

TARIQ BASHIR, PHD

SENIOR MEMBER IEEE, ASSOCIATE PROFESSOR

CONTACT DETAILS

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CAREER SUMMARY

As an academician, researcher, and managing projects with two decades of experience, I have dedicated my career to academia, embodying a multifaceted role that merges teaching, research, and significant managerial responsibilities. My journey has been characterized by a commitment to leading diverse projects including modules, industrial projects, fostering academic excellence, and contributing extensively to both broader academic community and industry. In my tenure, I have managed administrative tasks, budgets, and supervised graduate students who are currently positioned in industry. My project management spans a wide array of research projects, curriculum development, institutional reforms, and managing student intakes. Over this period, I have cultivated an adeptness at balancing multiple projects simultaneously, optimizing resources, and fostering an environment conducive to creativity and productivity among team members. I have a track record of collaborating with stakeholders, forging partnerships, and engaging with external organizations to magnify the impact of projects and academic initiatives. Furthermore, I have extensive research and technical understanding in the field of Digital Image Processing, Computer Vision, Digital Image Watermarking, Artificial Intelligence, and Machine Learning. I have been a member of various technical committees. I also served as an In-charge Project Management Committee.

SKILLS SUMMARY

- Updated with current industry trends, technological advancements, and emerging practices within field of Electric Machines, Digital Image Processing, Computer Vision, Information Theory, and Pattern Recognition.
- Expert in managing project dynamics and providing mentorship to aspiring engineers and team workers.
- Adaptable to changing projects, educational landscapes, and leveraging digital tools.
- Proficient in understanding different image acquisition methods essential for manipulating digital images.
- Knowledge of programming languages (Python, MATLAB, C++) and relevant libraries.
- Practical experience in computer vision applications.
- Hand-on experience of integrating image processing algorithms into hardware systems (FPGA, GPUs, and embedded systems)
- Strong understanding and practical application of deep learning techniques, related architectures for object recognition in industrial settings such as augmented reality, autonomous vehicles, robotics, and healthcare.
- Acumen in applying computer vision solutions to address industry-specific challenges and requirements.
- Administrating undergraduate and graduate students' data and coordinating timely submission of thesis along with the presentation schedules.
- Served as a committee convener for managing research projects establishment and completion.

PROFESSIONAL EXPERIENCE

Duration	Designation	Institution	Job Responsibilities
April 2022 – Present	Associate Professor	COMSATS University Islamabad, Pakistan	<ul style="list-style-type: none">✓ Managing various administrative committees within the department.✓ Teaching and supervising both graduate and undergraduate students.✓ Conducting research and investigating current research trends relevant to the industrial requirements.
Oct 2009 – April 2022	Assistant Professor	COMSATS University Islamabad	<ul style="list-style-type: none">✓ Assisting committee heads and department head in completing various assigned duties.✓ Teaching and supervising both graduate and undergraduate students.✓ Research and collaboration in participation with the relevant research group head.

Jan 2007 — Sept 2009 (1 Year 9 Months)	Lecturer	COMSATS University Islamabad	<ul style="list-style-type: none"> ✓ Teaching and conducting undergraduate Labs. ✓ Learning of research methodologies and strengthening relevant engineering software learning under supervision of research group head.
Jan 2005 — Dec 2006 (2 Years)	Research Associate/ Teaching Assistant	COMSATS University Islamabad	<ul style="list-style-type: none"> ✓ Assisting professor in conducting labs. ✓ Conducting student tutorial sessions ✓ Collaborating with the department head to fulfill assigned departmental duties
Dec 2003 — Dec 2004 (1 Year)	Assistant Engineer	SWS Engineering, Peshawar	

EDUCATION

Degree with Completion Date	Discipline	Institution	Location
PhD (20 th July 2016)	Electrical Engineering	COMSATS Institute of Information Technology (CIIT), Islamabad	Islamabad
MS (30 th May 2009)	Computer Engineering	University of Engineering and Technology	Taxila
BS (23 rd August 2003)	Electrical Engineering	N.W.F-P University of Engineering and Technology	Peshawar

