized healthcare systems, and provide a more distributed environment to preserve the confidentiality and the privacy of patients health records. In addition, with the current technology utilized in this project, we aim to achieve one of the Kingdom vision 2030 related to adopting new technologies to facilitate digital transformation and build more sustainable smart environments

3. Waad Program (grant number W44-83)

Title: Secure and Privacy-preserving Blockchain-based Internet of Medical Things (IoMT) framework for personal health records and disease prediction

Abstract: A linked smart-medical device infrastructure with apps, health services, and systems is known as the Internet of Medical Things (IoMT). The healthcare systems are connected to these medical types

of equipment and software via the Internet. The most difficult IoT concerns (especially in IoMT) must be taken into account, including patient data privacy and security, scalability, and data accessibility. In order to store and process these recordings for later use in disease prediction and specialized drug research, patient trust in the system is crucial. Blockchain has the potential to transform how patient data is currently accessed, exchanged, accumulated, controlled, and contributed. Blockchain is used by the IoMT-based security framework to ensure data management and transmission security between connected nodes. Further, the study proposes a framework for privacy-preserving and secure mechanisms for applying Machine Learning classifiers such as Linear regression, Multi-Layer Perception, and Vector Auto Regression are applied in this study to predict various diseases. This will improve the early detection of diseases and countering them early which will help in better diagnosis and treatment that will provide a holistic healthcare environment.

4. Research Unit (grant number RUP2-01)

Title: Secure Group Communications in the Internet of Things (IoT)

Abstract: Internet of Things (IoTs) is a collection of devices embedded with sensors, actuators, and network connectivity that allow devices to communicate and exchange data with each other. IoTs are considered the building blocks for many smart settings such as smart home, smart cities, and smart healthcare. It is predicted that the number of IoT devices connected in different applications has been increasing dramatically; and this continuing growth in the field of IoT shows the wide expansion and adoption of smart technologies. Due to sensitivity of data collected by the IoTs devices, it becomes of a great importance to secure the data before transmitting it over the Internet. One of the security services required in many IoT application domains is secure group communication in which a shard secret key, *called a group key*, is established among privileged members for confidential communication. Designing a security protocol for group communication in IoTs is a challenging task due to the limited resources of the IoT devices, that is limited computation, storage, and processing capabilities as well as energy consumptions. In this research work, we aim at designing an efficient lightweight group key management protocol that provide group authentication and group key establishment for secure group communication in IoT-based application domains considering the inherent characteristic of the IoT devices.

Publications

Journal Articles

1. A. Albakri and L. Harn, "Non-Interactive Group Key Pre-Distribution Scheme (GKPS) for End-to-End Routing in Wireless Sensor Networks," in *IEEE Access*, vol. 7, pp. 31615-31623, 2019.

2. A. Albakri, L. Harn, and S. Song, "Hierarchical Key Management Scheme with Probabilistic Security in a Wireless Sensor Network (WSN)," *Security and Communication Networks*, vol. 2019, Article ID 3950129, 11 pages, 2019. https://doi.org/10.1155/2019/3950129.

3. A. Albakri, H. Fatima, M. Mohammed, A. Ahmed, A. Ali, A. Ali, N. M. Elzein, "Survey on Reverse-Engineering Tools for Android Mobile Devices", *Mathematical Problems in Engineering*, vol. 2022, Article ID 4908134, 7 pages, 2022. https://doi.org/10.1155/2022/4908134.

4. El-Sherif, D.M.; Abouzid, M.; Elzarif, M.T.; Ahmed, A.A.; **Albakri, A**.; Alshehri, M.M. "Telehealth and Artificial Intelligence Insights into Healthcare during the COVID-19 Pandemic". *Healthcare* 2022, *10*, 385. https://doi.org/10.3390/healthcare10020385

5. Farooq, U., Waqas, H., Imran, M., **Albakri, A.**, Muhammad, T., "Numerical investigation for melting heat transport of nanofluids due to stretching surface with Cattaneo-Christov thermal model", Alexandria Engineering Journal, 61 (9), 2022, pp. 6635-6644, ISSN 1110-0168, https://doi.org/10.1016/j.aej.2021.12.020

