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Research Interest

- 📌 Natural language processing especially for Urdu and Arabic
- 📌 Human activity recognition using Smartphone sensors
- 📌 Context-aware systems for healthcare applications
- 📌 Smart homes/cities based on semantic-enabled data/information fusion & integration
- 📌 Ontology-based activity recognition and assistive technologies

Employment History

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|-----------------------------|--|
| Aug 24, 2016 – | 📌 Assistant Professor , Department of Computer Science, Allama Iqbal Open University, Islamabad, Pakistan. |
| May 17, 2004 – Aug 23, 2016 | 📌 Lecturer , Department of Computer Science, Allama Iqbal Open University, Islamabad, Pakistan. |
| Mar 01, 2004 – May 14, 2004 | 📌 Lecturer , Department of Computer Science, COMSATS Institute of Information Technology, Attock, Pakistan. |

Education

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|-----------------------------|--|
| Mar 01, 2010 – Feb 23, 2015 | 📌 Ph.D. Computer Science , Yonsei University, Seoul, South Korea.
Dissertation title: <i>Adaptive Human Activity Recognition System Using Smartphone Accelerometer</i> . CGPA: 4.10/4.30 |
| Mar 2005 – Aug 2009 | 📌 M.S. Computer Science , Allama Iqbal Open University, Islamabad, Pakistan.
Thesis title: <i>Semantic Search and Retrieval System for Learning Objects through Open Source</i> . Percentage: 79% (635/800) |
| Sep 1999 – Mar 2002 | 📌 M.Sc. Computer Science , Quaid-i-Azam University, Islamabad, Pakistan.
Thesis title: <i>An SVG Editor</i> . Percentage: 62% (1855/3000) |
| Apr 1995 – Mar 1998 | 📌 B.Sc. Math A&B, Physics , University of the Punjab, Lahore, Pakistan.
Percentage: 51% (411/800) |
| Apr 1993 – Mar 1995 | 📌 Higher Secondary School Certificate (HSSC). Pre-Engineering , Federal Board of Intermediate and Secondary Education, Islamabad, Pakistan.
Percentage: 72% (792/1100) |
| Apr 1991 – Mar 1993 | 📌 Secondary School Certificate (SSC). Science , Federal Board of Intermediate and Secondary Education, Islamabad, Pakistan.
Percentage: 84% (718/850) |

