Ahmad Gazi Alzu'bi

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Biography

Ahmad Alzu'bi received his Ph.D. in Computer Science in 2016 from University of the West of Scotland (UWS), Paisley, United Kingdom, and the MSc in Computer Science in 2009 from Jordan University of Science and Technology, Jordan. He is currently an associate professor in the department of computer science at Jordan University of Science and Technology, Jordan. He is also acting as an assistant dean of students' affairs. He has many research publications in reputed journals and conferences of Elsevier, IEEE, Springer, and ACM. He is also a member of several professional and scientific organizations, committees, and councils. His research interests include computer vision, deep learning, image retrieval, and medical imaging. Much of his work has been on improving the understanding, design, and performance of deep learning-based systems in the field of computer vision, mainly through the application of semantic image processing and retrieval, image classification, and medical imaging. He has also investigated the performance of compact deep features and semantic segmentation in several vision applications. In addition, Alzu'bi has contributed to establishing new academic curriculums in computing and artificial intelligence, and organizing professional conferences, workshops, and lectures. He has participated in various duties including teaching, supervision, administration, research, and community service.

Education

PhD in *Computer Science* (2016)
   - **University**: University of the West of Scotland, Glasgow, United Kingdom (UK)
   - Specialization: Deep Learning and Computer Vision
   - Thesis: "Semantic Content-Based Image Retrieval Using Compact Multifeature and Deep Learning"

Master (MSc) in *Computer Science* (2009)
   - **University**: Jordan University of Science and Technology (JUST), Jordan
   - Thesis: "A Quantitative Assessment of the Lack of Correspondence Between Design and Implementation Attributes Using Object-Oriented Metrics"

Bachelor (BSc) in *Computer Science* (2005)
   - **University**: The Hashemite University, Jordan

Experience

- **Assistant Dean,**
  Sep 2022 - present
  Deanship of Student Affairs, Jordan University of Science and Technology, Irbid, Jordan.

- **Full-time Associate Professor,**
  Nov 2022 - present
  Department of Computer Science, Jordan University of Science and Technology, Irbid, Jordan.

- **Full-time Assistant Professor,**
  Sep 2020 – Nov 2022
  Department of Computer Science, Jordan University of Science and Technology, Irbid, Jordan.

- **Head of Computer Science Department,**
  Sep 2018 – Aug 2020
  Faculty of Information Technology, Middle East University (MEU), Amman, Jordan.

- **Full-time Assistant Professor,**
  Sep 2017- 2020
  Department of Computer Science, Faculty of Information Technology,
  Middle East University (MEU), Amman, Jordan.

- **Part-time Lecturer, PhD**
  Sep 2019 – Jun 2020
  School of Computer Science & Technology
  University of Bedfordshire, UK, Jordan Campus, Amman.

- **Part-time Lecturer, PhD**
  Jan 2017 – Aug 2017
  Department of Computer Science, Faculty of Computer & Information Technology,
  Jordan University of Science and Technology, Irbid, Jordan.

- **TA/Demonstrator and Senior Invigilator,**
  Dec 2014 – Dec 2016
  School of Engineering and Computing - UWS University, Glasgow, United Kingdom

- **Full-time Lecturer**
  Sep 2010 – Aug 2014
  Faculty of Information Technology, King Abdulaziz University, Jeddah, Saudi Arabia.

- **Full-time Lecturer**
  Feb – July 2010
  Faculty of Information Technology, Imam Mohammad Bin Saud University, Riyadh

- **Full-time IT Trainer and Supervisor**
  Feb 2006 – Jan 2010
  National Information Technology Center (NITC), Amman, Jordan.

- **Teaching Assistant**
  Department of Computer Science, JUST University, Irbid, Jordan.
  During the Master Study

- **IT / Oracle JDeveloper Trainer**
  May 2005 – January 2006
  Oriented Technology for Training & Consultancy (OTECH), Amman, Jordan.

Research Interests

Deep Learning, Computer Vision, Image Retrieval, Medical Imaging, and Healthcare Technologies

Publications

Journal Papers

- **Alzu'bi A.**, Bani Younis L., Abuarqoub A., and Hammoudeh M. "Multimodal Deep Learning with Discriminant Descriptors for Offensive Memes Detection," J. Data and Information Quality, Accepted (2023).