6. Uzma Sultana, Muhammad Mushtaq, Taseer Muhammad, **Ashwag Albakri**, "On Cattaneo-Christov heat flux in carbon-water nanofluid flow due to stretchable rotating disk through porous media", Alexandria Engineering Journal, 61(5), 2022, Pp. 3463-3474, ISSN 1110-0168, https://doi.org/10.1016/j.aej.2021.08.065

7. Ahmad, S., Ali, S., Ullah, I., Zobaer, M. S., **Albakri, A.,** Muhammad, T*."* Synthesis and characterization of manganese ferrite from low grade manganese ore through solid state reaction route". *Sci Rep* 11, 16190 (2021). https://doi.org/10.1038/s41598-021-95625-z

8. Basavarajappa M, Lorenzini G, Narasimhamurthy S, **Albakri A**, Muhammad T. "Heat Transfer of Nanomaterial over an Infinite Disk with Marangoni Convection: A Modified Fourier's Heat Flux Model for Solar Thermal System Applications". *Applied Sciences*. 2021; 11(24):11609. https://doi.org/10.3390/app112411609

9. Usman, S. Shaheen, M.B. Arain, Kottakkaran Sooppy Nisar, **Ashwag Albakri**, MD Shamshuddin, Fouad Othman Mallawi, "*A Case Study of Heat Transmission in a Williamson Fluid Flow Through a Ciliated Porous Channel: A Semi-Numerical Approach*" , Case Studies in Thermal Engineering, 2023, 41, ISSN 2214-157X, https://doi.org/10.1016/j.csite.2022.102523.

10. Alharbi, F.; Zakariah, M.; Alshahrani, R.; **Albakri, A**.; Viriyasitavat, W.; Alghamdi, A.A. Intelligent Transportation Using Wireless Sensor Networks Blockchain and License Plate Recognition. *Sensors* 2023, *23*, 2670. https://doi.org/10.3390/s23052670 .

11. Ullah, I., Shukat, S., **Albakri, A**., Galal, A., Jamshed, W., "Thermal Performance of aqueous alumina-titania hybrid nanomaterials dispersed in rotating channel", International Journal of Modern Physics B, 2023.

12. Chinnasamy, P.; **Albakri, A**.; Khan, M.; Raja, A.A.; Kiran, A.; Babu, J.C. Smart Contract-Enabled Secure Sharing of Health Data for a Mobile Cloud-Based E-Health System. *Appl. Sci.* **2023**, *13*, 3970. https://doi.org/10.3390/app13063970 .

13. **Albakri, A.**; Alhayan, F.; Alturki, N.; Ahamed, S.; Shamsudheen, S. Metaheuristics with Deep Learning Model for Cybersecurity and Android Malware Detection and Classification. *Appl. Sci.* **2023**, *13*, 2172. https://doi.org/10.3390/app13042172 .

14. Muhammad Mazyad Hazzazi *, Raja Rao Budaraju, Zaid Bassfar, **Ashwag Albakri,** Sanjay Mishra. A Finite State Machine-Based Improved Cryptographic Technique. *Mathematic*s, **2023**.

15. Mohammad Mazyad Hazzazi, Muhammad Sajjad, Zaid Bassfar, Tariq Shah, **Ashwag Albakri**. Nonlinear Components of a Block Cipher over Eisenstein Integers, *CMC-Computers, Materials & Continua (CMC),* **2023** (Accepted).

16. **Albakri, A.**; Alqahtani, Y.M. Internet of Medical Things with a Blockchain-Assisted Smart Healthcare System Using Metaheuristics with a Deep Learning Model. *Appl. Sci.* **2023**, *13*, 6108. https://doi.org/10.3390/app13106108

17. **Albakri, A**.; Alshahrani, R.; Alharbi, F.; Ahamed, S.B. Fully Homomorphic Encryption with Optimal Key Generation Secure Group Communication in Internet of Things Environment. *Appl. Sci.* **2023**, *13*, 6055. https://doi.org/10.3390/app13106055