Research Publications

Journal Articles

- 1 R. M. W. Ashraf, M. A. Awan, A. Kaikobad, and M. Z. Muzaffar, "Multi-label theme-based classification of quranic verses for urdu translations: A case study for surah al-baqarah and aal-e-imran," *AM Research Review*, vol. 4, no. 4, pp. 1–11, 2026, ISSN: 3007-3197.  URL: <https://amresearchjournal.com/index.php/Journal/article/view/2004>
- 2 K. M. Abbasi, M. A. Awan, and T. Ismail, "A deep learning approach to semantic clarity in urdu translations of the holy quran," *International Journal of Innovations in Science & Technology*, vol. 7, no. 1, pp. 259–271, 2025.  URL: <https://journal.50sea.com/index.php/IJIST/article/view/1193/2153>
- 3 Y. Aftab, M. A. Awan, D. Khaleeq, and T. Ismail, "Enhancing qur'anic ethics and morality: An nlp-based semantic search model for urdu translation," *International Journal of Innovations in Science & Technology*, vol. 7, no. 1, pp. 651–663, 2025.  URL: <https://journal.50sea.com/index.php/IJIST/article/download/1255/2181/17891>
- 4 T. Ismail, M. A. Awan, and D. Khaleeq, "Exploring contextual similarity in quranic ayahs: A case study of surah al-baqarah and aal-e-imran in urdu translations," *International Journal of Innovations in Science & Technology*, vol. 7, no. 1, pp. 69–82, 2025.  URL: <https://journal.50sea.com/index.php/IJIST/article/view/1176/2143>
- 5 D. Khaleeq, M. A. Awan, M. Tariq, and J. Iqbal, "Machine translation of quranic verses: A transformer-based approach to urdu rendering," *International Journal of Innovations in Science & Technology*, vol. 7, no. 2, pp. 702–717, 2025.  URL: <https://journal.50sea.com/index.php/IJIST/article/view/1258/2186>
- 6 F. Nadeem, M. A. Awan, M. Tariq, and D. Khaleeq, "Developing an arabic-urdu ontology of quranic concepts: A semantic approach," *International Journal of Innovations in Science & Technology*, vol. 7, no. 1, pp. 637–650, 2025.  URL: <https://journal.50sea.com/index.php/IJIST/article/view/1254/2180>
- 7 N. Nawaz and M. A. Awan, "Comparative sentiment analysis of urdu qur'anic translations: A machine learning approach," *Journal of Space Technology*, vol. 15, no. 1, pp. 7–17, 2025.  URL: <https://apiweb.ist.edu.pk/media/documents/comparative-sentiment-analysis-of-urdu-quranic1-.pdf>
- 8 M. Tariq, M. A. Awan, and D. Khaleeq, "Developing a qur'anic qa system: Bridging linguistic gaps in urdu translation using nlp and transformer model," *International Journal of Innovations in Science & Technology*, vol. 7, no. 1, pp. 493–505, 2025.  URL: <https://journal.50sea.com/index.php/IJIST/article/view/1216/2170>
- 9 S. Hamid and M. A. Awan, "Assessment of ml classifiers in complex human activity recognition using wearable sensors data," *International Journal of Innovations in Science & Technology*, vol. 6, pp. 104–117, 2024.  URL: <https://journal.50sea.com/index.php/IJIST/article/view/1088/1637>
- 10 M. Saeed and M. A. Awan, "Complex human activities recognition using smartphone sensors: A deep learning approach," *International Journal of Innovations in Science & Technology*, vol. 6, pp. 172–184, 2024.  URL: <https://journal.50sea.com/index.php/IJIST/article/view/1076/1642>
- 11 M. Hasnain, A. Sajid, A. Ayeb, and A. Awan, "Predicting the price of used electronic devices using machine learning techniques," *International Journal of Computing and Related Technologies*, vol. 4, no. 1, pp. 13–19, 2023.  URL: <https://ijcrt.smiu.edu.pk/index.php/smiu/article/view/152/48>
- 12 Z. Noreen, M. Ajmal, and A. Awan, "Impact of authentic learning on the satisfaction, knowledge and skills of distance learners in context-aware ubiquitous learning environment," *Global Regional Review*, vol. 4, no. 2, pp. 115–125, 2019.  URL: <https://www.grrjournal.com/article/Impact-of-Authentic-Learning-on-the-Satisfaction-Knowledge-and-Skills-of-Distance-Learners-in-Context-Aware-Ubiquitous-Learning-Environment>

