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University of Balochistan
Quetta, Pakistan



WORK HISTORY

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| DEC. 2021 – DEC 2022 | POSTDOC RESEARCHER
University of Grenoble Alpes, France. <ul style="list-style-type: none">▪ Supervise Masters and PhD students▪ Handling of sensor data from mobile robots▪ Handling robot using ROS |
| JAN. 2022 - PRESENT | ASSOCIATE PROFESSOR
University of Balochistan <ul style="list-style-type: none">▪ Supervise MS/M.phil and PhD students▪ Teach BS, MS, and PhD programs▪ Supervise development projects of ICT▪ Supervise final year development projects |
| JAN. 2015 – DEC 2021 | VISITING PROFESSOR
Sardar Bhaduar Khan Women University <ul style="list-style-type: none">▪ Supervise MS thesis▪ Supervise development projects of ICT▪ Supervise final year development projects |
| JULY. 2007 – DEC.2014 | LECTURER
University of Balochistan <ul style="list-style-type: none">▪ Teach BS, MS, and PhD programs▪ Supervise development projects of ICT▪ Supervise final year development projects |
| SEP.2010 – SEP.2011 | RESEARCH INTERNEE
National Institute of Informatics, Tokyo <ul style="list-style-type: none">▪ Research and Development using Matlab and C++ |

EDUCATION

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| JAN.2010 – DEC.2013 | ASIAN INSTITUTE OF TECHNOLOGY, THAILAND
PhD Computer Science <ul style="list-style-type: none">▪ Automatic Image Retrieval▪ Video Segmentation▪ Robust Image and Video Features▪ Multimedia Information Retrieval▪ Image Understanding▪ Optical Character Recognition |
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JAN.2008 – DEC.2009

ASIAN INSTITUTE OF TECHNOLOGY, THAILAND
MS Computer Science

- Text Processing and Retrieval
- Pattern Mining
- Document Classification

HONOR AND AWARDS (ONLY SELECTED)

FEB 2016

KEYNOTE SPEAKER

National Conference on Trends and Innovations in Information Technology (TIIT'16), Quaid-e-Awam University of Engineering, Science and Technology, Nawabshah.

JAN 2016

TECHNICAL PROGRAM COMMITTEE

International conference on Computing, Electronic and Electrical Engineering (ICE Cube)

FEB 2015

KEYNOTE SPEAKER

National Conference on Mathematics and Computer Science (NCMCS), Quaid-e-Awam University of Engineering, Science and Technology, Nawabshah.

MARCH 2010

DISTINGUISHED PHD STUDENT SELECTED FOR INTERNSHIP IN JAPAN

National Institute of Informatics International Internship Program, Tokyo (Japan)

SELECTED R&D PROJECTS SUPERVISED

2019

VISITORS TRACKING USING CCTV FEEDS

TRACKING AND RECOGNITION OF VISITORS USING ONLY CCTV FEEDS. THE VISITORS ARE NOT ALREADY REGISTERED TO OUR SYSTEM. BASED ON THEIR FACIAL FEATURES WE HAVE TO TRACK AND RECOGNIZE THEM.

2018

SMART CLASSROOM

IMPLEMENTATION OF INTERACTIVE FEEDBACK MANAGEMENT SYSTEM FOR CONTINUOUS EVALUATION OF THE LECTURER.

2015

TRACK ME

GPS based tracking via Android sets. Client applications is installed on android sets which has many user centric widgets such as nearby hospitals, schools, masjids, today's weather, currency exchange etc. User location is updated to server on every T seconds, where T can be specified by admin. An employer can have obvious whereabouts of his field employees. One Admin can handle many devices, where device can be a person in the field or the CAR.

2015

UOB DESK

PHP based application for UoB social activities.

2015

MAKE3D

An ICT funded project for making online 3D designs. An interactive GUI is given to client to make 3D design and texts and export to any required format.

2014

MY WALLET

A personal account who keeps the record of your spending and receiving on Android smartphones and tablets. This app can easily read text messages sent by banks over transactions and updates the record automatically.

SELECTED PUBLICATIONS

International Journals:

- Vulnerability detection in Java source code using a quantum convolutional neural network with self-attentive pooling, deep sequence, and graph-based hybrid feature extraction. (2024). *Scientific Reports*, 14(1), 7406. <https://doi.org/10.1038/s41598-024-73058-0>
- An efficient cluster optimization framework for internet of things (IoT) based Wireless Body Area Networks. (2023). *Journal of Enterprise Information Management*, 36(3), 839–860. <https://doi.org/10.1108/JEIM-02-2022-0057>
- Efficient detection and tracking of human using 3D LiDAR sensor. (2023). *Sensors*, 23(10), 4720. <https://doi.org/10.3390/s23104720>
- GENDER BASED MONITORING OF SOP's DURING COVID-19 USING MACHINE LEARNING. (2023). *Journal of Applied and Emerging Sciences*, 13(1), 56–60.
- Enhanced facial expression recognition via deep transfer learning and augmentation. (2023). *LC International Journal of STEM*, 4(4), 1–9.
- Predicting COVID-19 trends with comparative analysis of ARIMA and ANN models. (2023). *Pakistan Journal of Emerging Science and Technologies*, 4(4).
- Automated meter reading detection using inception with single shot multi-box detector. (2021). *Intelligent Automation & Soft Computing*, 27(2).
- Transfer learning approach for classification of histopathology whole slide images. (2021). *Sensors*, 21(16), 5361. <https://doi.org/10.3390/s21165361>
- Compact binary fingerprint for image copy re-ranking. (2021). *arXiv preprint arXiv:2109.07802*.
- Automatic CV ranking using document vector and word embedding. (2021). *Pakistan Journal of Emerging Science and Technologies*, 2, 1–9.
- Face detectors evaluation to select the fastest among DLIB, HAAR Cascade, and MTCNN. (2021). *Pakistan Journal of Emerging Science and Technology*, 2(1), 50–62.
- Towards intelligent P2P IPTV overlay management through classification of peers. (2022). *Peer-to-Peer Networking and Applications*, 15(1), 827–838.
- Sentiment analysis of Roman Urdu on e-commerce reviews using machine learning. (2022). *CMES-Computer Modeling in Engineering & Sciences*.
- Deep transferable learning on heartbeat classification for imbalance dataset. (2022). *Journal of Intelligent & Fuzzy Systems*, 43(2), 2057–2067.
- Extended framework for Sindhi numerals OCR using gradient orientation histograms. (2022). *Journal of Intelligent & Fuzzy Systems*, 43(2), 2045–2056.

- Semantic similarity-based food entities recognition using WordNet. (2022). *Journal of Intelligent & Fuzzy Systems*, 43(2), 2069–2078.
- Attention-based RU-BiLSTM sentiment analysis model for Roman Urdu. (2022). *Applied Sciences*, 12(7), 3641.
- Smart classroom monitoring using novel real-time facial expression recognition system. (2022). *Applied Sciences*, 12(23), 12134.
- Human arm motion prediction for collision avoidance in a shared workspace. (2022). *Sensors*, 22(18), 6951.
- Video scene detection using compact bag of visual word models. (2018). *Advances in Multimedia*, 2018(1), 2564963. <https://doi.org/10.1155/2018/2564963>
- Empirical evaluation of SVM for facial expression recognition. (2018). *International Journal of Advanced Computer Science and Applications*, 9(11).
- Systematic analysis and classification of cardiac rate variability using artificial neural network. (2018). *International Journal of Advanced Computer Science and Application*, 9(11), 746–750.
- Video genre identification using clustering-based shot detection algorithm. (2019). *Signal, Image and Video Processing*, 13(7), 1413–1420.
- Image retrieval using visual phrases. (2019). *International Journal of Advanced Computer Science and Applications*, 10(3).
- Aspect-based opinion mining on student's feedback for faculty teaching performance evaluation. (2019). *IEEE Access*, 7, 108729–108741.
- Development of dynamic modeling and fuzzy logic system by classical and modern strategies for the control of quadcopter. (2019). *American Scientific Research Journal for Engineering, Technology, and Sciences*, 62(1), 108–114.
- Winning the polio war in Pakistan. (2019). *International Journal of Advanced Computer Science and Applications*, 10(12).
- A spectrogram-based deep feature assisted computer-aided diagnostic system for Parkinson's disease. (2020). *IEEE Access*, 8, 35482–35495.
- Urdu handwritten character recognition using deep learning. (2020). *Journal of Information Communication Technologies and Robotic Applications*, 42–51.
- Region-of-interest based transfer learning assisted framework for skin cancer detection. (2020). *IEEE Access*, 8, 147858–147871.
- Predicting the session of a P2P IPTV user through support vector regression (SVR). (2020). *Engineering, Technology & Applied Science Research*, 10(4), 6021–6026.
- Extractive text summarization models for Urdu language. (2020). *Information Processing & Management*, 57(6), 102383.
- Performance enhancement of patch-based descriptors for image copy detection. (2016). *International Journal of Advanced Computer Science and Applications*, 7(3).
- Effective compression of center symmetric local binary pattern. (2017). *Mehran University Research Journal of Engineering & Technology*, 36(2), 209–224.