18. **Albakri, A**.; Alabdullah, B.; Alhayan, F. Blockchain-Assisted Machine Learning with Hybrid Metaheuristics-Empowered Cyber Attack Detection and Classification Model. *Sustainability* **2023**, *15*, 13887. https://doi.org/10.3390/su151813887

19. Ghailan, K. Y., Akbar, N. S., **Albakri, A**., Alshehri, M. M. Biological analysis of emerging nanoparticles with blood through propagating flow along a plumb porous canal in the occurrence of energy and heat transfer. *Surfaces and Interfaces* 2023. https://doi.org/10.1016/j.surfin.2023.103013

20. Khanum Fatima , Khan Abdur Raheem , Khan Ashfaque , Aafreen Aafreen , Khan Akhlaque Ahmad , Ahmad Ausaf , Akhtar Syed Mohammad Fauzan , Farooq Omar , Shaphe Mohammad Abu , Alshehri Mohammed M. , Shahi Fazal Imam , Alqahtani Abdulfattah S. , **Albakri Ashwag** , Obaidat Sakher M., Predicting mechanical neck pain intensity in computer professionals using machine learning: identification and correlation of key features, Frontiers in Public Health, 12, 2024, https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2024.1307592

21. Jabbari Abdoh, Teli Tawseef Ahmed, Masoodi Faheem, Reegu Faheem Ahmad, Uddin Mueen, **Albakri Ashwag**, Prioritizing factors for the adoption of IoT-based smart irrigation in Saudi Arabia: a GRA/AHP approach, Frontiers in Agronomy, 6 , 2024, https://www.frontiersin.org/articles/10.3389/fagro.2024.1335443

Conference Proceeding Papers

1. A. Albakri, and A. Abdulallem, "*The Role of Jazan University in Strengthening the Leadership Skills of Female Members of Student Clubs (a proposed vision)*", Conference on Empowering Women and Their Developmental Role in the Era of King Salman, Imam Muhammad bin Saud Islamic University, 23-24/11/2021.
2. A. Albakri, "Blockchain and Internet of Things: Opportunities and Challenges", *2021 International Conference on Software Engineering & Computer Systems and 4th International Conference on Computational Science and Information Management (ICSECS-ICOCSIM)*, Pekan, Malaysia, 24-26 August, 2021.

3. A. Albakri, M. Maddumala and L. Harn, "Hierarchical Polynomial-Based Key Management Scheme in Fog Computing," *2018 17th IEEE International Conference On Trust, Security And Privacy In Computing And Communications/ 12th IEEE International Conference On Big Data Science And Engineering (TrustCom/BigDataSE)*, New York, NY, 2018, pp. 1593-1597.

Workshops

1. A. Albakri, L. Harn, M. Maddumala. "Polynomial-Based Lightweight Key Management in

Permissioned Blockchain". *2ndInternational Workshop on the Distributed Ledger of Things (DLoT)*, co-located with the *IEEE Conference on Communications and Network Security (CNS)*, Washington DC, DC, USA, 2019, pp. 1-9.

Research Experience

University of Southern California, CA June 2019- August 2019 Visiting Student Researcher

Projects

1. Develop a Sybil Attack Detection Mechanism in distributed systems. Several cryptographic mechanisms have been implemented to help in detecting such attacks effectively. The project is built using: Python and Go programming languages and run in Linux-based systems.