- 13 M. A. Awan, "Adaptive har system to improve recognition accuracy," *Mehran University Research Journal of Engineering & Technology*, vol. 37, no. 3, pp. 467–482, 2018.  URL: <https://search.informit.org/doi/pdf/10.3316/informit.677618023782422>
- 14 S. N. Khan, K. Mir, A. Tahir, A. Awan, Z. U. Nisa, and S. A. Gillani, "Allocation of tutors and study centers in distance learning using geospatial technologies," *ISPRS International Journal of Geo-Information*, vol. 7, no. 5, p. 185, 2018.  URL: <https://www.mdpi.com/2220-9964/7/5/185>
- 15 Z. un Nisa, K. Mir, H. Fatimah, S. M. Batool, S. Atif, M. A. Awan, et al., "Application of satellite remote sensing in forest change detection and its environmental impacts in district abbottabad, pakistan," *Journal of Pure and Applied Agriculture*, vol. 3, no. 1, 2018.  URL: https://drive.google.com/file/d/16V5ycmt-aiIbJD6n3fr_sQPmnhH6OTlv/view
- 16 T. Javed, M. A. Awan, and T. Hussain, "Recognition of arm & elbow exercises using smartphone's accelerometer," *NFC-IEER Journal of Engineering & Scientific Research*, vol. 5, no. 1, 2017.  URL: <https://www.prdb.pk/article/recognition-of-arm-elbow-exercises-using-smartphone-s-acce-4595>
- 17 A. A. Soofi and A. Awan, "Classification techniques in machine learning: Applications and issues," *Journal of basic & applied sciences*, vol. 13, pp. 459–465, 2017.  URL: <https://pdfs.semanticscholar.org/2678/e213cec548d278879ceaf01582ee8913cc3f.pdf>
- 18 M. A. Awan, Z. Guangbin, H.-C. Kim, and S.-D. Kim, "Subject-independent human activity recognition using smartphone accelerometer with cloud support," *International Journal of Ad Hoc and Ubiquitous Computing*, vol. 20, no. 3, pp. 172–185, 2015.  URL: <https://www.inderscienceonline.com/doi/abs/10.1504/IJAHUC.2015.073170>
- 19 M. A. Awan, Z. Guangbin, C.-G. Kim, and S.-D. Kim, "Human activity recognition in wsn: A comparative study," *International Journal of Networked and Distributed Computing*, vol. 2, no. 4, pp. 221–230, 2014.  URL: <https://link.springer.com/content/pdf/10.2991/ijndc.2014.2.4.3.pdf>
- 20 Z. Guangbin, M. A. Awan, and S.-D. Kim, "An extensible healthcare context engine based on smart phones," *Lecture Notes on Software Engineering*, vol. 2, no. 1, p. 81, 2014.  URL: https://www.researchgate.net/profile/Muhammad-Arshad-Awan/publication/266396055_An_Extensible_Healthcare_Context_Engine_Based_on_Smart_Phones/links/5cab07d0299bf118c4ba8d6a/An-Extensible-Healthcare-Context-Engine-Based-on-Smart-Phones.pdf
- 21 M. Tahir, T. M. Madani, S. Ziauddin, M. A. Awan, and W. H. Rana, "Wiimote squash: Comparing dtw and wfm techniques for 3d gesture recognition," *Int. Arab J. Inf. Technol.*, vol. 11, no. 4, pp. 362–369, 2014.  URL: <https://iajit.org/PDF/vol.11,no.4/5096.pdf>
- 22 M. A. Awan, Z. Guangbin, and S.-D. Kim, "A dynamic approach to recognize activities in wsn," *International Journal of Distributed Sensor Networks*, vol. 9, no. 4, p. 385 276, 2013.  URL: <https://journals.sagepub.com/doi/10.1155/2013/385276>
- 23 M. Tahir, M. A. Awan, A. Hafeez, M. Yazdanie, and S. Ziauddin, "Interactive slide navigation: An approach for manipulating slides with augmented reality markers," *SmartCR*, vol. 2, no. 2, pp. 138–148, 2012.  URL: <https://www.dbpia.co.kr/Journal/articleDetail?nodeId=NODE02467449>
- 24 M. A. Awan, C. G. Kim, C.-P. Hong, J.-H. Lee, and S.-D. Kim, "A survey of augmented reality on handheld devices," *IEMEK Journal of Embedded Systems and Applications*, vol. 5, no. 4, pp. 195–205, 2010.  URL: https://www.researchgate.net/publication/266396091_A_survey_of_augmented_reality_on_handheld_devices

Conference Proceedings

- 1 T. Hussain et al., "A step forward in learning during pandemic: Emerging technologies and innovative pedagogies," in *International Conference on Studies in Engineering, Science, and Technology*, 2022, pp. 82–90.  URL: https://www.researchgate.net/publication/367127829_A_Step_Forward_in_Learning_during_Pandemic_Emerging_Technologies_and_Innovative_Pedagogies

