

Prof. Dr. Gulistan Raja

Dean FE&EE, UET Taxila

Professional Experience

Professor | Dec. 2012 – Present

Electrical Engineering Department, University of Engineering and Technology, Taxila

- Teaching Digital Image Processing and Computer Networks to postgraduate students
- Teaching Digital Image Processing & Communication Networks to undergraduate students
- Produced 04 PhDs and Supervised 65 MSc Engineering Thesis
- Supervised 40 Undergraduate Final Year Projects

Dean Faculty of Electronics & Electrical Engineering | Jul. 2024 – Present

University of Engineering and Technology, Taxila

Director Advanced Studies, Research & Tech. Development | Aug. 2023 – Present

University of Engineering and Technology, Taxila

Visiting Professor | May 2025

Faculty of Engineering, University of Engineering and Technology, Taxila

Chairman | Mar. 2015 – Apr. 2018

Electronics Engineering Department, University of Jaffna, Sri Lanka

Founding Chairman | Oct. 2017 – Apr. 2018

Biomedical Engineering and Technology Dept., University of Engineering and Technology, Taxila

Associate Professor | Apr. 2012 – Dec. 2012

Electrical Engineering Department, University of Engineering and Technology, Taxila

Assistant Professor | May 2003 – Mar. 2012

Electrical Engineering Department, University of Engineering and Technology, Taxila

LSI Designer | Apr. 2000 – Mar. 2002

Synthesis Corporation, Osaka, Japan

Teaching/Research Associate | Jun. 1997 – Apr. 2003

Electrical Engineering Department, University of Engineering and Technology, Taxila

Administrative Responsibilities

Convener, OBE, EED	Mar. 2022 – Present	University of Engg. & Tech. Taxila
Counselor, IEEE Student Branch	Dec. 2009 – Nov. 2022	University of Engg. & Tech. Taxila
Chairman, Central Purchase Committee	Jan. 2015 – Nov. 2021	University of Engg. & Tech. Taxila
Chairman, Selection Committee	June. 2018 – Nov. 2019	University of Engg. & Tech. Taxila
Director, Telephone Exchange	Mar. 2012 – Apr. 2016	University of Engg. & Tech. Taxila
Chairman, Livery Committee	Jan. 2011 – Mar. 2015	University of Engg. & Tech. Taxila
Director, Digital System Lab	Oct. 2011 – Mar. 2015	Electrical Engg. Dept., UET Taxila
Member, Central Purchase Comm.	Jan. 2012 – Dec. 2014	University of Engg. & Tech. Taxila
Scrutinizer, MSc/PhD Examinations	Aug. 2007 – Aug. 2014	Examination Branch, UET Taxila
Director, Postgraduate Studies	Jan. 2004 – Jun. 2013	Electrical Engg. Dept., UET Taxila

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President, Teaching Staff Assoc.	May 2011 – Jan. 2012	University of Engg. & Tech. Taxila
Chairman, Financial Aid Committee	Mar. 2011 – Sep. 2011	University of Engg. & Tech. Taxila
Transport Officer	Sep. 2010 – Nov. 2010	University of Engg. & Tech. Taxila
Secretary, Purchase Committee	June 2007 – Sep. 2010	Electrical Engg. Dept., UET Taxila
Director, Computer Comm. Lab	Mar. 2007 – Feb. 2009	Electrical Engg. Dept., UET Taxila
Focal Person, Scholarship Program	May 2006 – Aug. 2010	Higher Education, HEC, Islamabad

Education

Dec. 2008	PhD Electrical Engineering	University of Engineering & Technology Taxila
Mar. 2002	MS Information Systems Engg.	Osaka University, Osaka, Japan
Aug. 1996	BSc Electrical Engineering	University of Engineering & Technology Taxila
Apr. 1990	Intermediate, Pre-Engineering	F. G. Sir Syed College, Rawalpindi
Apr. 1988	Metric with Science	P.A.F. Inter College, Rawalpindi

