Prof. Dr. Usama Ijaz Bajwa

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Executive Academic Curriculum Vitae

EXECUTIVE SNAPSHOT

23+ years academic, research and industry leadership experience. Dean, Faculty of Computing, Lahore University of Biological and Applied Sciences (UBAS). Former Tenured Professor, COMSATS University Islamabad; former Group Head Product and Engineering Manager (ML), Persivia. Research funding exceeding PKR 49 million. 60+ journal publications.

PROFESSIONAL PROFILE

Academic leader, AI researcher, technology executive and Certified Entrepreneurial Coach with expertise in AI, Machine Learning, Computer Vision, Medical Imaging, NLP, Biometrics and Video Analytics.

CAREER HIGHLIGHTS

Lecturer to Tenured Professor progression at COMSATS; Dean, Faculty of Computing, UBAS; FIT Program Chair (2014–2024); Associate Head of Department; Head of MPVI and ISIP research groups; Best University Teacher Award winner.

HONORS & DISTINCTIONS

Best University Teacher Awards (2021–2023), Best Teacher Award 2017, Research Productivity Awards, NVIDIA Academic Grant, HEC Fellowships.

LEADERSHIP PORTFOLIO

Institutional Leadership, Academic Leadership, Research Leadership, Industry Leadership and Community Leadership.

RESEARCH EXPERTISE

AI, ML, Computer Vision, Medical Imaging, Video Analytics, Biometrics, Information Security, NLP and Agri Informatics.

EDUCATION

PhD CASE/UET Taxila (2013); MS CASE/UET Taxila (2006); MSc Hamdard University (2001); BSc Punjab University (1998).

ACADEMIC APPOINTMENTS

Dean, Faculty of Computing, UBAS (2026–Present); Tenured Professor, COMSATS University Islamabad (2023–2026), Tenured Associate Professor (2019–2023), Assistant Professor (2011–2019), Lecturer/Assistant System Analyst (2003–2011).

ACADEMIC LEADERSHIP & ADMINISTRATION

Associate Head, Graduate Program Coordinator, BSCS Program Head, CIMUN Chairperson, Faculty Advisor CBS, FIT Program Chair.

INSTITUTION BUILDING & STRATEGIC INITIATIVES

Leadership as Dean in establishing UBAS's Faculty of Computing; research groups, graduate programs, FIT leadership, Pak-China Business Forum, industry engagement and student development initiatives.

EXECUTIVE & INDUSTRY LEADERSHIP
Group Head Product and Engineering Manager (AI) at Persivia; APIBS Team Lead; Technical Consultant; Visiting Researcher; Co-Founder, Technology Nucleus Pvt Ltd and Agriasan Pvt Limited.

RESEARCH LEADERSHIP
Led MPVI and ISIP research groups; supervised extensive graduate research across AI, CV, Medical Imaging and NLP.

RESEARCH FUNDING & INFRASTRUCTURE
NCBC Video Analytics Lab PKR 43.284M; NRPU PKR 6M; NVIDIA Grant; IGNITE projects.

RESEARCH IMPACT & SCHOLARLY CONTRIBUTIONS
60+ journal publications, international collaborations, healthcare AI, surveillance analytics, NLP and biometrics research.

GRADUATE RESEARCH SUPERVISION
Multiple completed and ongoing PhD and MS theses across AI, Medical Imaging, Video Analytics and NLP.

STUDENT INNOVATION & ENTREPRENEURSHIP
Mentorship of award-winning projects including Wheat Guard, Semantic Labelling of HSR Images, Spectre, ARIA and Sentinel.

CONFERENCE LEADERSHIP
FIT Program Chair (2014–2024), technical committees, conference organization and international academic leadership.

INVITED TALKS & PROFESSIONAL VISIBILITY
Keynotes on AI Wave, Generative AI, Brain Tumor Segmentation, Research Writing and Entrepreneurship.

ACADEMIC SERVICE, GOVERNANCE & NATIONAL CONTRIBUTIONS
NCEAC Evaluator, Board memberships, Academic Councils, Selection Boards, Thesis Evaluation and AIEDU leadership.

PUBLICATIONS & SCHOLARLY OUTPUT
Journal IF total 176.85; publications spanning AI, Healthcare AI, Computer Vision, NLP, Biometrics and Security.

FELLOWSHIPS & PROFESSIONAL MEMBERSHIPS
HEC Fellowships, PEC Registered Engineer, IEEE Member, ACU Member.

LANGUAGES & INTERESTS
English, Urdu, Punjabi, Arabic; working knowledge of German and Spanish. Interests include philately, numismatics, swimming, trekking and travel.

REFERENCES
Professional and academic references available upon request.

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website: www.usamaijaz.com
https://scholar.google.com/citations?user=lGWptLcAAAAJ&hl=en
https://www.linkedin.com/in/usamabajwa/

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 2024 to August 2025:
Group Head of Product, Persivia Inc., Pakistan
Engineering Manager, Machine Learning Team, Persivia Inc., Pakistan (www.solitontechnologies.com).