- 2 A. Sajid and M. A. Awan, "Monitoring, tracking and diagnosing dengue fever using smartphone, gps and machine learning," in *2021 16th International Conference on Emerging Technologies (ICET)*, IEEE, 2021, pp. 1–6. [URL: https://ieeexplore.ieee.org/document/9689785](https://ieeexplore.ieee.org/document/9689785)
- 3 M. A. Awan, G. Zhang, X. Yu, and S.-D. Kim, "An adaptive context engine based on activity recognition using smartphone sensors," in *Proceedings of the FTRA International Conference on Advanced Computing and Services (ACS-14)*, Jeju Island, South Korea: Future Technology Research Association (FTRA), 2014. [URL: https://www.researchgate.net/publication/266396055_An_Extensible_Healthcare_Context_Engine_Based_on_Smart_Phones#fullTextFileContent](https://www.researchgate.net/publication/266396055_An_Extensible_Healthcare_Context_Engine_Based_on_Smart_Phones#fullTextFileContent)
- 4 M. A. Awan, Z. Guangbin, and S.-D. Kim, "Activity recognition in wsn: A data-driven approach," in *2012 7th International Conference on Computing and Convergence Technology (ICCCCT)*, IEEE, 2012, pp. 15–20. [URL: https://ieeexplore.ieee.org/abstract/document/6530291](https://ieeexplore.ieee.org/abstract/document/6530291)
- 5 M. A. Awan, A. Sattar, C. G. Kim, C. P. Hong, and S. D. Kim, "Semantic search and retrieval system for learning objects," in *Proceedings of the International Conference on IT Convergence and Security 2011*, Springer, 2011, pp. 129–143. [URL: https://link.springer.com/chapter/10.1007/978-94-007-2911-7_11](https://link.springer.com/chapter/10.1007/978-94-007-2911-7_11)
- 6 C.-P. Hong, M. A. Awan, C.-G. Kim, and S.-D. Kim, "An efficient live stream community management scheme for the mobile," in *Proceedings of the International Conference on IT Convergence and Security 2011*, Springer, 2011, pp. 281–293. [URL: https://link.springer.com/chapter/10.1007/978-94-007-2911-7_24](https://link.springer.com/chapter/10.1007/978-94-007-2911-7_24)

Research Projects

Feb 2018 – Jan 2019  **SDSS for open and distance learning – a case study of AIOU**, National Research Program for Universities (NRPU-5229) – Higher Education Commission, Islamabad, Pakistan.

Research Theses Supervised

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| PhD |  Effectiveness of Indigenous Context-Aware Ubiquitous Learning Application on Distance Learners (Zubia Noreen, RN: AN869173, December 20, 2019) |
| MS |  Recognition of Arm Exercises for Stroke Patients using Smartphone Accelerometer (Fahad Aslam, RN: BD759178, April 22, 2019)
 AHM: Hybrid Approach for Elderly Monitoring (Fatima Kayani, RN: BD759168, July 19, 2019)
 Smart Wearable Infant Monitoring System (SWIMS) for Seizure Disease (Naila Firdos, RN: BI788448, August 23, 2019)
 CARE: An Engine for the Interpretation of Eye Blink (Roohi Bano, RN: BD760935, September 26, 2019)
 Orientation Independent Approach for Human Activity Recognition Using Smartphone (Manzoor Hussain, RN: BD761359, October 02, 2019)
 Career Counselor: An Approach to Guide Secondary Level Students in Pakistan (Surriya Bibi, RN: BD760932, September 15, 2020)
 Complex Human Activity Recognition using Smartphone Sensors: A Deep Learning Approach (Mubashar Saeed, RN: BN735624, March 24, 2021)
 Monitoring and Tracking of Dengue Fever using Smartphone Via GPS (Abdul Sajid, RN: BN735751, November 25, 2021)
 MOTHER: Monitoring of Teenagers' Habits Embodied in Routine Activities (Nadia Mehnaz, RN: BS708361, January 18, 2022) |

Research Theses Supervised (continued)