Development Work

- Implementation of OBE System in Electronics Engineering Department, UET Taxila, 2015-2018
- Establishment of BS Biomedical Engg. Tech. Program in Biomedical Engineering & Technology Dept., UET Taxila, 2017
- Establishment of HEC Recognized MSc/PhD Program in Electronic Engineering Department, UET Taxila, 2017
- Establishment of Instrumentation/Microprocessor & Microcontroller/Digital System Lab in Electronic Engg. Dept., UET Taxila, 2017
- Preparation of PC-1 for Video and Image Processing Laboratory, UET Taxila, 2005

Distinctions

- Academic Editor, PLOS-ONE Journal, USA, Aug. 2020 – Present
- Associate Editor, IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences, Japan, Feb. 2021 – Present
- Associate Editor, IET The Journal of Engineering, UK, Dec. 2020 – Present
- Vice Chair, IEEE Islamabad Section, Feb. 2023 – Present
- Associate Editor, IEEE Access Journal, USA, Aug. 2019 – Sep. 2022
- Chair, Awards and Recognition Committee, IEEE Islamabad Section, April 2018 – Jan. 2023
- Implementation of Outcome based Education System of Evaluation (substantially equivalent to Washington Accord) and consequent accreditation by PEC under said system at Electronics Engg. Dept. UET Taxila, 2018
- Recipient of IEEE Outstanding Branch Counselor Award, R10 (Asia Pacific Region), 2016
- Session Chair 'Signal Extraction and Identification (SEI), IEEE International Conference on Signal and Image Processing Applications, ICSIPA 2015, Kuala Lumpur, 19-21 Oct. 2015
- Creation of Consumer Electronics Society (CESoc) Student Chapter at UET Taxila (1st in Pakistan), Aug. 2015
- Creation of Women in Engineering (WIE) Student Affinity Group, UET Taxila, Dec. 2013
- Invited Speaker, Intl. Conf. on Electrical, Comm. & Comp. Engineering (ICECCE-2019), Swat, 24-25 July 2019
- Session Chair 'Speech, Video and Signal Processing', 2013 Intl. Conf. Emerging Tech., Islamabad, 9-10 Dec 2013
- Program Evaluator, Pakistan Engineering Council, Islamabad 2012 – To date
- Secretary, Distinguished Innovations, Collaboration & Entrepreneurship (DICE), UET Taxila, 19-20 Dec 2012
- Co-Chair, Technical Program Committee, IEEE Intl. Conf. on Emerging Tech. 2012, Islamabad, 8-9 Oct. 2012
- Recipient of Best University Teacher Award for year 2009, by Higher Education Islamabad, 2010
- Approved PhD Supervisor, Higher Education Commission, Islamabad, 2010 - To date
- Session Chair, 13th IEEE International Multi-topic Conference, Islamabad, 2009
- Chairman, Senri International House Executive Committee, Osaka, Japan, 2001-2002
- 1 year Japanese Language Course, Osaka University of Foreign Languages, Japan, 1999-2000
- Scholarship Award for Master Studies from OFIX, Government of Japan, 1999-2000

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Invited Talks/Trainings/Workshops Conducted