Responsibilities and Achievements (Head of Product):

- Team Leadership & Culture
  - Led a cross-functional product organization of Product Owners and Business Analysts, fostering a collaborative, innovative, and data-driven culture.
  - Held near-daily syncs to surface and resolve blockers across Product, Development, QA, and Accounts.
  - Mentored and onboarded new team members, providing ongoing coaching and career development support.
- Vision & Strategy
  - Defined and evangelized Persivia's product vision: leveraging technology, platform capabilities, data, and AI-driven insights to maximize client value.
  - Developed and maintained a rolling five-month product roadmap to reinforce Soliton's position as a global leader in healthcare.
- Roadmap & Delivery Management
  - Ensured timely and accurate delivery of all roadmap-driven initiatives, overseeing day-to-day execution across all teams.
  - Synced cross-team dependencies, tracked deliverables, and presented roadmap progress to C level.
  - Compiled and refined feature epics—detailing descriptions, level of effort, targeted delivery month, and business impact—to form the foundation of each planning cycle.
- Metrics, Governance & Quality
  - Established comprehensive productivity metrics (Basic and Intermediate) across teams, including:
  - Roadmap Management: Major Reprioritizations, Scope/Timing Changes, On-Time Delivery Rate, Rollbacks, Feature Velocity: # Features Delivered, Adoption Rate, Requirements: # Epics & Stories, Quality Score, Time to Insight,
  - Defined formal metric definitions and enabled Jira field configurations for automated data capture.
  - Audited BA-created stories, deployed a standardized story-writing checklist, and guided teams on required Jira fields to support traceability and test-case automation.
- Governance, Training & Process Enablement
  - Delivered targeted training on BA governance and story quality, reducing requirement rework and failed stories.
  - Led Jira process enhancements: enforced required fields in epics/stories, tracked test-case automation, and provided regular adoption updates.
  - Instituted continuous discovery processes—capturing average time to insight—and aligned requirements delivery with business impact.
- Knowledge Centralization & Documentation
  - Developed a centralized Product Knowledge Hub housing weekly meeting minutes, Statement of Work templates, test automation reports, and other key artifacts, accessible to all stakeholders.
  - Maintained up-to-date documentation on roadmap changes, metric dashboards, and governance practices.
- Operational Excellence & Stakeholder Engagement

- Actively managed daily operations, driving execution, unblocking issues, and keeping roadmap milestones on track.
- Regularly reviewed performance: Sprint Burndown, Roadmap Adherence, Time/Scope/Cost Variance—and adjusted plans proactively to meet business objectives.

Responsibilities and Achievements (Engineering Manager, Machine Learning Team):

- Team Leadership & Strategy
  - Provided direction and mentorship to a team of Machine Learning Engineers, guiding technical decisions and career growth.
  - Aligned the team's ML initiatives with the company's product vision and strategic objectives, and championed a long term technology roadmap.
  - Cultivated strong cross functional partnerships with Product, Data Engineering, DevOps, and QA, ensuring smooth collaboration and hand offs.
- Project Delivery & Technical Excellence
  - Oversaw the team's end to end delivery of ML projects-from initial research and prototyping through to production deployment-ensuring adherence to coding standards, testing protocols, and performance SLAs.
  - Enabled the implementation of input/output guardrails and automated testing frameworks across services to bolster model reliability and data integrity.
- Query Builder Development
  - Guided the team in building count & trend query capabilities, nested filter support (AND/OR), GV mechanism enhancements, and JSON/SQL schema updates.
  - Supervised experiments with a multi agent system and led the overhaul of the GV cache for high throughput performance.
  - Facilitated the creation of automated end to end testing scripts using JSON filters to validate functionality across UATML and PopHealthDemo environments.
- Query Builder: Chatbot Integration
  - Steered R&D efforts on a chatbot driven query interface, including hallucination mitigation, table selection tooling, and RAG powered retrieval.
  - Coordinated the development of a Streamlit front end and Django back end, ensuring the team delivered an intuitive, interactive UI.
  - Directed feature coverage validation and the integration of RAG pipelines to marry conversational context with structured data access.
- Remote Patient Monitoring SMS Agent
  - Led the design and prototyping of an SMS based AI agent, overseeing input categorization, prompt template creation, and architecture validation.
  - Managed demo readiness activities, including test case definition, API development coordination, and end to end response validation.
- Clinical Data Extraction
  - Oversaw the team's research into FHIR JSON standards and LLM integration, guiding the extension of the pipeline to ingest images and PDFs.
  - Directed the build out of a generic extraction framework covering Medications, Allergies, Demographics, Vitals, Procedures, Immunizations, Labs, and Problems.
  - Supervised the merging of McLaren and CCDA modules, the automation of FHIR output scheduling, and iterative prompt enhancements to correct OCR and interpretation errors.
  - Facilitated benchmarking of LLAMA 3.1 vs. 3.2 to inform model selection based on clinical extraction accuracy.
- Patient Level Insights Chatbot
  - Championed the architectural design for a patient centric insights chatbot, evaluating VectorDB + RAG versus similarity based approaches.
  - Directed engineering of Text to SQL agents and supervised updates to the CareAI database schema.
  - Coordinated test case development, API integration, and prompt engineering efforts, and oversaw RAG pipeline updates for the chatbot's knowledge store.
- Process Optimization & Governance
  - Established standardized code review protocols and data workflows.
  - Instituted routine "health checks" to monitor model drift, inference latency, and data quality metrics.
  - Promoted a culture of continuous discovery through spike experiments and cross team hackathons, accelerating innovation while reducing technical debt.

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.

ENTREPRENEURIAL EXPERIENCE

2008 to 2011:
Co-Founder, Technology Nucleus Pvt Ltd

Responsibilities and Achievements:

- Worked on biometric systems for large scale applications, match on card technology, on board diagnostics protocols, video encoder implementations from standards, and other biometric and automation solutions.