- Exercise Monitoring of Senile Osteoporosis by Smartphone Sensors (Asma Rasul, RN: BR787346, January 18, 2022)
- Smartphone Surveillance System for Enhancement of Government Employees Work Productivity - A Case Study of Pakistan (Muhammad Adnan, RN: BR786753, April 01, 2022)
- Elderly Monitoring using Deep Learning to Optimize the Tradeoff between Recognition Accuracy & Response Time (Afifa Mushtaq, RN: BN735582, November 16, 2022)
- Predicting the Price of Used Electronic Devices using Machine Learning (Muhammad Hasnain, RN: BN735499, November 23, 2022)
- User Independent Human Activity Recognition using Smartphone (Shehla Habib, RN: BN735696, January 09, 2023)
- Detection of Smartphone Position on Human Body: A Position Independent Approach in HAR (Saba Shehzad, RN: BR787349, November 23, 2023)
- Ball Based Approach to Predict Cricket Outcome Using Machine Learning (Muhammad Nauman Sajid, RN: BR787353, December 22, 2023)
- Development of an NLP-Based Quranic Chatbot for Urdu-speaking Users (Muhammad Tariq, ID: 0000411841, April 22, 2025)
- Multi-Label Theme-Based Classification of Quranic Verses for Urdu Translations: A Case Study for Surah Al-Baqarah and Aal-e-Imran (Rao Muhammad Waseem Ashraf, ID: 0000426340, May 14, 2025)
- Enhancing Clarity in Urdu Translations of the Holy Quran through Word Sense Disambiguation (Kashif Masood Abbasi, ID: 0000418564, May 15, 2025)
- Analyzing the Emotional Tone in Urdu Translations of the Quran: A Comparative Study (Nimra Nawaz, ID: 0000294672, May 15, 2025)
- Development of an Ontology for Quranic Concepts with Arabic-Urdu Annotation (Fouzia Nadeem, ID: 0000412116, June 5, 2025)
- Machine Translation of Quranic Verses into Urdu Using the Transformer Model (Danish Khaleeq, ID: 0000418566, July 22, 2025)
- Understanding Ethics and Morality from Urdu Translation of the Quran Using NLP (Yasir Aftab, ID: 0000291788, July 22, 2025)
- Identification of Contextual Similarity Among Quranic Ayahs for Urdu Translations: A Case Study for Surah Al-Baqarah and Aal-e-Imran (Tehmima Ismail, ID: 0000412064, August 15, 2025)
- Enhancing Quranic Question Answering in Urdu using Knowledge Graphs and Retrieval-Augmented Generation (Syeda Sadia Batool, ID: 0000684927, 2026)
- BS ■ OneWindow: An Ecommerce Platform (Spring, 2023)
- FashionNova: An Online Clothing Store (Spring, 2023)
- Urdu Dictation: A Speech-to-Text Application (Spring, 2023)
- Urdu Quranic Dictionary (Spring, 2024)
- Land Ventures Rental Mobile Application (Spring, 2024)
- Course Folder Management System (Fall, 2024)
- A Centralized System for Managing Final Year Projects (Spring, 2026)
- Emotion Detection in Social Media Posts using Large Language Models (Spring, 2026)
- HACKFORGE: An AI-Powered Cybersecurity Training Platform (Spring, 2026)

Skills

Languages	■ Reading, writing, and speaking competencies for English and Urdu.
Courses Taught	■ Theory of Automata/Computation/PL, Compiler Construction, ML/DL, Operating System, Programming in (C/C++, C#, Java, Python), Data Structures, DBMS, KMS, ML & AI, and Analysis of Algorithms.
Coding	■ Java, KOTLIN, C/C++, C#, PYTHON, ...
Web Dev	■ DJANGO, AND WORDPRESS.
Misc.	■ Academic research, teaching, training.

