

CURRICULUM VITAE

MUHAMMAD ANAN, PH.D.

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SUMMARY

Academic executive with more than 27 years of combined leadership experience in higher education and the technology industry, currently serving as Dean of the College of Engineering & Advanced Computing at Alfaisal University. Proven record of institution-wide leadership spanning academic strategy, governance, accreditation (NCAAA, ABET), quality assurance, faculty development, funded research leadership, and international partnership building. Board and government-advisory experience — including the Board of Directors of the Centre for the Fourth Industrial Revolution (C4IR) Saudi Arabia— reflects a demonstrated ability to operate at the institutional and national policy level. Complements academic leadership with over a decade of private-sector engineering and technology leadership at Sprint and IBM, bringing a rare combination of academic governance expertise and industry-tested innovation leadership.

CORE COMPETENCIES

- Academic Strategy & Institutional Planning
- Academic Governance & Accreditation (NCAAA, ABET)
- Quality Assurance & Institutional Effectiveness
- Faculty Recruitment, Development & Retention
- Research Strategy, Funded Grants & Knowledge Transfer
- Curriculum & Academic Program Development
- International Partnerships & Global Academic Relations
- Board, President & Government Stakeholder Engagement
- Student Success, Employability & Academic Experience
- Organizational Change Leadership
- Technology Innovation (AI, Cybersecurity, IoT, Smart Cities)
- Executive Communication & Cross-Functional Team Leadership

CAREER HIGHLIGHTS

- 27+ years of combined leadership experience spanning higher-education academic administration and private-sector technology/telecommunications engineering.
- Progressive academic leadership at Alfaisal University from Department Chair to Vice Dean, Acting Dean, and Dean of the College of Engineering & Advanced Computing.
- Led successful national and international accreditation efforts (NCAAA, ABET) and strengthened institutional quality assurance and effectiveness.
- Secured and led externally funded research exceeding SAR 4 Million from the National Cybersecurity Authority, the Ministry of Education, KACST, NSF, and Boeing.
- Board and national-advisory experience: Board of Directors, Centre for the Fourth Industrial Revolution (C4IR) KSA
- Member, University Council and Council of Deans, Alfaisal University — institution-wide governance experience beyond the College level.
- Author of 50+ peer-reviewed publications and 3 book chapters; Senior Member, IEEE; former Associate Editor for two international journals.
- Prior international academic appointments at Purdue University Northwest (USA) and Abu Dhabi University (UAE); over a decade of industry leadership at Sprint and IBM.

EDUCATION

2008 - Ph.D., Electrical Engineering & Telecom Networking - University of Missouri–Kansas City (UMKC), Missouri, USA

2003 - M.S., Computer Science — University of Kansas (KU), Lawrence, Kansas, USA

1999 - M.S., Electrical Engineering — University of Missouri (MU), Columbia, Missouri, USA

1997 - B.S., Computer Engineering — King Fahd University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia

PROFESSIONAL EXPERIENCE — ACADEMIC APPOINTMENTS

Dean, College of Engineering & Advanced Computing | Alfaisal University, Riyadh, Saudi Arabia

January 2025 – Present

Acting Dean, College of Engineering | Alfaisal University, Riyadh, Saudi Arabia

February 2017 – December 2024

Vice Dean of Academic and Student Affairs, College of Engineering | Alfaisal University, Riyadh, Saudi Arabia

August 2015 – January 2017

Chair, Software Engineering Department | Alfaisal University, Riyadh, Saudi Arabia

August 2014 – December 2016

Associate Professor of Software Engineering | Alfaisal University, Riyadh, Saudi Arabia

August 2014 – Present

Associate Professor of Computer Engineering, Electrical & Computer Engineering Department | Purdue University Northwest, Indiana, USA

May 2014 – August 2015

Assistant Professor of Computer Engineering, Electrical & Computer Engineering Department | Purdue University Northwest, Indiana, USA

August 2008 – May 2014

Adjunct Visiting Professor, Master of Engineering Management Program | Abu Dhabi University, United Arab Emirates