Two years:
Co-Founder, Agriasan Pvt Limited

Responsibilities and Achievements:

- Developed an online platform connecting farmers, agriculture university professors, researchers, students, and suppliers of fertilizers and machinery, serving as a portal for guidance, marketing, and exchange of services.

TEACHING / RESEARCH EXPERIENCE

July 2026 to date

Dean, Faculty of Computing, Lahore University of Biological and Applied Sciences (UBAS), Lahore.
https://ubas.edu.pk

- Leading the establishment of UBAS's first computing programs: BS Computer Science, BS Artificial Intelligence, and BS Data Science, launching Fall 2026.
- Overseeing curriculum design and accreditation alignment with HEC and NCEAC standards.
- Leading faculty recruitment and laboratory/infrastructure development for the new Faculty.
- Shaping the Faculty's strategic direction, with an emphasis on applying computing and AI to real-world healthcare and applied-science problems, drawing on UBAS's institutional strength in health sciences.
- Led the Faculty of Computing through the National Computing Education Accreditation Council Zero Visit for the BS Computer Science, BS Artificial Intelligence and BS Data Science programs, conducted by Prof. Dr. Qaisar Durrani on 4th September 2026.
- Established international academic partnerships through Memorandums of Understanding between the Faculty of Computing and the School of Information Engineering, Suqian University (18th September 2026), and the School of Electronic Engineering, Xidian University (22nd September 2026, signed with Prof. Cao Zeng).
- Delivered sessions to five faculties at UBAS, introducing the work of the Faculty of Computing and exploring avenues for interdisciplinary collaboration.
- Teaching Ethics in Technology, a two credit hour course, to first semester undergraduate students, and designed the course handbook.
- Certified Entrepreneurial Coach; conducting workshops and delivering talks on AI, entrepreneurship, and academia-industry collaboration.

April 2015 to June 2026

Tenured Professor (Department of Computer Science) (May 2023 – June 2026)
Tenured Associate Professor (Department of Computer Science) (April 2019 – May 2023)
Assistant Professor (Department of Computer Science) (July 2011 - April 2019) / Associate Head of the Department(Aug 2017 – Jan 2021), 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, 2014-2024) www.fit.edu.pk
- Chairperson COMSATS International Model United Nation (CIMUN 2019)
- Faculty Advisor, Character Building Society (CBS), Formed on the request of National Accountability Bureau (NAB).
- Convener (Local Industry Liaison Committee, B2B Meetings Committee), Pak China Business Forum – Industrial Expo, 2019. www.pcbf.org.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
- 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)
- 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 & Advance 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

- NVIDIA Academic Hardware Grant (February, 2022) worth **USD 2400**
- **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 PKR 6 Million** for Research Project No 15604, entitled "A Multi-Biometric Access Control System (MBACS) for Highly Secured Environment" awarded under the National Research Program for Universities (NRPU) approved by Higher Education Commission (HEC) of Pakistan (CO PI) 2022.
- Funding of FYP projects under the NGIRI program of IGNITE (Formerly National ICT R&D Fund) 2020.
- Funding of FYP project under the NGIRI program of IGNITE (Formerly National ICT R&D Fund) 2018.

TRAININGS

- Higher Education Commission-British Council Principal Investigator's Research Capacity building program for Principal Investigators (March 7-11, 2022, Islamabad)
- Training the coaches for the EU Erasmus+ funded project, Transforming Academic Knowledge to Develop Entrepreneurial Universities in Pakistan (TAKE UP)", EU project ID: 609957-EPP-1-2019-1-DE-EPPKA2-CBHE-JP (July 25-29, 2022, Saarbrucken, Germany)
- Five Day International Faculty Development Programme on "Frontiers of Generative AI and Intelligent Data Analytics for Digital Transformation", organized by Astana IT University, Kazakhstan (April 20-24, 2026), Certificate of Participation

RESEARCH AREAS EXPLORED

- Biometrics (Face, Fingerprint, and Iris Recognition)
- Video Analytics
- Medical Image Processing
- Natural Language Processing
- Agri Informatics