Miscellaneous Experience

Awards and Achievements

2026	■ Certificate of Appreciation , Awarded by the Academic Staff Association, AIOU, Islamabad. In recognition of Program Coordinator for efforts in ensuring the success and smooth operation of <i>MS Computer Science</i> .
Aug 2022	■ Certificate of Appreciation , Awarded by the Department of Computer Science, AIOU, Islamabad. The one-day workshop on <i>Introduction to Java Application and Applet</i> .
2010 – 2015	■ Merit Scholarship for Higher Education , Awarded by Higher Education Commission, Islamabad, Pakistan to pursue PhD studies.
Dec 2007	■ Certificate of Appreciation , Awarded by the Government of Pakistan, Cabinet Division, Pakistan Telecommunication Authority (PTA), Islamabad. The development of bilingual (English & Urdu) <i>Multimedia Instructional Material</i> for the Rabta Ghar Scheme of Pakistan Telecommunication Authority (PTA).

Certification

Jun 13 – Sep 9, 2006	■ Teaching and Learning in Higher Education . "7th Faculty Development Program" organized by and held at the Learning Innovation Division, Higher Education Commission, Islamabad, Pakistan.
Oct 12 – 24, 2009	■ Teaching and Learning in Higher Education . "Advance Specified Course for MT-FPDP Alumni" organized by and held at the Learning Innovation Division, Higher Education Commission, Islamabad, Pakistan.
Aug 29 – Sep 02, 2022	■ One-week international training workshop on Natural Language Processing (NLP) organized by Center for Languages and Translation Studies & ORIC, AIOU, Islamabad, in Collaboration with Kohsar University, Murree.
Aug 21 – Sep 29, 2023	■ LISAN-UL-QURAN. Instructor: "Amir Sohail Sb" organized by and held at Baseerah Institute (Islamic Education with Modern Approach), Chaklala Campus, Rawalpindi, Pakistan.
Apr 1, 2024	■ Introduction to Generative AI . An online non-credit course authorized by Google Cloud and offered through Coursera .
Jan 15, 2025	■ AI For Everyone . An online non-credit course authorized by DeepLearning.AI and offered through Coursera .
May 23, 2025	■ AI Enhancement with Knowledge Graphs - Mastering RAG Systems . An online non-credit course authorized by Packt and offered through Coursera .
Jun 23, 2026	■ Knowledge Graphs for RAG . An online non-credit course authorized by DeepLearning.AI and offered through Coursera .
	■ Generative AI for Everyone . An online non-credit course authorized by DeepLearning.AI and offered through Coursera .

Miscellaneous Experience (continued)

- Jun 27, 2026  **Arabic for Beginners: Arabic Alphabet and Phonology.** An online non-credit course authorized by Khalifa University and offered through **Coursera**.
- Jul 01, 2026  **AI Python for Beginners.** An online non-credit course authorized by DeepLearning.AI and offered through **Coursera**.
- Jul 04, 2026  **Generative AI with Large Language Models.** An online non-credit course authorized by AWS & DeepLearning.AI and offered through **Coursera**.
- Jul 04, 2026  **Supervised Machine Learning: Regression and Classification.** An online non-credit course authorized by DeepLearning.AI & Stanford|ONLINE and offered through **Coursera**.
- Jul 08, 2026  **Advanced Learning Algorithms.** An online non-credit course authorized by DeepLearning.AI & Stanford|ONLINE and offered through **Coursera**.
- Jul 10, 2026  **Generative AI: Introduction and Applications.** An online non-credit course authorized by IBM and offered through **Coursera**.
- Jul 10, 2026  **Unsupervised Learning, Recommenders, Reinforcement Learning.** An online non-credit course authorized by DeepLearning.AI & Stanford|ONLINE and offered through **Coursera**.
- Jul 20, 2026  **Machine Learning Specialization.** An online non-credit course authorized by DeepLearning.AI & Stanford|ONLINE and offered through **Coursera**.
- Jul 20, 2026  **LangChain for LLM Application Development.** An online non-credit course authorized by LangChain & DeepLearning.AI & Stanford|ONLINE and offered through **Coursera**.

References

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July 12, 2026