- 2nd Intl. Conference on Digital Technologies for Sustainable Agriculture, ICDTSA-2025, Kilinochchi, University of Jaffna, Sri Lanka, 22-23 May 2025
- CPD on "Outcome based System of Education & its Implementation", UET Taxila, 8 May 2024.
- Workshop on "Outcome based System of Education & Accreditation", Faculty of Computer Engineering, UET Taxila, 26 Feb. 2024
- 2-day training on "Outcome based System of Education and Accreditation", University of Gujrat, 12-13 Feb. 2024.
- Workshop on "Outcome based Education - An interactive Session for Computing Professionals", CUST, Islamabad, 2 Aug. 2023.
- Invited Talk, 20th International Bhurban Conference on Applied Sciences and Technology (IBCAST-2023), Murree, 22-25 Aug. 2023.
- Invited Talk, International Symposium on Artificial Intelligence Medical Imaging and Pattern Recognition, NCP, Islamabad, July 2023.
- Invited Talk, 2nd International Conference titled as Energy, Power, Environment, Control, and Computing (ICEPECC-2023), University of Gujrat, Gujrat, 8-9 March 2023.
- CPD on "Outcome Based System of Education and Accreditation", UET Taxila, 8 Feb 2023.
- Training on "Outcome based Education & Related Concepts", Mehran University of Engineering & Technology, SZAB Campus Khairpur Mirz, 17 Oct. 2022
- Workshop on "Outcome based Learning", Fatima Jinnah Women University, Rawalpindi, 9 Sep. 2022.
- "2-day Advanced Workshop on OBE", UET Taxila, 7-8 Sep. 2022.
- "One Day Workshop on OBE System", University of Chakwal, 26. Jul. 2022.
- CPD on "Outcome Based System of Education and Accreditation – Implementation Perspective", UET Taxila, 8 Mar 2022.
- Workshop on "Outcome based System of Education" NUTEC University, Islamabad, 1 Feb 2022.
- Workshop on "CEPs/PBLs/OELs and its Assessment", MUST University Mirpur, AJK, 3 July 2021.
- Invited Speaker, Intl. Conf. on Electrical, Comm. & Comp. Engineering (ICECCE-2019), Swat, 24-25 July 2019.
- Invited Speaker, Intl. Conf. on Sensing, Control, Comm. & Security Technologies, Karachi, 24-26 Jun. 2013.

Reviewer

- IEEE Transactions on Artificial Intelligence
- IEEE Transactions on Knowledge and Data Engineering
- SPIE Journal of Electronic Imaging
- Wireless Communications and Mobile Computing
- IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems
- IEEE Access Journal
- Journal IEICE Electronics Express, Japan
- The Imaging Science Journal
- IEICE Transactions on Information and Systems
- Journal of Experimental & Theoretical Artificial Intelligence
- KSII Transactions on Internet and Information Systems
- IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences
- Integration, the VLSI Journal
- International Bhurban Conference on Applied Sciences and Technology (IBCAST), 2022-2023
- Intl. Conf. on Innovation and Intelligence for Informatics, Computing, and Technologies, Bahrain, 29-30 Sep. 2021
- 8th – 14th IEEE Intl. Conference on Open Source Systems and Technologies, UET Lahore, Dec. 2014 – 2021
- 16th IEEE International Conference on Emerging Technologies 2021 (ICET 2021), Islamabad, 22-23 Dec. 2021
- 5th International Conference on Electronic Design (ICED), Malaysia, 19 August 2020.
- Zooming Innovation in Consumer Technologies International Conference (ZINC-20), Serbia, May 26-27, 2020
- 22nd IEEE International Multi Topic Conference, Islamabad, 29 - 30 Nov 2019
- 4th-8th IEEE Intl. Conference on Consumer Electronics, ICCE'14, Berlin, Germany, 2014 - 2019
- IEEE International Conference on Signal and Image Processing (ICSIPA), Kuala Lumpur, 17-19 Sep. 2019
- 5th International Conference on Advances in Computing, Communication and Informatics, Jaipur, Sep. 2016
- 4th Intl. Conf. on Advances in Computing, Communications & Informatics, India, 10-13 Aug. 2015
- 8th -13th International Conf. on Frontiers on Information Technology, Islamabad, Dec.2010 - Dec.2015
- IEEE International Midwest Symposium on Circuits and Systems, Texas, USA, 3-6 Aug. 2014
- IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences, Special Section on "VLSI Design & CAD Algorithms" Japan Dec. 2009, 2013, 2014 Issues

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- 8th- 9th IEEE Intl. Conf. on Emerging Technologies, Islamabad, 8-9 Oct. 2012, 9-10 Dec. 2013
- IEEE International Symposium on Circuits and Systems, ISCAS, Paris, France, 30 May - 2 June 2010
- International Conference on Computer & Communication Engg., Malaysia, 11-12 May 2010
- 13th IEEE International Multi-topic Conference, Islamabad, 14-15 Dec. 2009