December 2010 – December 2014

Graduate Teaching Assistant, Electrical and Computer Engineering Department | University of Missouri–Kansas City, Missouri, USA

August 2006 – December 2007

Graduate Research Assistant, Electrical and Computer Engineering Department | University of Missouri–Columbia, Missouri, USA

August 1997 – December 1998

PROFESSIONAL EXPERIENCE — INDUSTRY APPOINTMENTS

IT Consultant, IT Department, Kansas City Power & Light (KCPL) | Midwest Consulting Group, Overland Park, Kansas, USA

November 2007 – August 2008

Applications Developer, IT Network Services and Service Assurance Group | Sprint Nextel, Lenexa, Kansas, USA

February 2006 – April 2007

IT Specialist, Integrated Service Assurance, Global Services | IBM, Overland Park, Kansas, USA

September 2004 – February 2006

Software Engineer, Broadband Network Management Development and Service Establishment Technology Solutions Groups | Sprint, Overland Park, Kansas, USA

December 1998 – September 2004

System Engineer Intern | Schlumberger–GeoQuest, Saudi Arabia and Oman

July 1996 – September 1996

HONORS, AWARDS & RESEARCH GRANTS

- 2025** Integrating Graph and Language AI Models for Security-Critical Applications — Principal Investigator, Cybersecurity Research and Innovation Pioneers Grants Initiative, National Cybersecurity Authority
- 2023** Internal Research Grant (IRG) — Principal Investigator, Alfaisal University
- 2020–2023** R&D Office, Ministry of Education — Co-Principal Investigator, "A Framework for Generating and Defending Against Adversarial Examples," SAR 1,200,000
- 2019–2021** Optical Tags Alternative to RFID Tags — Principal Investigator, KACST, SAR 1,000,000
- 2018–2019** Designing and Developing Smart Services and Smart Applications for ICT — Principal Investigator, Boeing, SAR 187,500
- 2017** Annual Research Award, Alfaisal University
- 2014–2016** RFID-Based Multimodal Wireless Framework for Crowd Monitoring and Control in Hajj — Co-Principal Investigator, GDRG-KACST, SAR 1,260,000
- 2015–2016** Internal Research Grant (IRG) — Co-Principal Investigator, Alfaisal University, "A Hybrid Web/Standalone Internet of Things Framework with Natural User Interface and Robot-Enabled Immersive Telepresence for Home Automation"
- 2015–2016** Internal Research Grant (IRG) — Principal Investigator, Alfaisal University, "Design Energy Efficient Computing Framework for Cloud Datacenters"
- 2015–2017** NSF-REU — Senior Personnel, "Sustained Wireless Communication in Challenging Environments," \$323,846
- 2014** Summer Faculty Research Grant, Purdue Research Foundation (PRF)
- 2013** International Travel Grant, Purdue Research Foundation (PRF)
- 2012** Outstanding Leadership Award, Purdue University
- 2012** NSF-TCPP Curriculum Initiative Grant on Parallel and Distributed Computing
- 2012** Driver Distraction Mitigation System — Principal Investigator, Industry Project Grant, iQ-Telematic Inc.
- 2011** International Travel Grant, Purdue Research Foundation (PRF)
- 2010** Faculty Summer Research Grant, Purdue Research Foundation (PRF)
- 2009** Faculty Summer Research Grant, Purdue University
- 2009–2015** NSF-GENI Travel Grants
- 2008** Faculty Research Time Release Award, Purdue University
- 2003** Sprint Values Excellence Team Award, Sprint Nextel
- 2003** Sprint Values Excellence Award, Sprint Nextel
- 2002** Sprint Values Excellence Award, Sprint Nextel
- 2001** Sprint Values Excellence Award, Sprint Nextel
- 1999** Electrical Engineering Outstanding Graduate Student Award, University of Missouri–Columbia
- 1997–1999** Graduate Research Assistantship, University of Missouri