- **Alzu'bi A.**, A. Alomar, S. Alkhaza'leh, A. Abuarqoub, and M. Hammoudeh, "A Review of Privacy and Security of Edge Computing in Smart Healthcare Systems Issues, Challenges, and Research Directions," Tsinghua Science and Technology, Accepted (2023).

- **Alzu'bi A.**, L.B. Younis, and A. Madain, "An Interactive Attribute Preserving Fashion Recommendation with 3 D Image Based Virtual Try On," International Journal of Multimedia Information Retrieval, Accepted (2023).

- **Alzu'bi A.**, Alsmadi L, "*Monitoring deforestation in Jordan using deep semantic segmentation with satellite imagery*," Ecological Informatics, vol 70, pp. 101745, (2022). [IF 5.1 & Q1 Scopus]

- Albalas F., **Alzu'bi A.**, Alguzo A., Al-Hadhrami T., Othman A., "*Learning Discriminant Spatial Features with Deep Graph-Based Convolutions for Occluded Face Detection*," IEEE Access, vol 10, pp. 35162-35171, (2022). [IF 3.9 & Q1 Scopus]

- **Alzu'bi A.**, Barham M., "Automatic *BIRCH thresholding with features transformation for hierarchical breast cancer clustering*," International Journal of Electrical and Computer Engineering, vol 12, no 2, pp. 1498-1507, (2022). [Q2 Scopus]

- **Alzu'bi, A.**, Albalas, F., AL-Hadhrami, T., Younis, L.B., Bashayreh, A. "*Masked Face Recognition Using Deep Learning: A Review*," Electronics, vol *10*, no 21, pp. 2666, (2021). [IF 2.9 & Q2 Scopus]

- Taha, D., **Alzu'bi, A.**, Abuarqoub, A. *et al.* "*Automated Colorectal Polyp Classification Using Deep Neural Networks with Colonoscopy Images*," International Journal of Fuzzy Systems, vol 24, pp. 2525–2537, (2021). [IF 4.3 & Q1 Scopus]

- M. Muthanna, P. Wang, M. Wei, A. Abuarqoub, **A. Alzu'bi**, H. Gull. "*Cognitive Control Models of Multiple Access IoT Networks using LoRa Technology*," Cognitive Systems Research, vol 65, pp. 62-73, (2021). [IF 4.54 & Q1 Scopus]

- **A. Alzu'bi,** A. Abuarqoub. "*Deep learning model with low-dimensional random projection for large-scale image search*," Engineering Science and Technology, an International Journal, 23 (4), pp. 911-920, (2020). [IF 5.7 & Q1 Scopus]

- **A. Alzu'bi,** A. Amira, "*Learning Transfer Using Deep Convolutional Features for Remote Sensing Image Retrieval*," International Journal of Computer Science, 46(4), (2019). [Q2 Scopus]

- **A. Alzu'bi**, A. Amira, N. Ramzan, "*Content-based Image Retrieval with Compact Deep Convolutional Features,*" Neurocomputing, Vol 249: pp. 95-105, (2017). [IF 6.0 & Q1 Scopus]

- **A. Alzu'bi**, A. Amira, N. Ramzan, T. Jaber "Improving *Content-based Image Retrieval System with Compact Global and Local Multi-features*," International Journal of Multimedia Information Retrieval, Springer, 5(4), pp. 237-253, (2016). [IF 5.6 & Q1 Scopus]

- **A. Alzu'bi**, A. Amira, N. Ramzan, T. Jaber, "*Combining HSV Color and rootSIFT for Image Retrieval*," In VQEG eLetter, 2(1), pp. 36-39, (2016).