Certifications/Trainings/Workshops Attended

- Certified Training Programme for Academic Leaders and University Management on Governance and Leadership, Edinburgh Napier University, UK, May 2025
- COMSTECH-CCOE International Workshop on Quality Assurance and University Ranking, OIC-COMSTECH, Islamabad, 2-3 July 2025
- Strategic Leadership for Pro Vice-Chancellors and Deans, organized by Sindh Higher Education Commission, Karachi, 10-11 Apr. 2025
- Academic Staff Training under BIOMED 5.0 Erasmus+ Project, Romania, 10-14 Feb. 2025
- Academic Staff Training under BIOMED 5.0 Erasmus+ Project, Ireland, 3-6 Sep. 2024
- 2nd Intl. Conference on Energy, Power, and Environment (ICEPE23), University of Gujrat, 8-9 Mar. 2023
- 18th International Bhurban Conference on Applied Sciences and Technologies (IBCAST 2021), Islamabad, 12-16 Jan. 2021
- 3rd International Deans Conference of Engineering Institutions, organized by PEC Islamabad, 7-8 April 2021.
- Virtual Conference Organizers' Panel – To Explore the Challenges of Organizing a Full Virtual Technical Conference, organized by IEEE Bangladesh Section, via Zoom, 1-2 July 2020.
- Washington Accord Workshop on Sharing Best Practices and Policies for Online Teaching Learning and Assessment System and Virtual/Remote Accreditation Process, via Zoom, 13 June 2020.
- International Conf. on Electrical, Comm. & Comp. Engineering (ICECCE-2019), Swat, 24-25 July 2019
- Two Days Training Workshop on OBE/OBA System, UET Taxila organized by PEC Islamabad, 6-7 Feb 2018
- SAI Intelligent Systems Conference, IntelliSys 2017, London, United Kingdom, 7-8 Sep. 2017
- One Day Training Session on OBA Accreditation Process for Program Evaluators, ISB by PEC, 29 Apr. 2017.
- Two Days International Training Workshop on Outcome Based Education and Implementation organized by QEC UET Taxila in collaboration with PEC, 1-2 Feb. 2017.
- Workspace Ethics, Team Building & Time Management and Leadership & Decision Making by Cornwall Education & Training (UK) Limited at UET Taxila, 1-2 Dec. 2016.
- SMART Goals & Strategic Thinking and Interpersonal Skills & Corporate Communication by Cornwall Education & Training (UK) Limited at UET Taxila, 24-25 Nov 2016.
- IEEE Intl. Conf. on Signal and Image Processing Applications, ICSIPA 2015, Kuala Lumpur, 19-21 Oct. 2015
- 1 Day Workshop on Project Management at PC Rawalpindi by Institute of Tender Management, 12 Sep 2015
- 2 Days Workshop on Outcome based Education & Assessment System of Accreditation, PEC, 2-3 Mar 2015
- Two Days Workshop on OBA System of Accreditation for Program Evaluators, Islamabad, 6-7 Nov. 2014
- Workshop on Complex Problem Solving and Activities, PEC, Islamabad, 24 Apr 2014
- Short course on Outcome based Education and Accreditation, PEC, Islamabad, 28 Feb 2014
- Short course on Leadership for Engineers & Technical Managers, PEC, Islamabad, 27 Jan 2014
- Two days Training on Public Procurement Rules and Procedures, NIP, Islamabad, 4-5 Dec 2013
- Intl. Conf. on Sensing for Industry, Control, Comm. & Security Technologies, Karachi, 24-26 Jun. 2013
- International Conference on Engineering Sciences, Punjab University Lahore, 28-29 Feb 2012
- International Conference on Greener-Safer South Asia, COMSATS, Islamabad, 10-11 Dec 2011
- Five days' course of BSS(BTS+BSC) on Advanced GSM Equipment, UET Lahore, 30 Mar.-3 Apr. 2010
- International Conference on Consumer Electronics, Las Vegas, USA, 10-13 January 2010
- Global Pervasive Signal Processing Conference, Santa Clara, California, USA, October 2005
- Workshop on Cadence Design Tools, Center of Excellence for ASIC Design & DSP, Taxila, 15-19 Nov. 2005
- Synopsis Design Compiler Workshop, Center of Excellence for ASIC Design & DSP, UET Taxila, June, 2005
- Three Days FPGA Workshop, Center of Excellence for ASIC Design & DSP, UET Taxila, May, 2005
- Research Paper Presented in IEICE General Conference, Tokyo, Japan, March 2002
- Digital Ware International Symposium, Awaji Island, Kobe, Japan, 2-3 June 2000
- Annual LSI Designers Forum, VDEC, Osaka, Japan, August 2000