COURSES/WORKSHOPS/CONFERENCES

- Moderated a panel discussion on "Beyond the Demo: What It Takes for Artificial Intelligence to Matter" at the closing ceremony of the 4th International AI Championship, organized by the Artificial Intelligence Education Foundation, Lahore, Pakistan, 24th October 2026
- Delivered an invited talk on "A multimodal digital human framework with emotion awareness for live human-AI interaction" at Xidian University, Xi'an, China, 22nd September 2026
- Delivered an invited talk on "LUMINA - An emotion aware multimodal digital human framework for realtime human-AI interaction" at Suqian University, Suqian City, China, 18th September 2026
- Delivered two guest lectures on digital image processing techniques, one to undergraduate students and one to graduate students, in Prof. Fan Zhang's course on Big Data for Ocean Technologies, Zhejiang University, Zhoushan City, China, 16th September 2026
- Presented on "Emerging Trends in E-Learning, Digital and Interactive Technologies for Learning in Pakistan" in the virtual session "Technology Enhanced Learning: the Experience of ECO Member Countries" at the 19th National and 13th International Conference on e-Learning and e-Teaching (ICeLeT 2026), organized by the Institute for Standards and Quality, the ECO Science Foundation and the e-Learning Association of Iran, held in Shiraz, Iran, participated online, 27th August 2026
- Delivered a keynote address "The AI Wave" at the International Conference on Computing & Innovation (ICCI 2025) organized by Riphah International University, 8th December 2025.
- Delivered a talk on "Mastering Research Writing & Ethical Scholarship" for faculty of computing, Lahore Garrison University, 5th August, 2025
- Featured guest on the Persivia Perspective podcast, hosted by Nidah Shahid, discussing mindsets shaping Artificial Intelligence adoption in healthcare and how strategic, measured adoption leads to lasting success, 13th June 2025
- Delivered talks on "Effective Teaching and Professionalism" for faculty members across all departments at COMSATS University Islamabad, Lahore Campus (23-24 April, 2025)
- Delivered a talk on "Professionalism" for non-faculty staff at COMSATS University Islamabad, Lahore Campus (22nd April, 2025)
- Featured guest on the Persivia Perspective podcast discussing Gartner's Top Technologies for Healthcare Providers in 2025 and the growing role of Artificial Intelligence in healthcare, 3rd March 2025
- Appeared as an Artificial Intelligence expert in a live interview on the Geo Pakistan Morning Show, Geo News, on the importance and challenges of Artificial Intelligence for Pakistan in general and the education sector in particular, 7th February 2025
- Appeared as an Artificial Intelligence expert in a Geo News segment on the International Day of Education, discussing the advantages and disadvantages of Artificial Intelligence in teaching and education, 24th January 2025
- Delivered keynote speech on Generative Artificial Intelligence at the 5th International Conference of Computer Science and Allied Technologies (ICCAST-2023), Lahore Garrison University, 22nd November, 2023
- Delivered lectures on "Entrepreneurial Coaching: Process and Skills", "Evaluating Business Ideas" and "Govt. of Pakistan's Initiatives/Projects for the Promotion of Entrepreneurship" during the Transforming Academic Knowledge to Develop Entrepreneurial Universities in Pakistan (TAKEUP) Faculty Training by Master Trainers for Entrepreneurial Coaching given to faculty members from 7 different universities of Pakistan, COMSATS University Islamabad, Lahore Campus, 8th November and 20th November 2023.
- Conducted a workshop on "Crafting Exceptional Research Articles and Research Proposals" for the faculty members of Computer Science, Software Engineering and Information Technology departments at Lahore Garrison University. Organized by LGU Academics Branch and Faculty of Computer Science, Lahore Garrison University, 15th September 2023
- Delivered lectures on "Entrepreneurial Coaching: Process and Skills", "Evaluating Business Ideas" and "Govt. of Pakistan's Initiatives/Projects for the Promotion of Entrepreneurship" during the Transforming Academic Knowledge to Develop Entrepreneurial Universities in Pakistan (TAKEUP) Faculty Training by Master Trainers for Entrepreneurial Coaching, COMSATS University Islamabad, Lahore Campus, 17-21 July, 2023
- Delivered keynote speech on Brain Tumour Image Segmentation at 1st International Conference on Machine Perception and Artificial Intelligence (ICMPAI-2022), Islamia University Bahawalpur, 17th June, 2022