- **A. Alzu'bi**, A. Amira, N. Ramzan, "*Semantic Content-based Image Retrieval: A Comprehensive Study,*" Journal of Visual Communication and Image Representation, Vol 32, Elsevier, pp. 20-54, (2015).
  [IF 2.88 & Q1 Scopus]
- R. Shatnawi and **A. Alzu'bi**, "*A Verification of the Correspondence between Design and Implementation Quality Attributes Using a Hierarchal Quality Model*," IAENG International Journal of Computer Science, 38(3), pp. 225-233, (2011). [Q2 Scopus]

Conference Papers

- Abuarqoub A., **Alzu'bi A.,** Hammoudeh M., Ahmad A., and Al-Shargabi B. "*A Survey on Vehicular Ad hoc Networks Security Attacks and Countermeasures,"* In Proceedings of the 6th International Conference on Future Networks & Distributed Systems (ICFNDS '22), ACM, (2022).

- **A. Alzu'bi**, J. Khrais, N. Ennab, A. Abuarqoub, " *The Impact of Feature Quality on SDN Traffic Learning and Classification*," The 3rd International Conference on Distributed Sensing and Intelligent Systems (ICDSIS2022), pp. 192-197. IET, (2022)

- A. Abuarqoub, S. Abuarqoub, **A. Alzu'bi**, A. Muthanna, "*The Impact of Quantum Computing on Security in Emerging Technologies*," The 5th ACM International Conference on Future Networks & Distributed Systems, pp. 171-176, (2021).

- A. Alguzo, **A. Alzu'bi,** and F. Albalas, "*Masked Face Detection using Multi-Graph Convolutional Networks*," 2021 12th IEEE International Conference on Information and Communication Systems (ICICS), pp. 385-391, (2021).

- L. B. Younis, S. Sweda, and **A. Alzu'bi**, "*Forensics Analysis of Private Web Browsing Using Android Memory Acquisition*," 2021 12th IEEE International Conference on Information and Communication Systems (ICICS), pp. 273-278, (2021).

- A. Bashayreh, N. Alsalman, and **A. Alzu'bi**, "*Alive+: A Private Cloud Messaging System for Android Devices*," 2021 12th IEEE International Conference on Information and Communication Systems (ICICS), pp. 445-451, (2021).

- **A. Alzu'bi**, A. Abuarqoub, A. Al-Hmouz, "*Aggregated Deep Convolutional Neural Networks for Multi-View 3D Object Retrieval,*" In the proceeding of the 11th International Congress on Ultra-Modern Telecommunications and Control Systems ICUMT 2019, Dublin, Ireland, pp. 1-5, (2019). [BEST PAPER AWARD]

- **A. Alzu'bi**, A. Amira, N. Ramzan, "*Compact Root Bilinear CNNs for Content-Based Image Retrieval*," In the proceeding of IEEE International Conference on Image, Vision, and Computing, ICIVC London, pp. 41-45. (2016).

- **A. Alzu'bi**, A. Amira, N. Ramzan, T. Jaber, "*Robust Fusion of Color and Local Features for Image Retrieval and Classification*," The 22nd IEEE International Conference on Systems, Signals, and Image Processing (IWSSIP), London, pp.253-256. (2015).

- **A. Alzu'bi**, T. Jaber, A. Amira, "*The Effectiveness of LSI-based CBIR with Image Noise using Wavelet-based Texture*", The 4th IEEE International Conference on Image Processing Theory, Tools and Applications, Paris, pp. 1-4. (2014)

- R. Shatnawi, **A. Alzu'bi**, "*An Empirical Verification of Software Artifacts Using Software Metrics,*" International multiconference of engineers and scientists, Vol1. (2011).

Teaching

1. Teaching at University Level
- Neural Networks (Master)
- Advanced Operating Systems (Master)
- Machine Learning in Python
- Introduction to Computer Vision
- Python Programming
- Artificial Intelligence
- Wireless Networks
- Operating Systems
- Data Structures & Algorithms
- Discrete Mathematics
- Project Management
- System Analysis & Design
- Object-Oriented Programming (C++)
- Introduction to Programming (C++)
- Selected Programming Languages (VB)

University of Bedfordshire, UK, Jordan Campus
(Part-time courses):
- Computer Systems Structure
  (2nd Term 2019/2020)

- Introduction to Software Development
  (1st Term 2019/2020)

Laboratory teaching: Linux, MATLAB, C/C++/Java, UML modelling, data structures, etc.