DISTINCTIONS AND HONORS

- **Selection Board Member** as Electrical Engineering Subject Specialist for the post of BPS-19 (Assistant Professor) in NUML (21 July 2017).
- **PhD scholarship in 2011** from COMSATS Institute from Information Technology, Islamabad, Pakistan.
- **MS scholarship in 2006** from Center of Advance Studies in Engineering (CASE), Islamabad.
- **Special Contribution Award for Year 2008-09**, from Department of Electrical Engineering, COMSATS Institute of Information Technology Islamabad, Pakistan.
- **Honorarium** awarded for best performance in Year 2008-09.
- **Best Teacher Award** in Year 2007-08.
- **IEEE PSYWC-23** Event Lead
- **Pre-ISAC Committee** Evaluation Member of Scholarship Committee
- **Ambience and Event Committee** Member

RESEARCH AWARDS

- **Research Productivity Award** from COMSATS Institute from Information Technology, Islamabad, Pakistan in 2011 and 2013.
- **First Position** in Poster Paper Competition, **2nd International Conference on Emerging Technologies (ICET-2006)** Peshawar, N.W.F.P, Pakistan.

INVITED SPEAKER

- COMSATS Institute of Information Technology, Attock, “Digital Watermarking of Stereoscopic Images Using Depth Image Based Rendering and Machine Learning” in April 2013.

REVIEWER/TECHNICAL PROGRAM COMMITTEE MEMBER

- **Reviewer**, International Conference on Communication Technologies (ComTech-2017), 19-21 April, 2017, <http://icct2017.mcs.edu.pk/Default.aspx29>.
- **Technical Program Committee Member**, CCODE 2017 (International Conference on Communication, Computing and Digital Systems), 08-09 March 2017, <https://ccode.bahria.edu.pk/committees/technical-program-committee/>.
- **Technical Program Committee Member**, FIT 2017 (Frontiers of Information Technology), 18-20 December 2017, <http://fit.edu.pk/index.php/technical-program-committee>.
- Program Committee Member, ComTech-2017 (International Conference on Communication Technologies), 19-21 April 2017, <https://easychair.org/my/conferences.cgi>.
- **Reviewer**, International Journal of Imaging System and Technology, Wiley, 2020.

SUPERVISED GRADUATE STUDENTS

- Denoising techniques for the generation of depth map for Future Free-view TV.
- Reversible Image Watermarking for Depth Image Based Rendering (DIBR) 3D-TV.

- Depth Map Estimation for Stereoscopic Images.
- Generation of Depth Map from Edges using Directional Filter Bank.

SUPERVISED UNDERGRADUATE STUDENTS

20+ students have been supervised so far in core engineering areas like Digital Image Processing, Computer Vision and Digital Watermarking and Steganography.

COURSE TAUGHT (GRADUATE)

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|--------------------------------|---|-----------------------|
| 1. Electric Circuit Analysis-I | 2. Electric Circuit Analysis-II | 3. Electronics-I |
| 4. Digital Image Processing | 5. Analog Communication System | 6. Network Analysis-I |
| 7. Electrical Machines | 8. Introduction to Computer and Computing | 9. Computer Vision |

GRADUATE COURSES

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|-----------------------------|---------------------------------|--------------------------------|
| 1. Digital Image Processing | 2. Digital Signal Processing | 3. Pattern Recognition |
| 4. Computer Vision | 5. Theory and Design of Antenna | 6. Broadband Switching Systems |
| 7. Digital Communication | 8. Information Coding Theory | 9. Numerical Methods |
| 10. Optimization Techniques | 11. Real Analysis | |

CERTIFICATES

- *Faculty Development Workshop* at COMSATS Institute of Information Technology, Wah.
- *One Day Teaching Methodology* workshop at COMSATS Institute of Information Technology, Islamabad.