- Program Co-Chair, 21st International Conference on Frontiers of Information Technology (FIT 2024)
- Program Chair, 20th International Conference on Frontiers of Information Technology (FIT 2023)
- Program Chair, 19th International Conference on Frontiers of Information Technology (FIT 2022)
- Program Chair, 18th International Conference on Frontiers of Information Technology (FIT 2021)
- Delivered a talk on Digital Image Processing at IEEE Computer Society Chapter Abbottabad, 27th December 2020, COMSATS University Islamabad, Abbottabad Campus.
- Delivered a talk on Image processing applications at Microsoft Learn Student Ambassador program, 9th October 2020, COMSATS University Islamabad, Lahore Campus.
- Delivered a talk on "Automated Anomaly Recognition using Deep Net Architecture", 31st August 2020 at International Symposium on Multimodal Sensing and Information Processing, Xidian University, China
- 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 Fingerprint 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, 2019. (Completed)
- Mubbashar Saddique, "Robust Video Forgery Detection and Localization using Artificial Intelligence Techniques", COMSATS University Islamabad, Lahore Campus, 2021. **(Co Supervisor)** (Completed)
- Khurram Ejaz, "Image Segmentation Method for Brain Tumor Detection using MRI Imaging", Universiti Teknologi Malaysia, 2021. **(Co Supervisor)** (Completed)
- Rafaqat Alam Khan, "A Robust Framework for the Detection of Fire and Smoke in Complex Surveillance Environments using Deep Learning", COMSATS University Islamabad, Lahore Campus. (Completed)
- Gulshan Saleem, "Anomaly Detection in Low-Quality Surveillance Videos", COMSATS University Islamabad, Lahore Campus. (Completed)
- Yasar Mehmood, "A Framework for the Diagnosis and Prognosis of Brain Tumor Using Deep Learning", COMSATS University Islamabad, Lahore Campus. (Completed)
- Muhammad Owais Khan, "Efficient Self-Supervised Dino-Based Hybrid Framework for Brain Tumor Analysis in MRI Images", COMSATS University Islamabad, Lahore Campus. (In Progress)
- Nimra Shafiq, "A Unified Encoder-Decoder Deep Framework for Bilingual Video Captioning in Security Surveillance", 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. (Completed)
- Imran Zaman, "A Robust Deep Network based Multi Camera Multi Object Tracking", COMSATS University Islamabad, Lahore Campus. (Completed)
- Sareya Qayyum, "Rotation Invariant Disguised Facial Recognition using Deep Networks", COMSATS University Islamabad, Lahore Campus. (Completed)
- Ali Hussain, "Detection of Fire and Smoke from Video Sequences", COMSATS University Islamabad, Lahore Campus. (Completed)
- Muhammad Salman Ghauri, "Enhancing Crime Classification in Surveillance Videos for Real Time Monitoring", COMSATS University Islamabad, Lahore Campus. (Completed)
- Fatima Zulfiqar, "Individual Reidentification in Multi Camera Multi Object Environment", COMSATS University Islamabad, Lahore Campus. (Completed)
- Mughees Ahmad, "COVID 19 Detection from Multimodal Medical Images", COMSATS University Islamabad, Lahore Campus. (Completed)
- Rehan Raza, "Brain Tumor Segmentation using Self Learning", COMSATS University Islamabad, Lahore Campus. (Completed)
- Muhammad Mubeen, "A Robust Deep Networks Based Weed and Crop Classification System", COMSATS University Islamabad, Lahore Campus. (Completed)
- Hafiz Abdul Rehman, "A coverless text hiding based framework for encryption and decryption of text by generating anime characters using GAN", COMSATS University Islamabad, Lahore Campus. (Completed)
- Muhammad Sohaib Iqbal, "Classification of MGMT Promotor Methylation Status in Brain Tumor MR Images using Deep Learning", COMSATS University Islamabad, Lahore Campus. (Completed)
- Samia Akram, "Human Action Recognition in Low-Resolution Videos based on Spatio-Temporal Features", COMSATS University Islamabad, Lahore Campus. (Completed)
- Rimsha Shoukat, "A Robust Attentional-based 3D CNN model for Fire and Smoke Detection from Videos", COMSATS University Islamabad, Lahore Campus. (Completed)
- Seemab Ayub, "Multiclass Weeds and Crops Classification and Segmentation Using Deep Learning", COMSATS University Islamabad, Lahore Campus. (Completed)
- Muhammad Abrar, "Video-Based Early Detection of Autism Spectrum Disorder Using a Hybrid 3D CNN and Vision Transformer Architecture", 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)
- 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**)
- 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 (Completed) (**First Position Spring 2020**)
- Ramsha Rasheed, Bilal Ahmed, Aisha, "Charades", COMSATS University Islamabad, Lahore Campus (Completed)
- Nayab Amir, Noor e Eman, "Game for Dyslexics", COMSATS University Islamabad, Lahore Campus (Completed)
- Waqas Ahmed, Hamza Sadiq, Ali Hassan, "AQI Predictor", COMSATS University Islamabad, Lahore Campus (Completed) (**Second Position Spring 2020**)
- Ifrah Tehleel, Nauman Akram, Jan Muhammad, "Surveilia", COMSATS University Islamabad, Lahore Campus (Completed) (**funded by National Grassroots ICT Research Initiative (2020-21)) (Third Position Fall 2020**)
- Faran Ayyaz, Tehreem Anjum, Faryal Khalid, "Live Bus", COMSATS University Islamabad, Lahore Campus (Completed) (**funded by National Grassroots ICT Research Initiative (2020-21))**
- Hamza Latif, Hassan Sharjeel, "Road Pulse", COMSATS University Islamabad, Lahore Campus (Completed) (**Third Position Fall 2020**)
- Zenia Kiran, Fareeha Liaqat, "TalkSee", COMSATS University Islamabad, Lahore Campus (Completed)
- Burhan Sabir, Muhammad Barakullah, Muhammad Saim, "Raven", COMSATS University Islamabad, Lahore Campus (Completed)
- Abdul Wasay, Muhammad Abidullah, Nida Tahir, "Panoptes", COMSATS University Islamabad, Lahore Campus (Completed) (**Third Position Fall 2021**)
- Nauman Umer, Ameer Hamza Naveed, "Rashcam", COMSATS University Islamabad, Lahore Campus (Completed) (**First Position Spring 2022**)
- Ali Ahmad, Muhammad Umair, Mohammad Wahaj Tariq, "Spectre", COMSATS University Islamabad, Lahore Campus (Completed) (**First Position Spring 2023**)
- Sania Sadaqat, Tania Zaheer, Hamna Khawar, "ARIA: Artificially Responsive Intelligent Agent", COMSATS University Islamabad, Lahore Campus (Completed) (**First Position Spring 2024**)
- Hammad Ali, Muhammad Ibrahim, Muhammad Omar Sarfraz, "Sentinel", COMSATS University Islamabad, Lahore Campus (Completed) (**First Poster Position Spring 2024**)
- Mushaim Khan, Amena Shahid, "SCRIBE: Securing Vision", COMSATS University Islamabad, Lahore Campus (Completed)
- M. Shamoil Aslam, M. Siddique Umar, Faizan Javed Ghumman, "SPECTER: AI Powered Assistant for Lawyers", COMSATS University Islamabad, Lahore Campus (In Progress)
- Abdur Rehman Zubair, Mehroz, Bushra Jabbar, "Sign Bridge: Realtime Sign Language Translation Mobile Application", COMSATS University Islamabad, Lahore Campus (In Progress)
- Shaafea Dawood, Mujtaba Haider, Ahmad Sheraz, "LUMINA: ", COMSATS University Islamabad, Lahore Campus (In Progress)

