
Dr. Usama Ijaz Bajwa
COMSATS University Islamabad, Lahore Campus, Pakistan

usamabajwa@cuilahore.edu.pk, usama@usamaijaz.com
website: www.usamaijaz.com
<https://scholar.google.com/citations?user=IGWptLcAAAAJ&hl=en>

EDUCATION

2008 to April 2013: PhD from CASE Islamabad / UET Taxila

2004 to 2006: MS from CASE Islamabad / UET Taxila

1999 to 2001: MSc from Hamdard University, Karachi

1996 to 1998: BSc from Punjab University, Lahore

EXPERIENCE

INDUSTRIAL EXPERIENCE

June 2008 to October 2010:

Team lead in the project Automatic Personal Identification Biometrics System (APIBS) for Large Scale Applications running under Mohammad Ali Jinnah University, Islamabad, Pakistan, sponsored by National ICT R&D Fund, Ministry of Information Technology, Pakistan <http://www.ictrdf.org.pk/fp-apibs.htm>.

Responsibilities and Achievements:

- Project Team development, training, and management.
- Problem Solving and collaboration

2008 to 2010:

Research Student & Moderator of Vision and Pattern Recognition Systems (VisPRS) Research group at Muhammad Ali Jinnah University, Islamabad <http://www.visprs.com>

Responsibilities and Achievements:

- Managing the VisPRS research group as a moderator.
- Carrying out research in the field of face recognition.

May 2007 to November 2007:

Visiting Researcher at Medical Imaging Research Unit (<http://imaging.research.southwales.ac.uk>) at University of South Wales, UK (Formerly University of Glamorgan, UK) <http://www.southwales.ac.uk/>

Responsibilities and Achievements:

- Development of Infrared Atlas of Normals, A database of normal human skin temperature distribution. <http://imaging.research.southwales.ac.uk/projects/ir/atlas/>

2004 to 2007:

Research Student & Moderator of Machine Vision and Pattern Analysis (MVPA) Research group at Centre for Advanced Studies in Engineering (CASE), Islamabad <http://www.case.edu.pk/>

Responsibilities and Achievements:

- Carrying out research in the field of finger print verification for both complete and partial finger prints.
- Implementation of finger print recognition algorithms in MATLAB.
- Literature review of Image Super resolution techniques, Image and video epitomes.
- Worked on shadow removal from images.
- Currently working on multi spectral and multi dimensional face recognition.

Spring 2003 to Fall 2004:

Assistant System Analyst (CITC), COMSATS Institute of Information Technology (CIIT), Abbottabad. <http://www.ciit-atd.edu.pk/>

Responsibilities and Achievements:

- Development Projects: COMSATS online testing system in CITC.

TEACHING / RESEARCH EXPERIENCE

April 2015 to date

Assistant Professor (Department of Computer Science) / Associate Head, COMSATS University Islamabad (CUI), Lahore Campus. <http://www.cuilahore.edu.pk>

- Teaching courses (Digital Image Processing, Operating System Concepts, and Fundamentals of Computer Programming) at under graduate level and Advanced/Special Topics in Image Processing, Advanced Topics in Computer Vision at graduate level.
- Head, Machine Perception & Visual Intelligence Research Group <https://sites.google.com/view/mpvir>
- Supervising PhD, MS and Undergrad Students.
- Being the Associate Head of the Department, managing day to day departmental activities.
- Program Chair (International Conference on Frontiers of Information Technology, 2020) www.fit.edu.pk
- Chairperson COMSATS International Model United Nations (CIMUN 2019)
- Faculty Advisor, Character Building Society (CBS), Formed on the request of National Accountability Bureau (NAB).
- Program Chair (International Conference on Frontiers of Information Technology, 2019) www.fit.edu.pk
- Convener (Local Industry Liaison Committee, B2B Meetings Committee), Pak China Business Forum – Industrial Expo, 2019. www.pcbf.org.pk
- Program Chair (International Conference on Frontiers of Information Technology, 2018) www.fit.edu.pk
- Convener (Local Industry Liaison Committee, B2B Meetings Committee), Pak China Business Forum – Industrial Expo, 2018. www.pcbf.org.pk
- Convener (Local Industry Liaison Committee, Sponsorship Committee, B2B Meetings Committee), Pak China Business Forum, 2017. www.pcbf.org.pk
- Program Chair (International Conference on Frontiers of Information Technology, 2017) www.fit.edu.pk
- Program Chair (International Conference on Frontiers of Information Technology, 2016) www.fit.edu.pk
- COMSATS Institute of Information Technology Lahore, focal person at “Standing Committee on Technical Education” and “Standing Committee on Science, Technology & Technology Promotion” in Lahore Chamber of Commerce & Industry (2016, 2017)
- Program Chair (International Conference on Frontiers of Information Technology, 2015) www.fit.edu.pk
- Convener (Local Industry Liaison Committee, Sponsorship Committee, B2B Meetings Committee), Pak China Business Forum, 2016. www.pcbf.org.pk