Memberships

- Member, Engineering Curriculum Review & Development Committee (ECRDC) for Electrical and Allied Engineering Discipline, Pakistan Engineering Council, Apr. 2022 – Present
- Member, Board of Studies, Islamic Intl., University, Islamabad Nov. 2021 - Present
- Member, Academic Council, University of Chakwal, Nov. 2020 – Present

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- Member, Board of Faculty, FE&CE, UET Peshawar, Feb. 2020 – Present
- Member Pakistan Engineering Congress: Member, Institute of Engineers (IEP), Pakistan
- Member, Board of Studies, Electrical Engg. Dept., Intl. Islamic University, Islamabad, 2015-2018
- Member, Board of Studies, Electrical Engineering Department, MUST, AJK, 2012-2016
- Member, Board of Studies, Computer Systems Engineering Department, MUST, AJK, 2011-2013
- Member, Board of Faculty, Riphah International University, Islamabad, 2010-2012
- Member, Board of Faculty, Wah Engineering College, University of Wah, Wah Cantt., 2010-2012
- Member, Institute of Engineers, IEP, Pakistan
- Member, Pakistan Engineering Congress, Pakistan
- Professional Member, Pakistan Engineering Council, PEC, Pakistan
- Fellow IEEE, Pakistan
- Senior Member IEEE, USA

Grants

- Grant of 8.3K Euro for Project “Capacity Building in Biomedical Engineering Education for Digital Transformation and Industry 4.0/5.0 Technologies”, to Consortium of 10 Universities by Erasmus plus European Union, 2023
- Research grant of 0.1 Million PKR, "AI based De-Noising Network for Infrared Images", NESCOM, 2024
- Research grant of 0.2 Million PKR "Generation of Infrared Hazy Images Dataset using CNN and GAN Networks and AI Model Training to Remove Haze for High and Dense Hazy IR Images" NESCOM, 2024
- Research grant of 0.1 Million PKR "AI based No Reference Image Quality Evaluator Metric for Infrared Images" NESCOM, 2024
- Research grant of 8.3 Million PKR for project "EMeRALDS: Electronic Medical Records driven Automated Lung Nodule Detection and Cancer Risk Stratification", NRPU, HEC 2022 (as Co-PI)
- Research grant of 0.1 Million PKR for project “Development of Image Quality Metric Evaluator for Estimation of Reference Less Perceptual Image Quality using AI Techniques”, sponsored by AWC, May. 2022 (as PI)
- Research grant of 8.3 Million PKR for project “EMeRALDS: Electronic Medical Records driven Automated Lung Nodule Detection and cancer risk Stratification” sponsored by HEC, Pakistan, Dec. 2021 (as Co-PI)
- Research grant of 0.2 Million PKR for project "Generic Classification of Scene Contents using Multispectral Imaging", sponsored by NESCOM, Feb. 2020 (as PI)
- Research grant for project titled "Image Enhancement Techniques (Night Time)", sponsored by NESCOM, 0.1 million, Mar. 2019 (as PI)
- Research grant for project titled “An Efficient Scheme for Lung Nodule Detection” sponsored by UET, Taxila, 1.74 million, April 2015 (as Co-PI)
- Research grant for project titled “Implementation of Latent Fingerprint Enhancement and Marking Region of Interest (ROI)” sponsored by UET, Taxila, 1.075 million, April 2013 (as Co-PI)
- Research grant for project titled “Investigation of Hardware Implementation of Optimized Video Enhancement Technique” sponsored by UET, Taxila, 2011 (as Co-PI)
- Research grant for project titled “Performance Analysis of Latest Image/Video Compression Standard for Medical Image Compression” sponsored by UET, Taxila, 2010 (as Co-PI)
- Research grant of 0.2 Million for “Design & Implementation of Improved Quality Low Bit Rate Video Coding” sponsored by UET, Taxila, 2005 (as PI)
- Scholarship for Master’s Study from Govt. of Japan from Apr.1999