PUBLICATIONS

JOURNAL PUBLICATIONS: IF : 176.85

- R A Khan, **U I Bajwa***, R H Raza, M U Farooq, "Lightweight Spatio-Temporal Residual Neural Network and Transformer Architecture with Positional Gating for Video-Based Smoke and Fire Detection", Engineering Applications of Artificial Intelligence, Volume 169, 113996, (IF = 8.0)
- S. Ghauri, **U I Bajwa***, G Saleem, R H Raza, M W Anwar (2025)," SurveillanceNet: Spatio-Temporal Anomaly Identification in Surveillance Videos using Two-Stream CNN and LSTM", Multimedia Tools and Applications, Volume 84, pages 45871–45895, (IF = 3.0)
- R A Khan, **U I Bajwa***, R H Raza, M W Anwar (2025), "Fire and Smoke Detection using Two Stream Spatio-Temporal Network", Neural Computing and Applications, 37, 19523–19547, (IF = 4.5)
- Muhammad Sohaib Iqbal, **Usama Ijaz Bajwa***, Rehan Raza, Muhammad Waqas Anwar (2025), "Integrated brain tumor segmentation and MGMT promoter methylation status classification from multimodal MRI data using deep learning", Digital Health, https://doi.org/10.1177/20552076251332018, (Accepted), (IF = 3.3)
- R A Khan, **U I Bajwa***, R H Raza, M W Anwar (2025), "Beyond boundaries: Advancements in fire and smoke detection for indoor and outdoor surveillance feeds", Engineering Applications of Artificial Intelligence, https://doi.org/10.1016/j.engappai.2024.109855, 142, 109855, (IF = 7.5)
- Hashmi E, Altaf A, Anwar MW, Jamal MH, **Bajwa UI** (2025) BI-SENT: bilingual aspect-based sentiment analysis of COVID-19 Tweets in Urdu language. PLoS One 20(6): e0317562. https://doi.org/10.1371/journal.pone.0317562, (IF = 2.9)
- Y Mehmood, **U I Bajwa*** (2024), "Brain tumor grade classification using the ConvNext architecture", Digital Health, https://doi.org/10.1177/20552076241284920, (Accepted), (IF = 2.9)
- A Altaf, M W Anwar, M H Jamal, **U I Bajwa**, S Rani (2024), "Aspect Based Sentiment Analysis in Urdu Language: Resource Creation and Evaluation", Neural Computing and Applications, https://doi.org/10.1007/s00521-024-10145-x (Accepted), (IF = 4.5)