ADMINISTRATIVE WORK

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| 1. In-charge Project Management Committee. | 2. Class Counselor Fall-2009. | 3. In-charge Examination Cell. |
| 4. Class Counselor Fall-2008. | 5. In-charge Physics Lab. | |

COMPUTER SKILLS

Office Tool: MS Office, Latex
 Electrical Engineering Software: MATLAB, Electronic Workbench, PSpice, LTSpice

RESEARCH PUBLICATIONS

ISI INDEXED IF JOURNAL PUBLICATIONS

([HTTPS://SCHOLAR.GOOGLE.COM/CITATIONS?USER=C4CYEM8AAAAJ&HL=EN](https://scholar.google.com/citations?user=C4CYEM8AAAAJ&hl=en))

- Hira Khan, Nadeem Javaid, **T. Bashir**, Mariam Akbar, Nabil Alrajeh and Sheraz Aslam, "*Heart disease prediction using novel Ensemble and Blending based Cardiovascular Disease Detection Networks: EnsCVDD-Net and BICVDD-Net*", IEEE Access, Published: 1 July 2024, (DOI: [10.1109/ACCESS.2024.3421241](https://doi.org/10.1109/ACCESS.2024.3421241)). (IF: 3.9)
- Hannan Adeel, M Mohsin Riaz, **T. Bashir**, Syed Sohaib Ali and Shahzad Latif, "*Multi-focus image fusion using curvature minimization and morphological filtering*", Multimedia Tools and Applications, Published: 14 February 2024, (<https://doi.org/10.1007/s11042-024-18654-6>). (IF: 3.0)
- Hannan Adeel, M Mohsin Riaz and **T. Bashir**, "*Entropy-driven exposure interpolation for large exposure-ratio imager*", Multimedia Tools and Applications, Published: 17 February 2024, (<https://doi.org/10.1007/s11042-024-18662-6>). (IF: 3.0)
- Saeeda Beenish Zahra, **T. Bashir**, Imran Usman and M Mohsin Riaz, "*Stereoscopic shift error expansion reversible watermarking scheme using depth image based rendering*", Multimedia Tools and Applications, Published: 1 February 2024, (<https://doi.org/10.1007/s11042-024-18570-9>). (IF: 3.0)
- Sajid Hussain Alvi, Bakhtiar Ali, Jawad Mirza, Muhammad Awais Javed, Adnan Fida, Byung Moo Lee, and **T. Bashir**, "*Performance Analysis of IRS-Assisted THz Communication Systems over α - μ Fading Channels with Pointing Errors*", Sensors, Published: 08 August 2023, (<https://doi.org/10.3390/s23167028>). (IF: 3.9)
- Syed S. Naqvi, Zubair Akhtar Langah, Haroon Ahmed Khan, Majid Iqbal Khan, **T. Bashir**, M. I. Razzak, Tariq M.Khan, "*GLAN: GAN Assisted Lightweight Attention Network for Biomedical Imaging Based Diagnostics*", Cognitive Computation, Published: 07 March 2023, (DOI: <https://doi.org/10.1007/s12559-023-10131-w>). (IF: 4.89)
- Aqib Ali Khan, Safeer Ahmad Arbab, Abdul Manan, Abdul Saboor, Atta Ullah, Noor Saeed Khattak, Iftikhar Ahmad, Muhammad Naeem Khan, **T. Bashir**, Muhammad Asif, Muhammad Sadiq and Muhammad Arif, "*Enhanced energy storage properties of La^{3+} modified $0.92Bi_{0.5}Na_{0.5}TiO_3 - 0.06Ba(Zr_{0.2}Ti_{0.8})O_3 - 0.02NaNbO_3$ ternary ceramic system*", Materials Research Express, Vol. 8, No. 2021, pp. 1-10, 16 April 2021. (DOI: <https://doi.org/10.1088/2053-1591/abf52b>) (IF:1.783).