PROFESSIONAL MEMBERSHIPS & AFFILIATIONS

- 2011–2016 — Associate Editor, Wiley Journal of Wireless Communications & Mobile Computing
- 2011–2014 — Associate Editor, International Journal of Quality of Service Issues in Networking
- 1999–Present — Senior Member, Institute of Electrical and Electronics Engineers (IEEE)
- 1997–Present — Member, Jordan Engineers Association

SERVICE ACTIVITIES

Service to Organizations & Professional Societies

- 2025–Present — Member, Board of Directors, Centre for the Fourth Industrial Revolution (C4IR), Saudi Arabia
- 2025–Present — Advisory Board Member, College of Computer Engineering and Science, Prince Mohammad Bin Fahd University, Saudi Arabia
- 2013 — Organizer and Chair, Workshop on Collaborative Mobile Systems and Sensor Networks (CMSSN), San Diego, California
- 2013 — Technical Program Committee Member, International Conference on High Performance Computing & Simulation, Helsinki, Finland
- 2013 — Technical Program Committee Member, Workshop on Wireless Sensor, Actuator, and Robot Networks (WiSARN), Cambridge, Massachusetts
- 2012 — Technical Program Committee Member, Workshop on Wireless Sensor, Actuator, and Robot Networks (WiSARN), Las Vegas, Nevada
- 2011–2016 — Associate Editor, Wiley Journal of Wireless Communications & Mobile Computing
- 2011–2014 — Associate Editor, International Journal of Quality of Service Issues in Networking
- 2011 — Publication Co-Chair, International Wireless Communications and Mobile Computing Conference (IWCMC), Istanbul, Turkey
- 2011 — Session Chair, International Wireless Communications and Mobile Computing Conference (IWCMC), Istanbul, Turkey
- 2010 — Technical Program Committee Member, International Congress on Engineering Education (ICEED), Kuala Lumpur, Malaysia
- 2010 — Technical Program Committee Member, International Workshop on Concurrent Communications (ConCom), Seoul, South Korea

Service to Alfaisal University

- 2025 — Chair, Alfaisal Gaming Innovation Conference
- 2025 — Member, Scientific Committee, Space Lead Conference
- 2025 — Co-Chair, AI for Smart City Applications (ASCA 2025) Symposium
- 2017–Present — Member, Council of Deans, Alfaisal University
- 2016–Present — Member, University Council, Alfaisal University
- 2016–2017 — Chair, College of Engineering Curriculum Committee
- 2016–Present — Advisor, Engineering Students Association
- 2015–2017 — Advisor, ClickIT Students Club
- 2015–2016 — Advisor, Robogals Students Club
- 2015–2016 — Chair, Software Engineering Search Committee
- 2014–2015 — Member, College of Engineering Curriculum Committee
- 2014–2016 — Member, Research and Graduate Studies Committee
- 2014–2015 — Member, Students Recruitment Committee
- 2014–2016 — Member, Students Affairs Committee

Service to Purdue University Northwest

- 2013 — Judge, Science Olympiad, Purdue University
- 2012 — Member, Electrical and Computer Engineering Search Committee
- 2012 — Campus Representative, ASEE IL/IN 2012 Conference
- 2010–2014 — Chair, Computer Engineering Program Committee

- 2010 — Session Chair, Faculty/Student Research Day
- 2010 — Member, First-Year Seminar Committee
- 2009 — Judge, Science Olympiad, Purdue University
- 2009 — Member, Computer Education Day Planning Committee
- 2009 — Member, Electrical and Computer Engineering Search Committee
- 2009–2014 — Advisor, Muslim Student Association
- 2008–2014 — Member, Engineering Graduate Program Committee
- 2008–2014 — Member, Engineering Undergraduate Curriculum Committee
- 2008–2014 — Advisor, Graduate Student Association

PEER REVIEW / REFEREEING ACTIVITIES

Regular referee for the following journals and conferences:

- Wiley Journal of Wireless Communications and Mobile Computing (WCMC)
- Journal of Security and Communication Networks (JSAC)
- Journal of Optical Network (JON)
- International Journal of Distributed Sensor Networks
- International Journal of Quality of Service Issues in Networking
- International Journal of Communication Systems
- International Conference on Communications (ICC)
- IEEE Globecom Conference (GLOBECOM)
- IEEE International Conference on Communications and Information Technology
- International Workshop in Concurrent Communication
- IASTED Parallel and Distributed Computing Systems Conference
- IEEE Region 5 Conference
- IEEE International Conference on Mobile Ad-hoc and Sensor Systems

RESEARCH & TEACHING INTERESTS

Computer networks, cloud computing, Internet of Things, software-defined networking, future Internet architectures, wireless sensor networks, embedded systems, computer architecture, software engineering, and visualization.