October 2010 to March 2015

Assistant Professor (Department of Computer Science), COMSATS Institute of Information Technology (CIIT), Abbottabad. <http://www.ciit-atd.edu.pk/>

- Program Chair (International Conference on Frontiers of Information Technology, 2014) www.fit.edu.pk
- Head, Information Security & Image Processing (ISIP) Research Group
- Coordinator Graduate Programs (MS & PhD)
- Program Head (BSCS Program) (till August 2013)
- Head, under graduate student project evaluation committee (till August 2013)
- Along with teaching, supervision of MS students and under graduate final year projects. Taught courses: Operating System Concepts, Digital Image Processing & Advanced Topics in Digital Image Processing
- Convener Departmental Graduate Admission Committee, Departmental Graduate Alumni Committee, Departmental Doctoral Comprehensive Examination Committee
- Member Departmental Academic Review Committee, Campus Academic Review Committee, Departmental Faculty Hiring Committee, Departmental Advisory Committee & Campus Graduate Program Committee.

Fall 2010:

- Taught a course “Digital Image Processing” at NUST (EME college, Mechatronics department) (MS program)

Fall 2009:

- Taught a course “Digital Image Processing” at NUST (EME college, Mechatronics department) (MS program)

Spring 2003 to Fall 2004:

Lecturer (Faculty of Computer Science)/ Assistant System Analyst (CITC), COMSATS Institute of Information

Technology (CIIT), Abbottabad. <http://www.ciit-atd.edu.pk/>

- Taught courses: Introduction to Algorithms, Operating System Concepts & Software Engineering.
- Organized & managed participation of Computer Science department students in various extracurricular events.

Spring 2005 to Spring 2008:

- Taught a course “Telecom policies and regulations” at Sir Syed School of information technology (SS-CARE).
- Teacher Assistantships in the courses Digital Image processing, Computer Vision and Pattern Recognition taught at Muhammad Ali Jinnah University.
- Teacher Assistantships in the courses Computer Vision, Digital Communication, Broadband Switching Systems, Software Engineering & Wireless Communication taught at CASE.

FUNDING SECURED

- **Funding of PKR 43.284 Million** for establishment of Video Analytics Lab under the National Center in Big Data and Cloud Computing (NCBC) approved by Planning Commission, Govt. of Pakistan (CO PI) 2018.
- Funding of FYP project under the NGIRI program of IGNITE (Formerly National ICT R&D Fund) 2018.

RESEARCH AREAS EXPLORED

- Face Recognition
- Facial Emotion Recognition
- Finger Print Recognition
- Medical Image Processing
- Natural Language Processing
- Image and Video Epitomes
- IRIS Recognition