2. Training Level

- Designing Courses on E-learning Management system
- Oracle JDeveloper
- SQL Database
- Computer Maintenance
- ICDL & Cambridge Diploma in IT
- Expert Microsoft Office

Supervision of Postgraduate Students (Master Thesis)

Thesis Title	University	Year
Classification of Ulcerative Colitis Images Using Federated Deep Learning and Clustering Based Data Aggregation	Jordan University of Science & Technology	2022/2023 *ongoing*
Diffusing High Fidelity Images to Perfection: A Lightweight Deep Generative Model.	Jordan University of Science & Technology	2022/2023 *ongoing*
Adaptive Optimization of Federated Deep Learning for Crohn's Disease Diagnosis with Endoscopic Images.	Jordan University of Science & Technology	2022/2023 *ongoing*
Cyberattack Event Logs Classification using Deep Learning and Feature Analysis	Jordan University of Science & Technology	2022/2023
A Personalized Fashion Recommendation System with 3D Virtual Try-Ons Using Deep Learning	Jordan University of Science & Technology	2022/2021
Early Detection of Autistic Children by Learning Facial Image Morphological Features	Jordan University of Science & Technology	2022/2021
Masked Face Detection using Multi-Graph Convolutional Networks	Jordan University of Science & Technology	2021/2020
Monitoring Deforestation in Jordan Using Semantic Segmentation and Deep Learning	Jordan University of Science & Technology	2021/2020
DeepCPC: Deep Learning Model for Colorectal Polyps Classification	Middle East University	2020/2019
An Improved BIRCH Algorithm for Breast Cancer Clustering	Middle East University	2020/2019

Supervision of Undergraduate Students (Graduation Projects)

Graduation Project Title	University	Acad. Year
JUSTech: Problem Solving RoadMap	Jordan University of Science & Technology	2021/2022
VMH: Virtual Mental Healthcare	Jordan University of Science & Technology	2021/2022
Covid-19 Jordan HealthMap	Jordan University of Science & Technology	2020/2021
Covid-19 Home Monitoring System	Jordan University of Science & Technology	2020/2021
Online Education for Schools	Jordan University of Science & Technology	2020/2021
FreeLancers Agency	Middle East University	2019/2020
MEU Library System	Middle East University	2019/2020
MEU Room Booking	Middle East University	2018/2019
Food E-Restaurant	Middle East University	2017/2018

Funded Projects

Project Title	University	Period	Start	End
Masked Face Detection and Recognition for Secure Authentication Using Deep Convolutional Features	JUST	15 months	03-May-2021	29-Jul-2022

Membership of Academic Committees

- A committee member of **Scientific Research**, JUST University, 2022-now.

- A committee member of **Establishing a new AI program**, JUST University, 2022-now.

- A committee member of **ABET Accreditation**, JUST University, 2021-now.

- A committee member of **Academic Curriculums & Accreditation**, JUST University, 2020-now.

- A committee chair of **Graduation Projects**, JUST University, 2020-2022.

- A member of **ICICS Conference** organizing committee, JUST University, 2020/2021.

- A member of the university council at **Middle East University (MEU)**, 2018/2019.

- A member of IT **college's council**, MEU University, 2018-2020.

- A committee chair of **E-learning** committee (University Level), MEU University, 2017-2018.

- A committee chair of **Community Service & External Relations**, MEU University.

- A member of **MEU board** of new students' registration/advising (University Level), 2018.

- A member of **advising committee for Bedfordshire University's Programs**, 2019.

- A committee member of **Practical Training**, Faculty of IT, MEU University.

- A committee member of **ABET**, Faculty of IT, MEU University.

- A committee member of **Laboratory Safety**, Faculty of IT, MEU University.

- A committee member of **Quality Assurance**, Faculty of IT, MEU University.

- A committee member of **Research & Graduate Studies**, Faculty of IT, MEU University.

- A committee member of **Course Syllabuses**, Faculty of IT, MEU University.

- A committee member of establishing **AI department**, Faculty of IT, MEU University.

- A committee member of **graduation projects & examinations**, Faculty of IT, MEU University.

- A committee member of **Students Advising**, Faculty of IT, MEU University.