PUBLICATIONS

1. A. Sawalmeh, A. Alenizi, H. Shakhathreh, M. Anan, "The Impact of Using Intelligent Reflecting Surfaces (IRSs) on Minimizing Operational Costs in UAV Wireless Networks," *IEEE Access*, vol. 13, pp. 171598-171612, 2025. DOI: 10.1109/ACCESS.2025.3616254
2. M. Anan, M. Nazzal, A. Khreishah, I. Khalil, N. Phan, A. Sawalmeh, "STING: A Stealthy Backdoor Attack on GNN-Based Malicious Domain Detection via DNS Perturbations," *IEEE Open Journal of the Communications Society*, vol. 6, pp. 823-841, 2025. DOI: 10.1109/OJCOMS.2025.3610784
3. M. Anan, K. Kanaan, D. Benhaddou, N. Nasser, B. Qolomany, H. Talei, A. Sawalmeh, "Occupant-Aware Energy Consumption Prediction in Smart Buildings Using a LSTM Model and Time Series Data," *Energies*, 17(24), 6451, 2024. DOI: 10.3390/en17246451
4. C. Vizcarra, S. Alhamed, A. Algosaibi, M. Alnaeem, A. Aldalbahi, N. Aljaafari, A. Sawalmeh, M. Nazzal, A. Khreishah, A. Alhumam, M. Anan, "Deep Learning Adversarial Attacks and Defenses on License Plate Recognition System," *Cluster Computing*, Springer, vol. 27, pp. 11627-11644, 2024