- Waqas Khan, Vishwesh Laxmikant Akre, Khalid Saeed, Asif Nawaz, **T. Bashir**, Adil Khan, Naveed Jan, Sheeraz Ahmed, Zia Ullah Khan, *“Impact of Black Hole Attack on the Performance of Dynamic Source Routing and Optimized Link State Routing Protocols in Manet”*, Journal of Mechanics of Continua and Mathematical Sciences, Vol. 16, No. 3, pp. 13-30, March 2021. (DOI: <https://doi.org/10.26782/jmcmms.2021.03.00002>).
- Shaheer Shaida Durrani, Abu Zaharin Bin Ahmad, Bakri Bin Hassan, Atif Sardar Khan, Asif Nawaz, Naveed Jan, Rehan Ali Khan, Rohi Tariq, Ahmed Ali Shah, **T. Bashir**, Zia Ullah Khan, Sheeraz Ahmed, *“An Efficient Color LED Driver Based on Self-Configuration Current Mirror Circuit”*, International Journal of Advanced Computer Science and Applications (IJACSA), Vol. 12, No. 2, pp. 347-356, February 2021. (DOI: 10.14569/IJACSA.2021.0120244).
- M. Imran, H. A. Khattak, D. Millard, T. Tiropanis, **T. Bashir**, and Ghufuran Ahmed, *“Calculating Trust Using Multiple Heterogeneous Social Networks”*, Wiley Hindawi, Wireless Communications and Mobile Computing, Vol. 2020, pp. 1-14, 21 February 2020. (DOI: <https://doi.org/10.1155/2020/8545128>) (IF=1.396)
- **T. Bashir**, I. Usman, A. Albeshier, S. Atawneh and S. S. Naqvi, *“A DCT Domain Smart Vicinity Reliant Fragile Watermarking Technique for DIBR 3D-TV”*, Automatika, Vol. 61, No. 1, pp. 58-65, November 2019. (DOI: 10.1080/00051144.2019.1670992) (IF=0.403)
- I. U. Afridi, **T. Bashir**, H. A. Khattak, T. M. Khan, M. Imran, *“Degraded Image Enhancement by Image Dehazing and Directional Filter Banks using Depth Image Based Rendering for Future Free-view 3D-TV”*, Plos One, Vol. 14, No. 5, pp. 1-24, May 2019. (DOI: <https://doi.org/10.1371/journal.pone.0217246>) (IF=2.766)
- **T. Bashir**, I. Usman, Abdulaziz Albeshier, Khalid A. Almejall and S. S. Naqvi, *“GP Based Smart Reversible Watermarking of Depth Image Based Rendering for Stereoscopic Images”*, Multimedia Tools and Applications, Springer, Vol. 78, No. 15, pp. 21943–21962, August 2019. (DOI: <https://doi.org/10.1007/s11042-019-7399-5>) (IF=1.541)
- Z. U. Rehman, S. S. Naqvi, T. M. Khan, M. A. Khan and **T. Bashir**, *“Fully automated multi-parametric brain tumor segmentation using superpixel based classification”*, Expert Systems with Applications, ELSEVIER, Vol. 118, pp. 598-613, March 2018. (IF=3.768)
- S. S. Naqvi, J. Mirza and **T. Bashir**, *“A unified framework for exploiting color coefficients for salient object detection”*, Neurocomputing, ELSEVIER, Vol. 312, pp. 187-200, 31 October 2018. (IF=3.317)
- **T. Bashir**, I. Usman, S. Khan and J. Rehman, *“Intelligent reorganized discrete cosine transform for reduced reference image quality assessment”*, Turkish Journal of Electrical Engineering computer sciences, Vol. 25, pp. 2660-2673, July 2017. (IF=0.578)
- **T. Bashir**, I. Usman, and J. Rehman, *“Secure digital watermarking using optimized improved spread spectrum and BCH coding for DIBR 3D-TV system”*, Multimedia Tool and Application, Springer, Vol. 74, No. 11, pp. 1-17, June 2015. (IF=1.541)
- T. M. Khan, M. A. Khan, S. A. Malik, S. A. Khan, **T. Bashir**, and A. H. Dar, *“Automatic Localization of Pupil Using Eccentricity and Iris using Gradient Based Method”*, Optics and Lasers in Engineering, ELSEVIER, Vol. 49, No. 2, pp. 177-187, October 2010. (IF=2.769)
- Javed, M. Fasihullah, M. A. Munir, I. Usman, M. F. Shafique, **T. Bashir**, and M. A. Khan, *“A New Additive Watermarking Technique for Multimodal Biometric Identification”*, Journal of Basic and Applied Scientific Research, Vol. 3, No. 7, pp. 935-942, July 2013.
- A. A. Tahir, Munir, I. Usman, Z. Mahmood, M. F. Shafique, **T. Bashir**, and M. A. Khan, *“EEG Feature Classification Using Enhanced CSSD and Combination of Classifiers”*, Journal of Basic and Applied Scientific Research, Vol. 3, No. 7, pp. 911-914, July 2013.
- S. U. Haq, and **T. Bashir**, *“Evaluation of Induction Motor Groundwall Insulation using Infrared Thermography”*, Journal of Engineering and Applied Sciences, N.W.F.P University of Engineering and Technology Peshawar, Pakistan Vol. 26, No. 2, pp. 35-42, December 2007.