- H Ahmed, **U I Bajwa***, N I Ratyal, F Zhang, M W Anwar (2024),” Deception detection in videos using the facial action coding system”, Multimedia Tools and Applications, https://doi.org/10.1007/s11042-024-19153-4, (IF = 3.6)
- R Anam, M W Anwar, M H Jamal, **U I Bajwa**, I T Diez, E S Alvarado, E S Flores, I Ashraf (2024), “A deep learning approach for Named Entity Recognition in Urdu Language”, PLoS One, doi.org/10.1371/journal.pone.0300725 (IF = 3.7)
- G Saleem, **U I Bajwa***, R H Raza, F Zhang (2024), “Edge-Enhanced TempoFuseNet: A Two-Stream Framework for Intelligent Multiclass Video Anomaly Recognition in 5G and IoT Environment”, Future Internet, 16(3), 83, doi.org/10.3390/fi16030083 (IF = 3.4)
- Y Mehmood, **U I Bajwa***, M W Anwar (2024), “Brain tumor grade classification using multi-step pre-training”, International Journal of Imaging Systems and Technology, Vol 34, Issue 2, doi.org/10.1002/ima.23008 (IF =3.3)
- H A Rehman, **U I Bajwa***, R Raza, S Alfarhood, M Safran, F Zhang (2024), “Leveraging Coverless Image Steganography to Hide Secret Information by Generating Anime Characters Using GAN”, Expert Systems with Applications, 248, 123420 (IF = 8.5)
- Muhammad Imran Zaman, **Usama Ijaz Bajwa***, Gulshan Saleem, Rana Hammad Raza (2024), “A Robust Deep Networks based Multi-Object Multi-Camera Tracking System for City Scale Traffic”, Multimedia Tools and Applications, 83, 17163–17181 (2024). https://doi.org/10.1007/s11042-023-16243-7 (IF = 3.6)
- R Aziz, M W Anwar, M H Jamal, **U I Bajwa**, Á K Castilla, C Ucrios, E B Thompson, I Ashraf (2023), “Real Word Spelling Error Detection and Correction for Urdu Language”, IEEE Access, vol. 11, pp. 100948-100962, 2023, doi: 10.1109/ACCESS.2023.3312730 (IF = 3.9)
- Fatima Zulfiqar, **Usama Ijaz Bajwa***, Rana Hammad Raza (2023), ”Multi-camera person re-identification using spatiotemporal context modelling”, Neural Computing and Applications, Vol 35, pp. 20117-20142 (IF = 6.0)
- Amna Altaf, Muhammad Waqas Anwar, Muhammad Hassan Jamal, **Usama Ijaz Bajwa** (2023), “Exploiting Linguistic Features for Effective Sentence-Level Sentiment Analysis in Urdu Language”, Multimedia Tools and Applications, 82, 41813–41839 (2023). https://doi.org/10.1007/s11042-023-15216-0 (IF = 2.577)
- Fatima Zulfiqar, **Usama Ijaz Bajwa***, Yasar Mehmood, “Multi-class classification of brain tumor types from MR Images using EfficientNets”, Biomedical Signal Processing and Control, https://doi.org/10.1016/j.bspc.2023.104777, Vol. 84, pp. 104777 (IF = 5.076)
- M. Ahmad, **U. I. Bajwa***, Y Mehmood, M. Anwar, “Lightweight ResGRU: A Deep Learning-Based Prediction of SARS-CoV-2 (COVID-19) and its Severity Classification using Multimodal Chest Radiography Images”, Neural Computing & Applications (24 Jan, 2023), https://doi.org/10.1007/s00521-023-08200-0, Vol 35, pp. 9637-9655 (IF = 5.102)
- Rehan Raza, **Usama Ijaz Bajwa***, Yasar Mehmood, Muhammad Waqas Anwar, Muhammad Hassan Jamal (Jan, 2023), " dResU-Net: 3D Deep Residual U-Net based Brain Tumor Segmentation from Multimodal MRI", Biomedical Signal Processing and Control, Volume 79, Issue 1, pp. 103861 (IF = 5.076)
- Ghulam Gilanie, **Usama Ijaz Bajwa***, Mustansar Mahmood Waraich, Muhammad Waqas Anwar, Hafeez Ullah(12, Jul, 2022), “An Automated and Risk Free WHO grading of Glioma from MRI Images using CNN”, Multimedia Tools and Applications, Volume 82, pp. 2857-2869 (IF = 2.577)
- R Khan, A Hussain, **U Bajwa***, R Raza, W Anwar (22 Dec, 2022), “Fire and Smoke Detection using Capsule Network”, Fire Technology, https://doi.org/10.1007/s10694-022-01352-w, pp. 581-594 (IF =3.605)
- Saleem, G., **Bajwa, U.I.*** & Raza, R.H. (20 Oct, 2022), “Toward human activity recognition: a survey”, Neural Computing & Applications. https://doi.org/10.1007/s00521-022-07937-4, pp.4145-4182 (IF = 5.102)
- Gulshan Saleem, **Usama Bajwa***, Rana Raza, Fayez Hussain Alqahtani, Amr Tolba, Feng Xia (14 Oct, 2022),”Efficient Anomaly Recognition Using Surveillance Videos”, PeerJ Computer Science, 8:e1117 https://doi.org/10.7717/peerj-cs.1117, (IF = 2.411)
- Amna Altaf, Muhammad Waqas Anwar, M. Hasan Jamal, Sana Hassan, **Usama Ijaz Bajwa**, Gyu Sang Choi, Imran Ashraf (20 Sep, 2022),” Deep Learning based Cross Domain Sentiment Classification for Urdu Language”, IEEE Access, Volume 10, pp. 102135-102146 (IF = 3.476)
- Muhammad Javaid Iqbal, **Usama Ijaz Bajwa***, Ghulam Gilanie, Muhammad Aksam Iftikhar, Muhammad Waqas Anwar (23 Apr, 2022), "Automatic Brain Tumor Segmentation from Magnetic Resonance Images using Superpixel-Based Approach", Multimedia Tools and Applications, Volume 81, pp. 38409-38427 (IF = 2.577)
- Waqas Ahmed, **Usama Ijaz Bajwa**, Muhammad Sajid, Muhammad Waqas Anwar (6 June, 2022), “Reduced Complexity and Optimized Face Recognition Approach based on Facial Symmetry”, Journal of Real-Time Image Processing, Volume 19, pp. 1225 (IF = 2.293)
- Naheed Akhtar, Mubbashar Saddique, Khurshid Asghar, **Usama Ijaz Bajwa**, Muhammad Hussain, Zulfiqar Habib (6 Jan, 2022), “Digital Video Tampering Detection and Localization: Review, Representations, Challenges and Algorithm”, Mathematics, Volume 10, Issue 2, pp. 168 (IF = 2.592)
- Romila Aziz, Muhammad Waqas Anwar, Muhammad Hassan Jamal, **Usama Ijaz Bajwa** (5 Aug, 2021), “A Hybrid Model for Spelling Error Detection and Correction for Urdu Language”, Neural Computing and Applications, Volume 33, pp. 14707-14721 (IF = 4.774)