5. B. Igried, A. Alsarhan, A. Sawalmeh, M. Anan, and I. Alkhawaldeh, "A Novel Game Theoretic Approach for Market-Driven Dynamic Spectrum Access in Cognitive Radio Networks," *Wireless Networks*, vol. 30, pp. 5771-5786, 2024. DOI: 10.1007/s11276-023-03341-5
6. F. El Aidou, S. Abongmbo, S. Bourhnane, D. Benhaddou, F. Lei, L. Johnsson, C. Gamarra, T. Zhang, M. Anan, M. Abid, "Performance Evaluation of District Energy Microgrids Planning Tool for Non-Technical Users," 2024 IEEE Texas Power and Energy Conference (TPEC), 2024
7. R. Khalil, A. Sawalmeh, M. Anan, T. Jan, S. A. Shah, and S. M. Shah, "Fractional Processing Based Adaptive Beamforming Algorithm," *Computers, Materials & Continua (CMC)*, 76(1), pp. 1065-1084, 2023. DOI: 10.32604/cmc.2023.039826
8. M. Nazzal, N. Aljaafari, A. Sawalmeh, A. Khreishah, M. Anan, A. Algosaibi, M. Alnaeem, A. Aldalbahi, A. Alhumam, C. P. Vizcarra, S. Alhamed, "Genetic Algorithm-Based Dynamic Backdoor Attack on Federated Learning-Based Network Traffic Classification," Eighth International Conference on Fog and Mobile Edge Computing (FMEC), 2023. DOI: 10.1109/FMEC59375.2023.10306137
9. Z. Maqour, H. El Bakkali, D. Benhaddou, H. Benbrahim, W. Abou-Zbiba, H. El Gadi, A. Al-Fuqaha, M. Anan, A. Taha, "An Overview of Funded Research Projects in The MENA Region on Intelligent Transportation Systems," 2023 International Wireless Communications and Mobile Computing (IWCMC), Marrakesh, Morocco, pp. 313-320, 2023
10. N. Aljaafari, M. Nazzal, A. Sawalmeh, A. Khreishah, M. Anan, A. Algosaibi, M. Alnaeem, A. Aldalbahi, A. Alhumam, C. Vizcarra, "Investigating the Factors Impacting Adversarial Attack and Defense Performances in Federated Learning," *IEEE Transactions on Engineering Management*, vol. 71, pp. 12542-12555, 2022. DOI: 10.1109/TEM.2022.3155353
11. Z. Albataineh, K. Hayajneh, H. Shakhathreh, R. Al Athamneh, and M. Anan, "Channel Estimation for Reconfigurable Intelligent Surface-Assisted mmWave Based on Rényi Entropy Function," *Scientific Reports*, vol. 12, article no. 22301, 2022. DOI: 10.1038/s41598-022-26672-3
12. S. Bourhnane, S. Abongmbo, L. Fan, J. Shi, C. Gamarra, M. Riduan Abid, M. Anan, and D. Benhaddou, "A Parallelized Genetic Algorithms Approach to Community Energy Systems Planning," 2022 14th International Conference on Computational Intelligence and Communication Networks (CICN), Al-Khobar, Saudi Arabia, pp. 266-272, 2022. DOI: 10.1109/CICN56167.2022.10008362
13. M. Nazzal, A. Sawalmeh, S. Shao, M. Anan, A. Khreishah and A. Alanazi, "Retro-VLP: Towards Single Light Source-Based Real-Time Indoor Positioning," 2022 13th International Conference on Information and Communication Systems (ICICS), pp. 485-490, 2022
14. I. Alsmadi, N. Aljaafari, M. Nazzal, S. AlHamed, A. Sawalmeh, C. Vizcarra, A. Khreishah, M. Anan, A. Algosaibi, M. Alnaeem, A. Aldalbahi, A. Alhumam, "Adversarial Machine Learning in Text Processing: A Literature Survey," *IEEE Access*, 2022. DOI: 10.1109/ACCESS.2022.3146405
15. H. Shakhathreh, K. Hayajneh, K. Bani-Hani, A. Sawalmeh, and M. Anan, "Cell on Wheels-Unmanned Aerial Vehicle System for Providing Wireless Coverage in Emergency Situations," *Complexity*, no. 8669824, 2021
16. G. Merabet, M. Essaaidi, M. Ben-Haddou, B. Qolomany, J. Qadir, M. Anan, A. Al-Fuqaha, M. Abid, D. Benhaddou, "Intelligent Building Control Systems for Thermal Comfort and Efficient Energy: A Systematic Review of Artificial Intelligence-Assisted Techniques," *Renewable and Sustainable Energy Reviews*, no. 144, 2021
17. S. Abdel-Razeq, H. Shakhathreh, A. Alenezi, A. Sawalmeh, M. Anan, and M. Almutiry, "PSO-Based UAV Deployment and Dynamic Power Allocation for UAV-Enabled Uplink NOMA Network," *Wireless Communications and Mobile Computing*, no. 2722887, 2021
18. K. F. Hayajneh, K. Bani-Hani, H. Shakhathreh, M. Anan, and A. Sawalmeh, "3D Deployment of Unmanned Aerial Vehicle-Base Station Assisting Ground-Base Station," *Wireless Communications and Mobile Computing*, vol. 2021, 2021
19. G. Liu, I. Khalil, A. Khreishah, A. Algosaibi, A. Aldalbahi, M. Alaneem, A. Alhumam, and M. Anan, "ManiGen: A Manifold Aided Black-Box Generator of Adversarial Examples," *IEEE Access*, vol. 8, pp. 197086-197096, 2020. DOI: 10.1109/ACCESS.2020.3029270
20. D. Benhaddou, F. Attia, M. Anan, L. Afugbuom, "Autonomous Living Building: Adapting to Occupant's Behavior," *IEEE International Wireless Communications and Mobile Computing Conference (IWCMC)*, Morocco, pp. 1803-1808, 2019