2. Develop a project that controls computer via Mobile Phone system (CPM). The system consists of two parts, the client and the server. The client part is installed to run on mobile phones while the server part is installed to run on a computer whose applications will be controlled. The client and server parts will communicate through Bluetooth signals that are embedded in both hosted devices. This project is programmed with Java.
3. Develop an Android application that will work in conjunction with a server located at some organization. Users from the organization wish to have the ability to receive secure messages from a server managed by the organization. The application is developed as a client-server system where the server securely delivers messages to the client (Android application).
4. Develop a "Password Cracking" application to study the vulnerabilities of choosing weak passwords. It consists of two sub-parts, which are implementation of password authentication mechanism and password cracker. the first sub-part aims to register and add a new user into the system and stores the user's password information in a file. Then, the user login program asks for the username and password from the user and verifies it based on the information stored in the password file. In the second sub-part, I implemented a password cracker that cracks a given user's password from the message digest information present in the password file. The password cracker uses a dictionary of English words to aid the dictionary attack.
5. Develop a website that aims to help Information Science students in the University of Pittsburgh, especially the new arrivals, to know the steps required to pass the driving test and be aware of some tips that are provided in this website to get driver's licenses easily. The website provides four maps of the nearest test centers in Pittsburgh using Google map. For each center, digital maps are provided that show the route tester follows. In addition, the website demonstrates important tips to be taken into account when driving at test routes. This website developed using Web technology such as HTML and Java Script.
6. Develop an E-commerce website. The System has a database containing products, customers, employees and other data that are needed to provide the information to the users. The database of the system is managed by one of the most powerful DBMSs responsible to manage, store and retrieve data with high performance. It provides services such as browsing or searching products in stores. Also, it provides login page for employee that enables them to do different services with respect to their position. The system is built using different technologies such as SQL server, ASP.NET framework, HTML and Java and JavaScript.

Travel Grants

- UMKC School of Graduate Studies (2018-2019)
- IEEE Symposium on Security & Privacy (2019)
- IEEE Conference on Communications & Network Security (CNS) (2019)
- Saudi Arabian Cultural Mission (2017- 2018)

Academic Presentations

Conference Presentations:

1. A. Albakri, "Blockchain and Internet of Things: Opportunities and Challenges", *2021 International Conference on Software Engineering & Computer Systems and 4th International Conference on Computational Science and Information Management (ICSECS-ICOCSIM)*, Pekan, Malaysia, 24-26 August, 2021.
3. A. Albakri, M. Maddumala and L. Harn, "Hierarchical Polynomial-Based Key Management Scheme in Fog Computing," *2018 17th IEEE International Conference On Trust, Security And Privacy In Computing And Communications/ 12th IEEE International Conference On Big Data Science And Engineering (TrustCom/BigDataSE)*, New York, NY, 2018, pp. 1593-1597.
4. A. Albakri, L. Harn, M. Maddumala. "Polynomial-Based Lightweight Key Management in Permissioned Blockchain". *2nd International Workshop on the Distributed Ledger of Things (DLoT)*, co-located with the *IEEE Conference on Communications and Network Security (CNS)*, Washington DC, DC, USA, 2019, pp. 1-9.
5. A. Albakri and L. Harn. "*Poster:* Non Public-Key Solution for Key Establishment in a Permissioned Blockchain". *IEEE Symposium on Security and Privacy. May, 2019.*

Posters:

1. A. Albakri and L. Harn. "*Poster:* Non Public-Key Solution for Key Establishment in a Permissioned Blockchain". *IEEE Symposium on Security and Privacy. May, 2019.*
2. A. Albakri and L. Harn. "*Poster:* Non Public-Key Solution for Key Establishment in a Permissioned Blockchain". *UMKC annual Research Symposium - Community of Scholars. April, 2020.*

Talks:

1. A. Albakri, "*Digital skills required for the Saudi's labor markets*", Saudi Human Resources Development Fund (HADAF), 20-12-2021.
2. A. Albakri, K. Shaaban, "*The digital requirements of the labor market in the light of the Kingdom's vision 2030*", Ataa Digital, 2-9-2021.
3. A. Albakri, "*An Overview of Services Provided by the Deanship of Students Affair*", from the "Academic Advising week for the new coming students (Female Sections)" ,Jazan University, August 2021.
4. A. Albakri, "*Introduction to Cybersecurity*", Computing & Digital Week, Jazan University, Saudi Arabia, March 28th- April 1st ,2021.
5. A. Albakri, "*Introduction to Cybersecurity*", College of Computer Science and Information Technology, Jazan University, Saudi Arabia, November ,8th 2020.
6. A. Albakri, and M. Alshehri, Invited Talk "*Revisiting Teaching Style Due to COVID-19* ", HEAL lab at University of Kansas- Medical Center, Kansas City, Mo, April, 23rd 2020.