COURSES/WORKSHOPS/CONFERENCES

- Program Chair, 18th International Conference on Frontiers of Information Technology (FIT 2020)
- Program Chair, 17th International Conference on Frontiers of Information Technology (FIT 2019)
- Delivered a talk, “Plant Disease Detection using Multispectral Images : A Beginners Perspective” at National Conference on Analysis of Multispectral Radiometer and Satellite Data for Better Monitoring and Management of Crops and Livestock Production, 30th July 2019, Virtual University of Pakistan, Lahore, Pakistan
- Program Chair, 16th International Conference on Frontiers of Information Technology (FIT 2018)
- Program Chair, 15th International Conference on Frontiers of Information Technology (FIT 2017)
- Delivered a talk, “Basics of Event Management” at IEEE mini POCO 2017, Lahore, Pakistan
- Program Chair, 14th International Conference on Frontiers of Information Technology (FIT 2016)
- Program Chair, 13th International Conference on Frontiers of Information Technology (FIT 2015)
- Program Committee Member, Special Session on Formal Modelling for Machine Learning Techniques, The 14th IEEE International Conference on Machine Learning and Applications (IEEE ICMLA’15)
- Program Chair, 12th International Conference on Frontiers of Information Technology (FIT 2014)
- Delivered a lecture on “Automated Finger Print Identification System” in Capacity Building Course on Forensic Science & Scientific Aids, organized by Research & Training Cell, National Accountability Bureau (NAB), Islamabad, Pakistan, July 10, 2014
- Member technical committee for International Conference on Frontiers of Information Technology (FIT) 2009, 2010, 2011, 2012 and 2013
- Organized the International Conference on Frontiers of Information Technology (FIT), Islamabad, Pakistan, 2010, 2011 and 2012
- Organized the IEEE International Conference on Emerging Technologies (ICET), Center for Advanced Studies in Engineering (CASE), Islamabad, Pakistan, September 17-18, 2005
- Attended the 8th Course on the Theory and Practice of Infra-Red Thermal Imaging in Medicine at University of Glamorgan, UK.
- Attended and gave a talk on multi model and multi-dimensional face recognition at Frontiers of Information Technology, FIT 2008, 18-19 December 2008, Pearl Continental Hotel, Bhurban, Pakistan

PROJECTS/THESIS SUPERVISED

PhD THESIS

- Ghulam Gilanie, “Automated Detection and Classification of Brain Tumor from MRI Images using Machine Learning Methods”, COMSATS University Islamabad, Lahore Campus. (Completed)
- Mubbashar Saddique, “Robust Video Forgery Detection and Localization using Artificial Intelligence Techniques”, COMSATS University Islamabad, Lahore Campus. **(Co Supervisor)** (In Progress)
- Khurram Ejaz, “Image Segmentation Method for Brain Tumor Detection using MRI Imaging”, Universiti Teknologi Malaysia. **(Co Supervisor)** (Completed)
- Rafaqat Alam Khan, “Smoke and Fire Detection from Surveillance Videos”, COMSATS University Islamabad, Lahore Campus. (In Progress)
- Gulshan Saleem, “Anomaly Detection in surveillance videos for Real Time Monitoring”, COMSATS University Islamabad, Lahore Campus. (In Progress)
- Yasar Mehmood, “Brain Tumor classification, segmentation and grading, A system as an alternative for Biopsy”, COMSATS University Islamabad, Lahore Campus. (In Progress)

MS THESIS

- Aasma Aslam, “Automated Facial Emotion Recognition”, COMSATS Institute of Information Technology, Abbottabad. (Completed)
- Salahuddin Ayubi, “Super-Resolution Based Image Enhancement of Biomedical Images”, COMSATS Institute of Information Technology, Abbottabad. (Completed)
- Rakhshanda Yousaf, “Reconstruction of Scene Opposite to the Subjects in an Image Using Eye Reflections”, COMSATS Institute of Information Technology, Abbottabad. (Completed)
- Miraj Asghar, “Fully Unsupervised Word Segmentation for Morphologically Rich Languages”, COMSATS Institute of Information Technology, Abbottabad. **(Co Supervisor)** (Completed)
- Sofia Naureen Khan, “Digital Watermarking Scheme in High Efficiency Video Coding (HEVC)”, COMSATS Institute of Information Technology, Abbottabad. (Completed)
- Waqas Ahmed, “Reduced Complexity and Optimized Face Recognition Approach Based on Facial Symmetry”, COMSATS Institute of Information Technology, Abbottabad. (Completed)
- Abdullah Ali Shah, “A CADE System for Fast and Accurate Malignant Lung Nodule Detection”, COMSATS Institute of Information Technology, Abbottabad. (Completed)
- Shahzada Gulfam, “Face Recognition from Real Time Surveillance Videos”, COMSATS Institute of Information Technology, Abbottabad. (Completed)
- Syed Husnain Bukhari, “Exploring Semantic Tagger, BableNet and WordNet for Detecting Different Types of Paraphrased Plagiarism”, COMSATS Institute of Information Technology, Lahore. (Completed)
- Ahmad Usama, “Automated Detection of Early Pulmonary Nodule in Computed Tomography Images”, COMSATS University Islamabad, Lahore Campus. (Completed)
- Javaid Iqbal, “Automatic Brain Tumor Segmentation in Magnetic Resonance Images through Region Based Approach”, COMSATS University Islamabad, Lahore Campus. (Completed)
- Ramna Maqsood, “Anomaly Detection in surveillance videos for Real Time Monitoring Using 3D Deep Neural Networks”, COMSATS University Islamabad, Lahore Campus. (Completed)
- Maimoona Rafiq, “Reconstruction of scene using corneal reflection”, COMSATS University Islamabad, Lahore Campus. (Completed)
- Hammad-ud-din Ahmed, “Deception Detection using Facial Action Coding System in Videos using Deep Networks”, COMSATS University Islamabad, Lahore Campus. (In Progress)
- Imran Zaman, “A Robust Deep Network based Multi Camera Multi Object Tracking”, COMSATS University Islamabad, Lahore Campus. (In Progress)
- Sareya Qayyum, “Rotation Invariant Disguised Facial Recognition using Deep Networks”, COMSATS University Islamabad, Lahore Campus. (Completed)
- Ali Hussain, “Fire and Smoke Detection”, COMSATS University Islamabad, Lahore Campus. (In Progress)