21. N. Nasser, A. El Ouadrhiri, M. El Kamili, A. Ali, M. Anan, "Crowd Management Services in Hajj: A Mean-Field Game Theory Approach," IEEE Wireless Communications and Networking Conference (WCNC), Morocco, 2019
22. O. Darwish, A. Alfquaha, G. Ben Brahim, I. Jenhani, M. Anan, "Towards a Streaming Approach to the Mitigation of Covert Timing Channels," IEEE International Wireless Communications and Mobile Computing Conference (IWCMC), Cyprus, 2018
23. N. Nasser, L. Karim, A. Ali, M. Anan, N. Khelifi, "Routing in the Internet of Things," IEEE GLOBECOM, Singapore, 2017
24. N. Nasser, M. Anan, M. Chikh Awad, H. Bin-Abbas, L. Karim, "An Expert Crowd Monitoring and Management Framework for Hajj," International Conference on Wireless Networks and Mobile Communications (WinCom), Rabat, Morocco, 2017
25. M. Anan, A. Al-Fuqaha, N. Nasser, T. Mu, and H. Bustam, "Empowering Networking Research and Experimentation through Software Defined Networking," Journal of Network and Computer Applications, vol. 70, pp. 140-155, 2016
26. A. Ahmad, N. Nasser and M. Anan, "A Secure Cloud Infrastructure through Power Consumption Statistics," International Conference on Selected Topics in Mobile and Wireless Networking (MoWNet), Cairo, Egypt, 2016
27. M. Anan, A. Ahmed, A. Alfquaha, and N. Nasser, "Optimization of Power and Migration Cost in Virtualized Data Centers," IEEE Wireless Communications and Networking Conference (WCNC), Doha, Qatar, 2016
28. M. Anan, and N. Nasser, "SLA-Based Optimization of Energy Efficiency for Green Cloud Computing," IEEE GLOBECOM, San Diego, California, USA, 2015
29. O. Darwish, A. Al-Fuqaha, M. Anan, N. Nasser, "The Role of Hierarchical Entropy Analysis in the Detection and Time-Scale Determination of Covert Timing Channels," IEEE International Wireless Communications and Mobile Computing Conference (IWCMC), pp. 153-159, Dubrovnik, Croatia, 2015
30. M. Guizani, M. Anan, "Smart Grid Opportunities and Challenges of Integrating Renewable Sources: A Survey," IEEE International Wireless Communications and Mobile Computing Conference (IWCMC), pp. 63-68, Nicosia, Cyprus, 2014
31. L. Ilyes, M. Anan, A. Alfquaha, and M. Ayyash, "Cloud-Based Autonomic Service Monitoring in the Future Internet," IEEE International Wireless Communications and Mobile Computing Conference (IWCMC), pp. 1098-1105, Nicosia, Cyprus, 2014
32. M. Elbes, A. Alfquaha, and M. Anan, "A Precise Indoor Localization Approach Based on Particle Filter and Dynamic Exclusion Techniques," International Journal of Network Protocols and Algorithms, vol. 5, no. 2, pp. 50-71, 2013
33. M. Abdelhadi, M. Anan, and M. Ayyash, "Efficient Artificial Intelligence-Based Localization Algorithm for Wireless Sensor Networks," Journal of Selected Areas in Telecommunications, vol. 3, no. 5, pp. 10-18, 2013
34. M. Abdelhadi, and M. Anan, "A Three-Dimensional Localization Algorithm for Wireless Sensor Networks Using Artificial Neural Networks," International Workshop on Wireless Sensors, Actuator, and Robot Networks (WiSARN), pp. 1-5, Las Vegas, 2012
35. M. Abdelhadi, and M. Anan, "A Fuzzy-Based Collaborative Localization Algorithm for Wireless Sensor Networks," International Conference on Collaboration Technologies and Systems (CTS), pp. 152-156, Denver, 2012
36. M. Anan, C. Velazquez, D. Benhaddou, and M. Balakrishnan, "Energy Efficient Data Dissemination in Wireless Sensor Networks Based on Natural Selection," IEEE International Wireless Communications and Mobile Computing Conference (IWCMC), pp. 577-582, Istanbul, Turkey, 2011
37. M. Salahuddin, A. Alfquaha, and M. Anan, "An Efficient Artificial Landmark-Based System for Indoor and Outdoor Identification and Localization," Invited Paper, IEEE International Wireless Communications and Mobile Computing Conference (IWCMC), pp. 583-588, Istanbul, Turkey, 2011
38. Y. Wang, Y. Qin, L. Gao, and M. Anan, "Implementing an OpenFlow Switch with QoS Feature on the NetFPGA Platform," 2011 NC-IL/IN ASEE, Mt. Pleasant, Michigan, 2011
39. L. Jin, C. Liu, and M. Anan, "Open-Source VLSI CAD Tools: A Comparative Study," 2010 IL/IN ASEE, West Lafayette, Indiana, 2010
40. M. Alzubi, and M. Anan, "User Zoning Handover: An Approach for 4G Mobility," International Wireless Communications and Mobile Computing Conference (IWCMC), pp. 870-874, Caen, France, 2010