- A committee member of **Students Activities**, King Abdulaziz University, Jeddah, Saudi Arabia.

- Editor of **college booklet**, college of IT) / King Abdulaziz University, Jeddah, KSA, 2011-2014.

- Editor of **E-newsletter,** college of IT, King Abdulaziz University, Jeddah, KSA, 2011-2014.

Active International Memberships

- IEEE member.
- ACM member.
- ACM SIGAI.
- IEEE Computer Society Technical Committee on Pattern Analysis and Machine Intelligence.
- IEEE Test Technology Technical Council.
- IEEE Computer Society
- IAENG International Association of Engineers.

Received Awards

- The best paper award in the 11th International Congress on Ultra-Modern Telecommunications and Control Systems ICUMT 2019, Dublin, Ireland.
- The best poster presentation, annual UWS research conference, Paisley, UK April 2016.
- The top 3 research posters in SICSA computing conference, Glasgow, UK, 2016.
- Certificate of merit for the research paper "An Empirical Verification of Software Artifacts Using Software Metrics", 2011.
- Awarded the best IT trainer and training center among all national information technology center (NITC), Jordan, 2007; and
- Several thank/appreciation letters.

Conferences Membership and Reviews

- Track chair of (AI and Machine Learning): The 12th International Conference on Information and Communication Systems (ICICS 2021), May 24-26, 2021, Valencia, Spain.
- TPC member, the 18th International Conference on Mobile Systems and Pervasive Computing (MobiSPC-2021), Leuven, Belgium, August 9-12, 2021
- Reviewer, The 6th International Conference of Reliable Information and Communication Technology (IRICT 2021), December 22-23, 2021.
- Reviewer, the International Congress of Advanced Technology and Engineering (ICOTEN 2021), Virtual, July 4-5, 2021.
- TPC member, the ACM International Conference ICFNDS 1-2 July 2019, Paris, France.
- TPC member, the ACM International Conference on Future Networks and Distributed Systems, 26-28 June 2018, MEU, Jordan.
- TPC member, the International Conference on Internet of Things and Machine Learning (IML), October 2017, Liverpool, UK.
- TPC member, the International Conference of Reliable Information and Communication Technology (IRICT), 23-24 April 2017, UTM Malaysia.
- TPC member, the 13th International Workshop on Content-Based Multimedia Indexing (CBMI) June 10-12, 2015, Prague, Czech Republic.
- TPC member, the 26th International Conference on Microelectronics (ICM), Dec 2014, Qatar.

Conferences Organizing Committee

Conference	Role	Date and Venue
ACM International Conference on Future Networks and Distributed Systems (ICFNDS'18)	- Program chair	15-16, Dec 2022, Tashkent, Uzbekistan
12th International Conference on Information and Communication Systems (ICICS 2021)	- Organization Committee member - Track chair (AI & Machine Learning. - AI session chair & TPC member.	May 24-26, 2021, Valencia, Spain
ACM International Conference on Future Networks and Distributed Systems (ICFNDS'18)	- Session chair - TPC member	June 26-28, 2018, Amman, Jordan
5th Microsoft Students Conference (Conference theme: Machine Learning)	- Organization Committee member	MEU university, Jordan, Dec 2018