- Haseeb Younis, Muhammad Waqas Anwar, Muhammad Usman Ghani, Aisha Sikandar, **Usama Ijaz Bajwa** (6 May, 2021), "A New Sequential Forward Feature Selection (SFFS) Algorithm for Mining Best Topological and Biological Features to Predict Protein Complexes from Protein Protein Interaction Networks (PPINs)", Interdisciplinary Sciences, Computational Life Sciences, Volume 13, Issue 3, pp. 371-388 (IF = 1.512)
- Ghulam Gilanie, **Usama Ijaz Bajwa***, Mustansar Waraich, Mutyyba Asghar, Rehana Kousar, Adnan Kashif, Rabab Aslam, Muhammad Qasim, Hamza Rafique (10 Feb, 2021), "Coronavirus (COVID-19) Detection from Chest Radiology Images using Convolutional Neural Networks", Biomedical Signal Processing and Control, Volume 66, pp. 102490 (IF = 3.137)
- Ghulam Gilanie, Nimra Nasir, **Usama Ijaz Bajwa**, Hafeez Ullah (17 Feb, 2021), "RiceNet: Convolutional Neural Networks Based Model to Classify Pakistani Grown Rice Seeds Types", Multimedia Systems, Volume 27, pp. 867-875 (IF = 1.935)
- Ramna Maqsood, **Usama Ijaz Bajwa***, Gulshan Saleem, Rana Hammad Raza, Muhammad Waqas Anwar (19 Feb, 2021), "Anomaly recognition from surveillance videos using 3D convolution neural network", Multimedia Tools and Applications, Vol. 80, Issue: 12, pp. 18693-18716 (IF = 2.313) 2.757
- Maimoona Rafiq, **Usama Ijaz Bajwa***, Ghulam Gilanie, Muhammad Waqas Anwar (16 Mar, 2021), "Reconstruction of Scene Using Corneal Reflection", Multimedia Tools and Applications, Vol. 80, Issue: 14, pp. 21363-21379 (IF = 2.313) 2.757
- Khurram Ejaz, Mohd Shafry Mohd Rahim, **Usama Ijaz Bajwa**, Huma Chaudhry, Amjad Rehman, Farhan Ejaz (13 August, 2020), "Hybrid Segmentation Method With Confidence Region Detection For Tumor Identification", IEEE Access, Vol. 9, pp. 35256-35278 (IF = 3.745) 3.367
- Ghulam Gilanie, **Usama Ijaz Bajwa***, Mustansar Mahmood Waraich, Muhammad Waqas Anwar (2020), "Risk-free WHO grading of Astrocytoma using Convolutional Neural Networks from MRI Images", Multimedia Tools and Applications, Vol. 80, Issue: 3, pp. 4295-4306 (IF = 2.313)
- Mubbashar Sadddique, Khurshid Asghar, **Usama Ijaz Bajwa**, Muhammad Hussain, Hatim A. Aboalsamh, Zulfiqar Habib (16 March, 2020), " Classification of Authentic and Tampered Video Using Motion Residual and Parasitic Layers", IEEE Access, Vol: 8, Issue: 1, pp. 56782-56797, (IF = 4.098)
- **U I Bajwa***, S Alam, N Haq, N I Ratyal, M W Anwar (2020),"Skin Disease Classification using Neural Network", Current Medical Imaging, Volume 16, Issue 6, 711 - 719, 2020 (IF = 0.533)
- Mubbashar Sadddique, Khurshid Asghar, **Usama Ijaz Bajwa**, Muhammad Hussain, Zulfiqar Habib (31 August, 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, (IF = 0.65)
- Ghulam Gilanie, **Usama Ijaz Bajwa***, Mustansar Mahmood Waraich, Zulfiqar Habib (December, 2019), "Automated and Reliable Brain Radiology with Texture Analysis of MRI and Cross dataset Validation", International Journal of Imaging Systems and Technology, Volume 29, Issue 4, pp. 531-538 (IF = 1.423)
- Ghulam Gilanie, **Usama Ijaz Bajwa***, Mustansar Mahmood Waraich, Zulfiqar Habib (September, 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 (1st July, 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)
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- **U.Bajwa***, R.Vardasca, F Ring, P Plassmann (2010) "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)
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- 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:

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FELLOWSHIPS

- Higher Education Commission PhD Scholar
- Higher Education Commission fellowship for the International Research Support Initiative Program
- Registered Engineer with Pakistan Engineering Council (PEC)
- Member IEEE
- Member Association of Commonwealth Universities (ACU)

AWARDS

- **Best University Teacher Award (Winner)(2023), across seven campuses of COMSATS University Islamabad**
- **Best University Teacher Award (Winner)(2022), across seven campuses of COMSATS University Islamabad**
- **Best University Teacher Award (First Runner Up)(2021), across seven campuses of COMSATS University Islamabad**
- **Best Teacher Award (2017), Department of Computer Science**
- **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.

PROFESSIONAL SERVICES

- **Certified Entrepreneurial Coach**, Take Up Project, EU Erasmus+ Program
- **Program Evaluator, National Computing Education Accreditation Council (NCEAC)**, Pakistan
- **Lifetime Registered Engineer**, Pakistan Engineering Council, Pakistan
- Director, Artificial Intelligence Education Foundation (AIEDU, www.aiedu.org.pk)

- Chairperson, Board of Studies, Faculty of Computing, Lahore University of Biological and Applied Sciences (UBAS), Pakistan
- Member, Board of Studies, Department of Computer Science, COMSATS University Islamabad, Pakistan
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- Member, Board of Studies, University of Education, Lahore
- Member, Board of Studies, Government College University, Lahore
- Member, Board of Advanced Studies and Research, Lahore Garrison University, Pakistan
- Member, Board of Advanced Studies and Research, University of Sialkot, Pakistan
- Member, Academic Council, Green International University, Pakistan
- Member, Board of Studies, Kinnaird College for Women University, Pakistan
- Subject Expert, Selection Board, University of the Punjab, Pakistan
- Subject Expert, Selection Board, Government College University Lahore, Pakistan
- Subject Expert, Selection Board, University of Gujrat, Pakistan
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- Subject Expert, Selection Board, FAST-National University, Lahore Campus, Pakistan
- Graduate Thesis Evaluator, Selection Board, FAST-National University, Lahore Campus, Pakistan
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- Graduate Thesis Evaluator, The Islamia University of Bahawalpur, Pakistan
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- Graduate Thesis Evaluator, FAST-National University, Chiniot-Faisalabad Campus, Pakistan
- Final Year Project evaluator of many universities.
- Expert, Self-Assessment (SAR) of Graduate Program, FAST-National University, Chiniot-Faisalabad Campus, Pakistan
- Technical Consultant, Soliton Technologies, Pakistan
- Technical Consultant, National Testing Service (NTS) of Pakistan

PERSONAL DETAILS

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

INTERESTS / HOBBIES

Philatelist, Numismatist, Swimmer, Trekker, Traveller

REFERENCES

Professional and academic references available upon request.