41. M. Alzubi, and M. Anan, "An Efficient Handover Technique for 4G Networks," Next Generation Mobile Applications, Service and Technologies Conference (NGMAST), pp. 79-83, Amman, Jordan, 2010
42. M. Anan, H. Saiedian, and J. Ryoo, "An Architecture-Centric Software Maintainability Assessment Using Information Theory," Journal of Software Maintenance and Evolution: Research and Practice, vol. 21, no. 1, pp. 1-18, 2009
43. M. Anan and G. Chaudhry, "SWAP: A Slotted Wavelength Assignment Pipeline Scheduler for Next Generation Optical Switches," Journal of Optical Communications, vol. 28, no. 2, pp. 103-111, 2007
44. M. Anan, and G. Chaudhry, "A Real-Time Hardware-Based Scheduler for Next-Generation Optical Burst Switches," International Conference on Communications (ICC), pp. 2289-2293, Glasgow, UK, 2007
45. M. Anan, G. Chaudhry, and J. Qaddour, "Performance Evaluation of an Ultra-Fast Pipeline Scheduler for Next-Generation Networks," International Conference on Computer Systems and Applications (AICCSA), pp. 650-654, Amman, Jordan, 2007
46. M. Anan, G. Chaudhry, and D. Benhaddou, "Architecture and Performance of a Next-Generation Optical Burst Switch (OBS)," International Workshop on Optical Burst/Package Switching (WOBS), San Jose, California, 2006
47. M. Anan, G. Chaudhry, and D. Benhaddou, "Promises and Challenges of Optical Burst Switching (OBS) for Next-Generation Optical Networks," 7th International Workshop on Optical Networking Technologies (in conjunction with IEEE GLOBECOM), San Francisco, California, 2006
48. H. Saiedian, P. Kumarakulasingam and M. Anan, "Scenario-Based Requirements Analysis Techniques for Real-Time Software Systems: A Comparative Evaluation," Journal of Requirements Engineering, vol. 10, no. 1, pp. 22-33, 2005
49. M. Anan and M. Guizani, "Fault-Tolerant ATM Switching Architectures Based on MINs: A Survey," Journal of Informatica, vol. 25, no. 1, pp. 69-81, 2001
50. M. Anan, and M. Guizani, "Modeling and Simulation of a New ATM Switching Architecture," Advanced Simulation Technologies Conference (ASTC), pp. 42-47, Washington, DC, 2000
51. M. Anan, and M. Guizani, "A Fault-Tolerant ATM Switching Architecture," 19th IEEE International Performance, Computing and Communications Conference (IPCCC), pp. 295-301, Phoenix, Arizona, 2000

BOOK CONTRIBUTIONS

1. "Smart Grid Opportunities and Challenges in Integrating Renewable Sources," in Renewable Energy Technologies for Water Desalination, edited by H. Mahmoudi, N. Ghaffour, M. Goosen and J. Bundschuh, CRC Press (Taylor & Francis Group / Balkema), 2017
2. "Introduction to Mobile Ad-Hoc and Vehicular Networks," in Wireless Sensor and Mobile Ad-Hoc Networks, edited by D. Benhaddou and A. Alfquaha, Springer, 2015
3. "Fault Tolerant ATM Switching Architectures," in Designing ATM Switching Networks, edited by Mohsen Guizani and Ammar Rayes, McGraw Hill, 1998