UNDER GRADUATE PROJECTS

- Zain-Ul-Abideen, Sadia Waheed Awan, “Speech analysis and recognition using signal processing techniques”, COMSATS Institute of Information Technology, Abbottabad. (Completed)
- Qurat-ul-ain Ali, Memoona Umar, “Touchless Fingerprint Recognition Using Mobile Camera”, COMSATS Institute of Information Technology, Abbottabad. (Completed)
- Fazal Ullah, Waleed Rasheed, “Emotional Computing”, COMSATS Institute of Information Technology, Abbottabad (Completed)
- Maria Rathore, Sahibzadi Annum Shaheen, “Emotion aware Intelligent Tutor for Kids”, COMSATS Institute of Information Technology, Abbottabad (Completed)
- Abdul Hadi Khan, Muhammad Rashid, “Interactive Tourist Guide for Pakistan, An Android Based Mobile Application”, COMSATS Institute of Information Technology, Abbottabad (Completed)

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- Bilal Munsif, Muhammad Siddique, “Traffic Expert for SQUID Server”, COMSATS Institute of Information Technology, Abbottabad (Completed)
 - Danyal Tajik, Barrera Nazir, “Pilgrim Friend”, COMSATS Institute of Information Technology, Abbottabad (Completed)
 - Sardar Alam, Hassan Khan, “Skin Disease Classification”, COMSATS Institute of Information Technology, Abbottabad (Completed)
 - Rameez Ahmed, Waqas Farman, “Gesture Based Image Processing Assistant for Surgeons”, COMSATS Institute of Information Technology, Abbottabad (Completed)
 - Usman Iqbal, Usman Afzal, “ConnectMe”, COMSATS Institute of Information Technology, Abbottabad (Completed)
 - Safi Ullah, Bilal Ameer, Rehan Latif, “Automated Data Organizer”, COMSATS Institute of Information Technology, Lahore (Completed)
 - Daud Riaz, Moaz Mahmood Rana, Khurram Ilyas, “Conference Management System”, COMSATS Institute of Information Technology, Lahore (Completed)
 - Wasim Sajjad, Samaid Saeed, Waqas Ahmad, “Forgery Resistant Digital Document Creator”, COMSATS Institute of Information Technology, Lahore (Completed) **(Shortlisted for ERUPT 2016)**
 - Sarmad Saleem, Meena Liaqat, “EMODET”, COMSATS Institute of Information Technology, Lahore (Completed) **(Shortlisted for FIT 2016) (Shortlisted for ERUPT 2016)**
 - Muhammad Umair, Haseeb Ahmed, Syed Ali Murtaza, “Multi Spectral Face Recognition”, COMSATS Institute of Information Technology, Lahore (Completed) **(First Position Spring 2017) (Conference Paper Published)**
 - Muhammad Umair Assad, Muhammad Talha Azhar, “Pi Spy”, COMSATS Institute of Information Technology, Lahore (Completed)
 - Muhammad Abdullah Nazir, Sidra Hareem, Ummara Nawaz, “Visionary Vision for Blinds”, COMSATS Institute of Information Technology, Lahore (Completed) **(Shortlisted for Visio Spark 2016) (Shortlisted for FIT 2017)**
 - Muhammad Bilal, Safi Ullah Mehboob, Ahmed Sherjeel Kardar, “My Celebrity Match”, COMSATS Institute of Information Technology, Lahore (Completed)
 - Muhammad Arslan, Sundas Saif, “CAD Application For Brain Tumor Detection Using Image Segmentation”, COMSATS Institute of Information Technology, Lahore (Completed)