Reviewer (by Invitation)

- Journal of Intelligent & Fuzzy Systems, 2022
- IEEE Internet of Things Journal, 2022
- Journal of Computer Networks and Communications, Hindawi, 2022
- Wireless Communications and Mobile Computing- Hindawi, 2021
- IEEE Access, 2021
- GHC-Program Committee in Emerging Technology Track, 2021 (avg. 6-10 papers)
- IEEE Sensor Journal 2020
- IEEE Sensor Conference, 2020
- IEEE Global Communications Conference (GLOBCOME), 2020
- IEEE Transactions on Network and Service Management, 2020
- GHC-Program Committee in Emerging Technology Track, 2020 (avg. 6-10 papers)
- IEEE Access, 2019

Teaching & Administrative Experiences

Jazan Principality, KSA
General Secretary of the Region Council   *September 27, 2023 – present*

Jazan University, KSA

Acting Dean of Student Affair   *January 27, 2022- July 20,2022*
- *Chair of Student Fund Council*
- *Member of University Council*
- *Member of Standing Committee for Student Affairs*
- *Member of Standing Committee for Academic Affairs and Strategic Planning*
- *Member of Graduation Carmony Council*
- *Council Secretariat of Deans of Student Affairs in Saudi Universities, 2022*
- *Developing the Students Activities plan 2022-2023 (students clubs, outside activities at Saudi universities level, local activities at university and college levels, sports teams' activities, conferences)*
- *Create the financial plan of the Students Activities plan 2022-2023. I aimed to use the resources efficiently by applying for various sources of funding and enhancing the Student Fund.*

- *Achievements of the Volunteer Unit*
  3rd place in Jazan university Excellence award in Social Responsibility 2021-2022.
- *Achievements of the Sports Team Unit (Sports Federation of Saudi Universities) 2022:*
  3rd place in the Soccer (in door) championship
  3rd place in the Disability (Athletics- goal ball) championship
  3rd place in the Tennis (Table) championship

Vice Dean of the Deanship of Student Affairs   February, 28th 2021- present
- *Quality & Excellence Unit*
  Deanship representative for King Abdulaziz Award for Excellence (Standard 5)
- *Disability Student Unit*
  International Day of Disability
  White cane Day for the blind students
- *Female Sports Activities*
  Sports Seasons for female students

Assistant Professor   November 2020- present
- *Teach Computer science courses.*
- *Supervisor for Graduate Project courses.*
- *1ˢᵗ place graduation Project 2022 (Student Service Chatbot-Mujeeb)*

Lecturer   January 2015- November 2020
- *Supervisor for Graduate Project courses.*

Teaching Assistant   August 2013- December 2015

University of Missouri-Kansas City, MO

Graduate Assistant   August 2019- 2020
- Computer Science courses for graduate level course and undergraduate level course

Graduate Teaching Assistant   January 2017- May 2017
- Teaching Introduction to Cryptology.

Saudi Cultural Institute   May 2012- June, 2012

Supervisor and trainer

- Teaching computer courses such as programming using Visual Basic, Microsoft office courses (PowerPoint, Excel, Word) and Logical mathematics.
- Supervise the department activities.

Service

University Services

- Jazan University representative in the Sharqa Educational Expo organized by the Ministry of Education, UAE, 2022.
- Jazan University representative in the Students Scientific Trip to Munich-Germany for Saudi Universities- Girls, 2022.
- Jazan University representative in the Second Forum for Scholarship Programs in Saudi universities,King Abdulaziz University, Jeddah, Saudi Arabia, 17-18/05/2022.
- Member of the Jazan University team in the International Education Fair in Riyadh-Saudi Arabia, 2022.
- Member of 91ˢᵗ National Day council, 2022.
- Supervisor of the Jazan University team for gifted and talented students in Cairo, 2022.
- Supervisor of the Jazan University Scout team serving in Hajj season, 2022.
- Chair of the "Tedx Jazan – first edition" Committee, February 6ᵗʰ 2022.
- Member of "Bachelor in English Language - Jazan University" Program Accreditation, 2022.
- Member of "Bachelor in Epidemiology - Jazan University" Program Accreditation, 2022.
- Member of "Bachelor in Pharmacy - Jazan University" Program Accreditation,2022.
- Member of "Bachelor in Computer & Network Engineering - Jazan University" Program Accreditation, Jazan University, 2021.
- Organize and sponsor the "*International day of Disability*", Kadi Mall, Jazan, 2021.