PATENT

- System and Method for Localization Using Optical Tags (pending)

CERTIFICATIONS

- 2020 — IBM Business Analysis Mastery
- 2011 — Digital Learning and Distance Education Certificate, Purdue University

COURSES TAUGHT

- **Alfaisal University:** Mobile Application Development; Digital Logic Design; Embedded Systems; Computer Networking; Computer Architecture; Software Architecture; Cloud Computing for Software Engineers; Artificial Intelligence; Capstone Projects; Introduction to Engineering Innovation.
- **Purdue University Northwest:** Digital Logic Using VHDL; Microcomputers in Engineering; Software Tools for Engineers Using MATLAB; Elementary Engineering Design; Computer Architecture and Organization; Digital Integrated Circuits; VLSI Design; Computer Networks; Client Server Programming and Applications; Network Programming; Software Engineering; Senior Engineering Design.
- **University of Missouri-Kansas City:** HDL-Based Digital Systems Design and Modeling; Microcomputer Architecture and Interfacing.
- **Abu Dhabi University:** Information Technology Management.

TECHNICAL PRESENTATIONS & TALKS

Presented all published papers at the corresponding conferences and workshops, and delivered invited technical presentations to universities and technology companies, including:

1. D. Benhaddou, S. Guizani, H. El Bakkali, M. Anan, A. Alfquaha, "Future of Intelligent Transportation Systems (FITS)" Workshop, IWCMC 2023 Conference, Marrakesh, Morocco, 2023
2. M. Anan, and A. Alfquaha, "Empowering Future Internet Research and Experimentation through Software Defined Networking," Conference Tutorial, IEEE GLOBECOM, 2015
3. M. Anan, and A. Alfquaha, "The Internet of Things (IoT): Applications and Prospects," Conference Tutorial, IEEE International Wireless Communications and Mobile Computing Conference (IWCMC), 2015
4. M. Anan, and A. Alfquaha, "Empowering Future Internet Research and Experimentation through Software Defined Networking," Conference Tutorial, IEEE International Wireless Communications and Mobile Computing Conference (IWCMC), 2014
5. M. Anan, "Service-Based Internet Infrastructure for the Qatar World Cup 2022," Qatar Foundation Annual Research Conference (ARC), Qatar, 2013
6. M. Anan, "Cloud-Based Autonomic Video Streaming in GENI Networks," Invited Speaker, Experimenter Roundtable Session, 16th GENI Engineering Conference, Salt Lake City, 2013
7. M. Anan, "Empowering Future Internet Research and Experimentation through Active and Programmable Networks," Invited Speaker, Alfaisal University, Saudi Arabia, 2012
8. M. Anan, "Implementation of an OpenFlow Switch Using NetFPGA Platform," Research Day, Purdue University Northwest, 2011 (3rd Place, Best Paper Award)
9. M. Anan, "User Zoning Handover: An Approach for 4G Mobility," Research Day, Purdue University Northwest, 2010
10. M. Anan, "Dynamic CDMA Ad-Hoc Network with Token Ring Topology for Vehicular Communication," Research Day, Purdue University Northwest, 2010
11. M. Anan, "A Real-Time Hardware-Based Scheduler for Next-Generation Metro Optical Networks," Research Day, Purdue University Northwest, 2009
12. M. Anan, "Optical Burst Switching Model Using OPNET," Research Day, Purdue University Northwest, 2009
13. M. Anan, "Performance Evaluation of Multimedia Protocols over Gigabit Ethernet Based Campus Network," Research Day, Purdue University Northwest, 2009
14. M. Anan, "Computer Engineering Career," Futurama 2009 Conference, Lowell High School, Indiana, 2009
15. M. Anan, "Engineering at Purdue University Northwest," Academic Learning College Conference, IVY Tech, Valparaiso, Indiana, 2008