 - Shahrukh Tahir, Absar Ahmed Mujaddidi, Hafiz Muhammad Waqas, “Digital Assistant for Visually Impaired People”, COMSATS Institute of Information Technology, Lahore (Completed) **(Shortlisted for FIT 2017)**
 - Talha Fayyaz, Ahmed Ajmal, Arslan Ahmed, “Go Rescue”, COMSATS Institute of Information Technology, Lahore (Completed) **(Shortlisted for BITA 2017)**
 - Salman Danish, Hadique Akhzar, “Short It”, COMSATS Institute of Information Technology, Lahore (Completed)
 - Haseeb Ali, Faiz ul Bari, Ansab bin Mehmood, “Wheat Guard”, COMSATS University Islamabad, Lahore Campus (Completed) **(Distinguished FYP Project Fall 2018) (Incubated in Plan9’s “Launchpad 13 Challenge”) (Incubated in Plan X as Agriasan company)**
 - Moeed Khalid, Ali Raza, “Semantic Labelling of HSR Images”, COMSATS University Islamabad, Lahore Campus (Completed) **(First Position FALL 2018) (Distinguished FYP Project Fall 2018) (funded by National Grassroots ICT Research Initiative (2017-18))**
 - Maham Nasir, Abeera Alvi, Amna Hashmat, “Derma Diagnoser”, COMSATS University Islamabad, Lahore Campus (Completed)
 - Bushra Ishfaq, Suman Khalid, “Breast Cancer detection using image processing”, COMSATS University Islamabad, Lahore Campus (Completed)
 - Nadir Latif, Mujtaba Mushtaq, Shahzada Shah Hussain, “EyeSpy”, COMSATS University Islamabad, Lahore Campus (Completed) **(First Position Spring 2019)**
 - Daneyal Mushtaq, Muhammad Akbar, “Warriors-The Legends of Time”, COMSATS University Islamabad, Lahore Campus (Completed) **(Third Position Spring 2019)**
 - Ata Ullah Butt, Hasham Alam, Rija Tariq Lodhi, “Pakistan’s Hall of Fame”, COMSATS University Islamabad, Lahore Campus (Completed) **(Third Position Fall 2019) (Winner/First Position, All Pakistan DICE Competition 2020)**
 - Hamza Tanveer, Laiba Ikram, “Pothole Detection using an Android Application”, COMSATS University Islamabad, Lahore Campus (Completed) **(First Position Fall 2019)**
 - Haris Khan, Umer Riaz, Zaid Ahmad, “Hub ZUH”, COMSATS University Islamabad, Lahore Campus (Completed) **(Winner, Web Development Category, Visio Spark 2019)**
 - Muhammad Maroof, Abdul Wahab, Hassan Shafiq, “Gideon”, COMSATS University Islamabad, Lahore Campus (In Progress)
 - Ramsha Rasheed, Bilal Ahmed, Aisha, “Charades”, COMSATS University Islamabad, Lahore Campus (In Progress)
 - Nayab Amir, Noor e Eman, “Game for Dyslexics”, COMSATS University Islamabad, Lahore Campus (In Progress)
 - Waqas Ahmed, Hamza Sadiq, Ali Hassan, “AQI Predictor”, COMSATS University Islamabad, Lahore Campus (In Progress)

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 - Ifrah Tehleel, Nauman Akram, Jan Muhammad, “Surveilina”, COMSATS University Islamabad, Lahore Campus (In Progress)
 - Faran Ayyaz, Tehreem Anjum, Faryal Khalid, “Live Bus”, COMSATS University Islamabad, Lahore Campus (In Progress)
 - Hamza Latif, Hassan Sharjeel, “Road Pulse”, COMSATS University Islamabad, Lahore Campus (In Progress)