Attended Conferences/Seminars/Workshops/Webinars

- **Note Speaker**, talk title- AI: Challenges & Opportunities, a conference on Shaping Education and Information Technology, Dubai, UAE, 3-4 July 2020 (Virtual).
- The 13th **International Conference** on Information and Communication Systems (ICICS 2022), June 21-23, 2022, Irbid, Jordan.
- CAC 2021-22 Institutional Representative **Webinar** (ABET IR), online, 18 Aug 2021.
- The 12th International **Conference** on Information and Communication Systems (ICICS 2021), May 24-26, 2021, Valencia, Spain.
- **Webinar**: "Linking Tertiary Education to the Labor Market", organized by the U.S.-Jordanian University Cooperation Network (UCN), 17 Nov 2020.
- **Workshop**: "Writing a Competitive Research Grant Proposal", MEU University, Amman, Jordan, 1 Mar 2020.
- **Technical Workshop**: "Hands-on Artificial Intelligence: Microcontrollers, Robotics, and Internet of Things", MEU University, Jordan, 26-27 Jan 2020.
- The 11th **International Congress** on Ultra-Modern Telecommunications and Control Systems (ICUMT 2019), Oct 28–30, 2019, Dublin, Ireland
- **Workshop**: "Artificial Intelligence Policies in Jordan", organized by the Jordanian Government and Microsoft, Saint Reges, Amman, Jordan, 9 Oct 2019.
- **Artificial Intelligence Day** at the University of Jordan, organized by the IEEE-Jordan section, Amman, Jordan, 3 Aug 2019.
- **Workshop**: "Needs of Transferring Technology and Entrepreneurship in Jordan", Al Hussein Technical University (HTU), Amman, Jordan, 8 June 2019.
- **Workshop**: "Erasmus+ CBME Projects", MEU University, Amman, Jordan, 24 Nov 2019.
- "Cybersecurity Technical Workshop", MEU University, Amman, Jordan, 9 Feb 2019.
- **AI Workshop**: "Meta-heuristic Agents and Learning Swarm", MEU University, Jordan, 2019.
- "Machine Learning Workshop", 5th **Microsoft conference**, Middle East University, Amman, Jordan, Dec 2018.
- **Technical Workshop**: "Game Development: Hand-on Experience", National Textile University (Pakistan) and MEU university (Jordan), 30 June 2018.
- The 2nd **ACM International Conference** on Future Networks and Distributed Systems, 26-28 June 2018, MEU uni., Amman, Jordan.
- **IEEE International Conference** on Image, Vision, and Computing ICIVC London, Aug 2016.
- The 22nd **IEEE International Conference** on Systems, Signals, and Image Processing (IWSSIP), London, 2015.
- **SICSA computing conference**, Glasgow, UK, May 2016.

- The annual UWS University's **research conference**, Paisley, UK, April 2016.
- ARCHIE-WeSt **Workshop**, HPC platform based on Strathclyde uni., Glasgow, Jan 2016.
- **Google workshop** on Deep Learning & AI projects, Strathclyde uni., Glasgow, May 2016.
- **Annual meeting** of VQEG Group, University of the West of Scotland, Paisley, UK, 14-18 Sep 2015.
- and more local lectures and events …

International Certificates and Training Courses

Certificate	Organization
Hands-on Artificial Intelligence: Microcontrollers, Robotics, and Internet of Things	MEU University, Jordan
MCP: C#, ASP.NET, and ADO.NET	NITC, Jordan
Windows Server and Active Directory	NITC, Jordan
Cambridge International Diploma in IT	NITC + Cambridge University
Oracle Developer SQL/PLSQL, Form1, form2, Reports	OTECH, Jordan
Oracle 10g JDeveloper	OTECH, Jordan
Expert Microsoft Office	UNESCO

Technical Skills:

- Python, C/C++, HTML/XML, JavaScript, MATLAB programming.
- GPU-based setups and High-Performance Computing (HPC).
- HW/SW setup and networking.
- Website design and administration.
- Editor of several annual academic IT booklets and newsletters.

Referees

- **Prof. Abbes Amira**, Professor of Computer Engineering, Dean of the College of Computing and Informatics, University of Sharjah, UAE.
  Email: aamira@sharjah.ac.ae

- **Prof. Naeem Ramzan**, Professor of Computer Engineering, University of West of Scotland, UK.
  Email: naeem.ramzan@uws.ac.uk

- **Dr. Abdelrahman Abuarqoub**, Senior Lecturer in Computer Security, Cardiff School of Technologies, Cardiff Metropolitan University, UK.
  Email: AAbuarqoub@cardiffmet.ac.uk

- **Dr. Raed Shatnawi**, Associate professor of Software Engineering, Faculty of Computer and Information Technology, Jordan University of Science & Technology, Jordan.
  Email: raedamin@just.edu.jo

- **Dr. Motasem Aldiab**, Assistant professor, Consultant/Certified Trainer in Cloud Computing, Director of research & Training, Atypon Systems co., Amman, Jordan.
  Email: motasem.aldiab@gmail.com