- Performance evaluation of SIFT and convolutional neural network for image retrieval. (2017). *International Journal of Advanced Computer Science and Applications*, 8(12).
- BIG-OH: Binarization of gradient orientation histograms. (2014). *Image and Vision Computing*, 32(11), 940–953.
- Mining movies for song sequences with video-based music genre identification system. (2013). *Information Processing & Management*, 49(2), 529–544.
- A framework for video segmentation using global and local features. (2013). *International Journal of Pattern Recognition and Artificial Intelligence*, 27(05), 1355007.
- Creating multi-level class hierarchy for question classification with NP analysis and WordNet. (2012). *Journal of Digital Information Management*, 10(6), 379–388.

Conferences & Book Chapters

- Exploring word embeddings and 3D quantization for human hand motion prediction in shared workspace with robot. (2024). In *Proceedings of the 18th International Conference on Control, Automation, Robotics and Vision (ICARCV)* (pp. 684–690). IEEE.
- 3D-PSH: Lightweight 3D LiDAR object detection using adaptive clustering and 3D point spatial histograms. (2024). In *Proceedings of the IEEE 36th International Conference on Tools with Artificial Intelligence (ICTAI)* (pp. 612–616). IEEE.
- Learning predictive models for underground coal mine environment using sensor data. (2021). In *Proceedings of the International Conference on Computing, Electronic and Electrical Engineering (ICE Cube)* (pp. 1–6). IEEE.
- BIOPAK Flasher: Epidemic disease monitoring and detection in Pakistan using text mining. (2020). In *Proceedings of the International Workshop on Soft Computing Applications* (pp. 519–536). Springer International Publishing.
- Identifying negativity factors from social media text corpus using sentiment analysis method. (2020). In *Proceedings of the International Workshop on Soft Computing Applications* (pp. 508–518). Springer International Publishing.
- Empirical evaluation of activation functions in deep convolution neural network for facial expression recognition. (2020). In *Proceedings of the 43rd International Conference on Telecommunications and Signal Processing (TSP)* (pp. 204–207). IEEE.
- Cloud-based face recognition for low resource clients. (2022). In *Security and Privacy Trends in Cloud Computing and Big Data* (pp. 73–84). CRC Press.
- Facial expression recognition and analysis of interclass false positives using CNN. (2019). In *Proceedings of the Future of Information and Communication Conference* (pp. 46–54). Springer International Publishing.
- Sentiment analysis in e-commerce using SVM on Roman Urdu text. (2019). In *Proceedings of the International Conference for Emerging Technologies in Computing* (pp. 213–222). Springer, Cham.

- Better object recognition using bag of visual word model with compact vocabulary. (2017). In *Proceedings of the 13th International Conference on Emerging Technologies (ICET)* (pp. 1–4). IEEE.
- Unsupervised image segmentation using LAB color space. (2017). In *Proceedings of the Intelligent Systems Conference (IntelliSys)* (pp. 774–778). IEEE.
- Bag of features vs vector of locally aggregated descriptors. (2016). In *Proceedings of the SAI Intelligent Systems Conference* (pp. 119–128). Springer International Publishing.
- Handwritten optical character recognition system for Sindhi numerals. (2016). In *Proceedings of the International Conference on Computing, Electronic and Electrical Engineering (ICE Cube)* (pp. 262–267). IEEE.
- Making patch based descriptors more distinguishable and robust for image copy retrieval. (2015). In *Proceedings of the International Conference on Digital Image Computing: Techniques and Applications (DICTA)* (pp. 1–8). IEEE.
- Automatic image segmentation based on maximal similarity based region merging. (2015). In *Proceedings of the International Conference on Digital Image Computing: Techniques and Applications (DICTA)* (pp. 1–8). IEEE.
- Bag of visual words model for videos segmentation into scenes. (2013). In *Proceedings of the Fifth International Conference on Internet Multimedia Computing and Service* (pp. 191–194).
- Improving the performance of SIFT and CSLBP for image copy detection. (2013). In *Proceedings of the 36th International Conference on Telecommunications and Signal Processing (TSP)* (pp. 803–807). IEEE.
- Simple example of applying extended Kalman filter. (2013). In *Proceedings of the 1st International Electrical Engineering Congress*.
- Q-CSLBP: Compression of CSLBP descriptor. (2012). In *Proceedings of the Pacific-Rim Conference on Multimedia* (pp. 513–521). Springer Berlin Heidelberg.
- Creating missing classes automatically to improve question classification in question answering systems. (2012). In *Proceedings of the Seventh International Conference on Digital Information Management (ICDIM)* (pp. 99–103). IEEE.
- Shot-based genre identification in musicals. (2012). In *Proceedings of the International Conference on Information Processing* (pp. 129–138). Springer Berlin Heidelberg.
- Shot boundary detection from videos using entropy and local descriptor. (2011). In *Proceedings of the 17th International Conference on Digital Signal Processing (DSP)* (pp. 1–6). IEEE.
- Video segmentation into scenes using entropy and SURF. (2011). In *Proceedings of the 7th International Conference on Emerging Technologies* (pp. 1–6). IEEE.