PUBLICATIONS

JOURNAL PUBLICATIONS: IF : 39.61

- **U I Bajwa***, S Alam, N I Ratyal, M W Anwar (2020), “Skin Disease Classification using Neural Network”, Current Medical Imaging, Vol: 16, Issue: 6, pp. 711-719 (IF = 0.533)
- Mubbashar Saddique, Khurshid Asghar, **Usama Ijaz Bajwa**, Muhammad Hussain, Hatim A. Aboalsamh, Zulfiqar Habib (2020), " Classification of Authentic and Tampered Video Using Motion Residual and Parasitic Layers", IEEE Access, Vol: 8, Issue: 1, pp. 56782-56797, Impact Factor: 4.098
- Mubbashar Saddique, Khurshid Asghar, **Usama Ijaz Bajwa**, Muhammad Hussain, Zulfiqar Habib (2019), "Spatial Video Forgery Detection and Localization using Texture Analysis of Consecutive Frames", Advances in Electrical and Computer Engineering, Vol: 19, Issue: 03, pp. 97-108, Impact Factor: 0.65
- Ghulam Gilanie, **Usama Ijaz Bajwa***, Mustansar Mahmood Waraich, Zulfiqar Habib (2019), “Automated and Reliable Brain Radiology with Texture Analysis of MRI and Cross dataset Validation”, International Journal of Imaging Systems and Technology, Volume 29, pp. 531-538 (IF = 1.423)
- Ghulam Gilanie, **Usama Ijaz Bajwa***, Mustansar Mahmood Waraich, Zulfiqar Habib (2019), “Computer Aided Diagnosis of Brain Abnormalities Using Texture Analysis of MRI Images”, International Journal of Imaging Systems and Technology, Volume 29, Issue 3, pp. 260-271 (IF = 1.423)
- N Khan, W Anwar, **U I Bajwa**, F Ahmad (2019), “Statistical Machine Translation of Indian Languages: A Survey”, Neural Computing and Applications, Volume 31, Issue 7, pp. 2455-2467 (IF = 4.664)
- N I Ratyal, I A Taj, **U I Bajwa**, M Sajid (2018), “Pose and Expression Invariant Alignment based Multi-View 3D Face Recognition”, KSII Transactions on Internet and Information Systems, Volume 12, No.10, pp. 4903-4929 (IF = 0.452)
- M Sajid, I A Taj, **U I Bajwa***, N I Ratyal (2018), “Facial Asymmetry-Based Age Group Estimation: Role in Recognizing Age-Separated Face Images”, Journal of Forensic Sciences, Volume 63, No.6, pp. 1727-1749 (IF= 1.127)
- A. Sikandar, W. Anwar, **U. I. Bajwa**, X. Wang, M. Sikandar, L. Yao, Z. L. Jiang, Z. Chunkai (2018), “Decision Tree Based Approaches for Detecting Protein Complex in Protein Protein Interaction Network (PPI) via Link and Sequence Analysis”, IEEE Access, 6(1), 2018, pp.22108-22120 (IF= 3.244)
- A Hannan, A E Bajwa, S Riaz, U Arshad, S Saleem, **U I Bajwa** (2018), “In vitro Salmonella Typhi Biofilm Formation on Gallstones and its Disruption by Manuka Honey”, Pakistan Journal of Pharmaceutical Sciences 31(1), 2018, pp.129-135 (IF= 0.682)
- **U I Bajwa***, A A Shah, M W Anwar, G Gilanie, A E Bajwa (2018), “Computer-Aided Detection (CADE) System for Detection of Malignant Lung Nodules in CT Slices – A key for Early Lung Cancer Detection ”, Current Medical Imaging Reviews, Volume 14, No. 3, 422 - 429(8), 2018 (IF = 0.613)
- G Gilanie, H Ullah, M Mehmood, **U I Bajwa***, Z Habib (2018), “Colored Representation of Brain Gray Scale MRI Images to potentially underscore the variability and sensitivity of images”, Current Medical Imaging Reviews, Volume 14, No. 4, 555 - 560, 2018 (IF = 0.613)
- G Gilanie, **U I Bajwa***, M M Waraich, Z H, H Ullah, M Nasir (2018), “Classification of normal and abnormal brain MRI slices using Gabor texture and support vector machines”, Signal Image and Video Processing, 12(3), 2018, 479-487 (IF = 1.102)
- Ubaid Ur Rahman, Allah Bux Sargano, **Usama Ijaz Bajwa** (2017), “Android-Based Verification System for Banknotes”, Journal of Imaging, 3(4), 54 (ESCI)
- M Sajid, I A Taj, **U I Bajwa***, N I Ratyal (2016), “The Role of Facial Asymmetry in Recognizing Age-Separated Face Images”, Computers and Electrical Engineering, Volume 54, 2016, pp. 255-270 (IF = 0.992)
- S Ayubi, **U I Bajwa***, M W Anwar (2015), “Super-Resolution Based Enhancement of Cardiac MR Images”, Current Medical Imaging 11(2), 105-113. (IF = 1.059)
- N I Ratyal, I A Taj, **U I Bajwa***, M Sajid (2015), “3D Face Recognition Based on Pose and Expression Invariant Alignment”, Computers and Electrical Engineering, Volume 46, 2015, pp. 241-255 (IF = 0.992)
- S.A.Khan, Waqas Anwar, **U.I.Bajwa**, X. Wang (2015), “Template Based Affix Stemmer for a Morphologically Rich Language”, The International Arab Journal of Information Technology 12(2), 146-154. (IF = 0.39)
- M S Sarfraz, N K Tripathi, F S Faruque, **U I Bajwa**, A Kitamoto, M Souris (2014) “Mapping urban and peri-urban breeding habitats of Aedes mosquitoes using a fuzzy analytical hierarchical process based on climatic and physical parameters”, Geospatial Health 8(3), pp. 685-697, (IF = 1.00)