CONFERENCE PUBLICATIONS

- Rabia Naseem, K. S. Alimgeer, **T. Bashir**, *“Recent Trends in Computer Aided Diagnosis of Lung Nodules in thorax CT Scans”*, International Conference on Innovations in Electrical Engineering and Computational Technologies, pp. 1-12, 2017.
- M. T. Ibrahim, **T. Bashir**, and L. Guan, *“Robust Fingerprint Image Enhancement: An Improvement to Directional Analysis of Fingerprint Image Using Directional Gaussian Filtering and Non-Subsampled Contourlet Transform”*, IEEE International Symposium on Multimedia (ISM.2008.108) Berkeley, California USA, pp 280-285 December 15-17, 2008.
- S. U. Haq, **T. Bashir**, and K. Mahmood, *“Role of Nanofillers in Induction Motor Enamelled Wires Exposed to PWM-VSC Waveforms”*, IEEE International conference on Electrical Engineering (ICEE-2007.4287299) Lahore, Pakistan pp 1-5 April 11-12, 2007.
- Q. Saeed, **T. Bashir**, S. U. Haq, N. Zia, and M. A. Paracha, *“Mathematical Hard Problem in Modern Public-Key Cryptosystem”*, IEEE 2nd International Conference on Emerging Technology (ICET-2006.335986) Peshawar, Pakistan pp 456-460 Nov 13-14, 2006.

- S. U. Haq, and T. Bashir, “Evaluation of Induction Motor Groundwall Insulation using Infrared Thermography”, IEEE 2nd International Conference on Emerging Technology (ICET-2006.335998) Peshawar, Pakistan pp 416-420 Nov 13-14, 2006.
- M. A. Paracha, N. Zia, Q. Ashfaq, S. Haque, and T. Bashir, “Effect of Fast Transients Disturbances on Stator Interturn Insulation”, Electrostatic Society of America (ESA) 2005 Annual Conference, Canada, June 21-24, 2005.

CONFERENCE/WORKSHOP ORGANIZED

Event Organizer Annual Symposium Emerging Trends in HealthCare Analytics and data standards -HL7, Pakistan, 20 July 2018.

Event Organizer Annual Symposium Emerging Trends in HealthCare Analytics and data standards -HL7, Pakistan, 5 August 2019.

REFERENCES

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