- Organize an online seminar for " *International Day for the Elimination of Violence Against Women*" , 2021.
- Organize a workshop for female students to raise awareness about the " *International Day for the Elimination of Violence Against Women*" , 2021.
- Launch the 4th Sport Season for girls at Mehilia Campus, October 2021.
- Co-Chair of the program "Preparing new students for a safe return to the Campus for the academic year 2021-2022" .
- Co-chair of " 91st Saudi National Day" committee, September 2021.
- Co-chair of "Twaiq-1000 BootCamp, Jazan University" committee, October -December 2021.
- Member of the Scientific Committee of the Departments' Heads Meeting (Masaar) 2021.
- Launch the 3rd Sport Season for girls at Mehilia Campus, 2021.
- Member of the Scientific Committee of the Second Forum of Students Advising (Manaar 2) 2021.
- Track Chair at the Second Forum of Students Advising (Manaar 2) 2021.
- Member of Computer Science Department Meetings.
- Academic Advisor for undergraduate students.
- Students Affairs Coordinator (Computer Science & Information Technology- Female Campus)
- Head of Multimedia programs (Diploma and Professional Certificates)
- Member in Conference Committee
- Member in Graduation Projects Committee
- Member in Teaching & Learning Committee

Other Services

- Vice President of Saudi Club at the University of Pittsburgh, (2014-2015).

Training Programs and Courses

- Manager of Quality ASQ "*Certified Manager of Quality/ Organizational Excellence*" certification training course, LEORON professional Development Institute, July 11-15, 2021
- Academic Leadership Development Workshop. The workshop provides an "Introduction to Academic Leadership" , it was organized by the Academic Leadership Center and the Saudi Arabian Cultural Mission (SACM) on February 16-17, 2019, Washington, DC, USA.
- IBM Data Science Workshop. This workshop covers the fundamentals of Machine Learning, including the main algorithms, techniques, and evaluation strategies, as well as introducing the pipeline of stages needed to productize a Machine Learning system (3.5 hours).
- Cyber Hacker Certified (CHC) courses (20 hours).
- Introduction to geographic information systems using ARCGIS 9.3, Introduction to the use of map object using visual basic & Maple were held at the King Abdulaziz University (3 weeks/each).
- Internship at Jeddah Municipality (2 months).

Other Professional Development

Seminars & Workshops

- Sustainability workshops (sustainable water and sustainable energy), Thomas Loster, TUM International GmbH, Munich, Germany, August, 2022.
- No Nation Left Behind , Doreen Bogdan-Martin ,HE Eng. Abdullah A. Alswaha ,Khumbudzo Ntshavheni, Cybersecurity forum, Riyadh, Saudi Arabia, 9-11-2022.
- Safe Children in Cyberspace, Amanda Third ,Sanjay Wijesekera ,Natasha Jackson ,Albert Antwi-

Boasiako, Cybersecurity forum, Riyadh, Saudi Arabia, 9-11-2022.