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- Akbar H, Hayat K, Haq Nu, **Bajwa UI** (2014), "Bilateral Symmetry Detection on the Basis of Scale Invariant Feature Transform", PLoS ONE 9(8): e103561. doi: 10.1371/journal.pone.0103561. (IF = 3.73)
 - Rehman Z, Anwar W, **Bajwa UI***, Xuan W, Chaoying Z (2013), "Morpheme Matching Based Text Tokenization for a Scarce Resourced Language", PLoS ONE 8(8): e68178. doi: 10.1371/journal.pone.0068178. (IF = 4.092)
 - **U.I.Bajwa***, I.A.Taj, M.W.Anwar, X. Wang (2013), "A Multifaceted Independent Performance Analysis of Facial Subspace Recognition Algorithms", PLoS ONE 8(2): e56510. doi: 10.1371/journal.pone.0056510. (IF = 4.092)
 - **U.I.Bajwa***, I.A.Taj, M.W.Anwar, "A unified classifier for robust face recognition based on combining multiple subspace algorithms", Optic Communications, Volume 285, Issues 21-22, 2012, pp. 4324-4332. (IF = 1.486)
 - **U.I.Bajwa***, I.A.Taj, Z.E.Bhatti, "A Comprehensive Comparative Performance Analysis of Laplacianfaces and Eigenfaces for Face Recognition", The Imaging Science Journal, Volume 59, Number 1, February 2011, pp. 32-40. (IF = 0.575)
 - **U.Bajwa***, R.Vardasca, F Ring, P Plassmann "A comparison of Boundary Detection Techniques to Improve Image Analysis in Medical Thermography", The Imaging Science Journal, Volume 58, Number 1, February 2010, pages 12-19. (IF = 0.575)
 - Vardasca R., **Bajwa U.**, "Segmentation and Noise Removal on Thermographic Images of Hands", Thermology International, vol 18, no.2, 2008, p.99-104.
 - Fareena Naz, Waqas Anwar, **U.I.Bajwa**, E.U.Munir "Urdu Part of Speech Tagging using Transformation Based Error Driven Learning", World Applied Sciences Journal, Vol.16, No.03, PP: 437-448, 2012, (Indexed by: ISI)
 - Rakhshanda Yousaf, Waqas Anwar, **U.I.Bajwa**, A.N.Khan "Percentage Discounting: A New Good Turing Smoothing Technique" Research Journal of Applied Sciences, Engineering and Technology, Vol.04, No.08, PP: 902-905, 2012, (Indexed by: ISI)

CONFERENCE PUBLICATIONS:

- Sareya Qayyum, Nimra Aziz, Muhammad Waqas Anwar and Usama Ijaz Bajwa, "Comparison of Parsers Dealing with Text Ambiguity in Natural Language Processing", in proceedings of 7th International Conference on Language and Technology, PP: 29-35, 19th - 21st February, 2020, UET, Lahore, Pakistan
- Khurram Ejaz, Mohd Shafy Mohd Rahim, Usama Ijaz Bajwa, Nadim Rana and Amjad Rehman, "An Unsupervised Learning With Feature Approach for Brain Tumor Identification and Segmentation Using Magnetic Resonance Imaging", in Proceedings of 9th International Conference on Bioscience, Biochemistry and Bioinformatics (ICBBB 2019), Singapore
- F Ahmad, A Sadiq, M Enriquez A.M., W Anwar, U I Bajwa, M Naseer, S A Khan, "Component based Architecture for the Control of Crossing Regions in Railway Networks", in Proceedings of the 16th IEEE International Conference on Machine Learning And Applications IEEE ICMLA 2017, PP:540-545, December 18-21, 2017, Cancun, Mexico
- H. Ahmed, M. Umair, A. Murtaza, U. I. Bajwa, R. Vardasca, "Multi Spectral Face Recognition System", in Proceedings of the VI ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing: VipIMAGE 2017 conference, PP:983-997, October 18-20, 2017, Porto, Portugal
- Naem I. Ratyal, Imtiaz Ahmad Taj, Usama Ijaz Bajwa, M.Sajid, Mirza Jabbar A. Baig and Faisal M. Butt, "3D Face Recognition based on Region Ensemble and Hybrid Features", in Proceedings of the International Conference on Computing, Electronic and Electrical Engineering (ICE Cube), PP: 293-300, April 11-12, 2016, Quetta, Pakistan
- N Khan, Waqas Anwar, U.I Bajwa, N. Durrani "English to Urdu Hierarchical Phrase-based Statistical Machine Translation" Proceedings of the IJCNLP-13 Workshop on South and Southeast Asian Natural Language Processing (WSSANLP), 2013, PP: 72-76, Nagoya, Japan
- S. Iqbal, Waqas Anwar, U.I. Bajwa, Z. Rehman "Urdu Spell Checking: Reverse Edit Distance Approach" Proceedings of the IJCNLP-13 Workshop on South and Southeast Asian Natural Language Processing (WSSANLP), 2013, PP: 58-65, Nagoya, Japan
- S.A.Khan, Waqas Anwar, U.I.Bajwa, X. Wang "A Light Weight Stemmer for Urdu Language: A Scarce Resourced Language" Proceedings of the COLING-12, 3rd Workshop on South and Southeast Asian Natural Language Processing (WSSANLP), PP: 69-78, 2012, Mumbai, India
- F. Jahangir, Waqas Anwar, U.I.Bajwa, X. Wang "N-gram and Gazetteer List Based Named Entity Recognition for Urdu: A Scarce Resourced Language" Proceedings of the COLING-12, 10th Workshop on Asian Language Resources (ALR), PP: 95-104, 2012, Mumbai, India
- Z. Zhang, X. Wang, Waqas Anwar, U.I.Bajwa "Two Problems of Circle in Image", 10th International Conference on Frontiers of Information Technology, PP: 91-95, 2012, Islamabad, Pakistan
- M Ghaffoor, U Bajwa, I A Taj, "Fuel Nozzle Spray Pattern Classifier", 9th International Conference on Frontiers of Information Technology (FIT 2011), PP: 303-307, 2011, Islamabad
- Sajjad A.Khan, Waqas Anwar, U.I.Bajwa "Challenges in Developing a Rule based Urdu Stemmer" Proceedings of the IJCNLP-11 Workshop on South and Southeast Asian Natural Language Processing (WSSANLP), PP: 46-51, 2011, Thailand

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FELLOWSHIPS

- Higher Education Commission PhD Scholar
- Higher Education Commission fellowship for the International Research Support Initiative Program

AWARDS

- **Best Teacher Award (2017)**
- **CIIT Research Productivity Awards (2011, 2012, 2013, 2014, 2015, 2016, 2017)**
- Was awarded a scholarship from Ministry of Science & Technology (MoST) Pakistan and 8th in the test held for this scholarship 2000.

PERSONAL DETAILS

Date of Birth: March 2nd, 1977

Marital Status: Married

Languages I speak: Punjabi, Urdu, English, Arabic fluently & a bit of German & Spanish

INTERESTS / HOBBIES

Philatelist, Numismatist, Swimmer, Trekker.

REFERENCES

Prof. Dr. Imtiaz Ahmad Taj
Dean, Faculty of Engineering,
Capital University of Science and Technology,
Islamabad, Pakistan
imtiyaztaj@cust.edu.pk

Dr. Peter Plassmann
Reader, Faculty of Computing, Engineering and Science,
University of South Wales,
Wales, UK
peter.plassmann@southwales.ac.uk