- Leadership of Saudi universities between realism and strategy و, International Conference and Exhibition for Education 2022, Riyadh, Saudi Arabia.
- E-Learning in the Kingdom: An International Vision, International Conference and Exhibition for Education 2022, Riyadh, Saudi Arabia.
- Recent trends in teaching and learning, International Conference and Exhibition for Education 2022, Riyadh, Saudi Arabia
- Data Science and Machine Learning, College of Computer Science and Information Technology, 30/03/2021.
- Creative thinking, Global Entrepreneurship Week, Jazan University, 16-26/11/2020
- Promising technical opportunities to establish university startups -1, Global Entrepreneurship Week, Jazan University, 16-26/11/2020
- Promising technical opportunities to establish university startups -2, Global Entrepreneurship Week, Jazan University, 16-26/11/2020
- Course) Promising technical opportunities to establish university startups, Global Entrepreneurship Week, Jazan University, 16-26/11/2020
- Intellectual property rights as an enabler for the growth and success of university startups, Global Entrepreneurship Week, Jazan University, 16-26/11/2020
- Entrepreneurship and Enterprise Development, Global Entrepreneurship Week, Jazan University, 16-26/11/2020
- Introduction to the International Entrepreneurship License, Global Entrepreneurship Week, Jazan University, 16-26/11/2020
- Startup management and business model, Global Entrepreneurship Week, Jazan University, 16-26/11/2020
- Create your own entrepreneurial project, Global Entrepreneurship Week, Jazan University, 16-26/11/2020
- Facilitating Active Online Learning, by Dr. Daniel H. McInstosh, Associate Professor of Physics and Astronomy at the University of Missouri-Kansas City, April 14, 2020.
- Internationalizing Teaching Landscapes in Higher Education, by Joy Stevenson, Ph.D, Director, International Affair & Senior Internationalization Officer, and Julie Myer, Senior Enrollment Advisor, International Student Affairs Office, February 27, 2020.
- Flipping the Classroom: What will students do in class? By Andy Goodman, University of Missouri System, February 21, 2020.
- Working With and Mentoring Graduate Students, by Dr.Jenifer Lundgren, Dean of School of Graduate Studies, Interim Provost, February 12, 2020.
- Managing Time: A Day in the Life of a Faculty Member, by Laurie Ellinghausen, Professor and Associate Chair, Department of English & Associate Vice Provost for Academic Innovation; and Dr.James Benevides, Teaching Professor at UMKC.
- Enhancing your teaching through Supplemental Instruction, by *Jessica Elam*, Assistant Director of SI and Lead Certified Trainer, Academic Support and Mentoring and the International Center for SI; and *Megan Cross*, an Associate Director, Academic Support and Mentoring and the International Center for SI. January, 2019.
- Navigating Title IX as a Faculty Member: Dos, Don'ts, and What Lies Ahead. February, 2019.
- Teaching through Service-Learning, by Dr. *Alexis Petri*, Associate Research Professor at UMKC department of psychology. September, 2019.
- Finding Balance in Life & Work as A Faculty Member, by Dr. *Carla Noack* an Associate Professor of Theatre in Acting at UMKC. October, 2019.
- The Academic Job Search from an HR Perspective, by *Susan Hankins* and *Lindsey Eaton*, both from UMKC Human Resources. October, 2018.
- Planning Interactive Activities and Selecting Teaching Materials for Online Teaching. September, 2018.
- Navigating Title IX as a Faculty Member: Dos, Don'ts, and What Lies Ahead. February, 2019. Teaching Skills at King Abdulaziz University (2 hours).

- Communication Skills, Planning administrative & Civilized behavior in the work at Jeddah Chamber of Commerce (3 hours/each).

Volunteering

- Total Volunteering Hours (1196), The National Volunteer-Work Platform.
- "*The digital requirements of the labor market in the light of the Kingdom's vision 2030*" talk , Ataa Digital, 2-9-2021.
- 4[th]IEEE International Smart Cities Conference (ISC) 2018.
- IEEE International Conference on Communications (ICC) 2018.
- IEEE Kansas City, 2018 KS Maker Faire where we encouraged everyone to get involved with STEM activities. We displayed a way that educators can get involved in teaching real-world application of basic classroom concepts.
- The Creative Technology Nights at Carnegie Mellon University for Middle School Girls (TechNights). The program offered weekly technology-based workshops that covered a variety of topics from protein folding to web design to astronomy. The goals of the program include offering role models to the girls, engaging the next generation of women in technology and teaching some basic skills.
- The Girls on Tech, Kansas City, MO to help schoolgirls learn about coding as well as raise awareness about computing in the next generation.

Professional Organizations

- IEEE Graduate Student member Aug 2017 - 2020
- Women in Cybersecurity (WiCyS) October 2018 - October 2019
- Phi-Kappa-Phi May 2019 - April 2020