Former/Current PhD Students

1. Dr. Hafiz M. Irfan Arshad (09-PhD-EE-37), “An Improved Latent Fingerprint’s Feature Extraction and Matching Algorithm”, 30 Jan. 2015
2. Dr. Furqan Shoukat (11-PhD-EE-51), “An Efficient Scheme for Lung Nodule Detection”, 6 June 2018
3. Dr. Ahmad Saeed Khattak (11-PhD-EE-43), “A Multi-Feature Hybrid Object Tracking Algorithm”, 15 Jan. 2020
4. Dr. Muhammad Qasim (15-PhD-ENC-06), “Image Dehazing using Deep Convolutional Neural Networks”, Oct. 2023
5. Mansoor Ahmad (17-PhD-EE-83), “Histopathological Diagnosis of Lung Cancer using Convolutional Neural Network,” in *Research Phase*
6. Muhammad Abdullah Umar (19-PhD-EE-96), “Multi-Disease Retinal Image Analysis using Machine Learning Methods”, in *Research Phase*
7. Yasar Rizwan, (19-PhD-EE-97) “AI based State Assessment and Control of Power Electronic Converters” in *Research Phase*

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8. Zaeem Anjum Wakeel, (19-PhD-EE-98) "Detection of Myocardial Fibrosis using Cardiac Magnetic Resonance Images" in *Research Phase*

PhD Thesis Evaluated/Examined:

1. Sajid Hussain Alvi (CIIT/SP11-PEE-005/ISB), "Performance Analysis of Cooperative Communications Over Fading Channels" COMSATS Institute of Information Technology Islamabad, Dec. 2016
2. Sardar Muhammad Gulfam (CIIT/FA12-PEE-002/ISB), "Geometrically based Modeling and Characterization of 3D Aeronautical Radio Propagation Channels", COMSATS Institute of Information Technology Islamabad, Feb. 2017
3. Abrar Ahmad (CIIT/SP13-PEE-012/ISB), "Geometric Modeling and Characterization of 3-D Land Mobile Radio Cellular Propagation Channels", COMSATS Institute of Information Technology Islamabad, Aug. 2017
4. Bakhtiar Ali (CIIT/SP12-PEE-008/ISB), "Rate Optimization and Resource Allocation in Cooperative Cognitive Radio Network", COMSATS Institute of Information Technology Islamabad, Dec. 2017
5. M. Nadeem Sial (CIIT/SP14-PEE-005/ISB), "Analysis of Decoupled User Association in Multi-Tier 5G Heterogeneous Cellular Networks", COMSATS Institute of Information Technology Islamabad, Mar. 2018
6. Mohsin Fayyaz (CIIT/SP-13-R65-002/ATD), "Optical Interconnects in Data Center Networks", COMSATS University, Abbotabad Campus, Dec. 2018
7. Muhammad Tahir (PE113012), "Fast Video Coding using Spatio-Temporal Features and Ensemble Classification", Capital University of Science and Technology, Islamabad, Sep. 2019
8. Aadil Raza (CIIT/FA13-PEE-002/ISB), "Radio-over-Fiber Transmission Schemes for Next Generation Wireless Access Networks", COMSATS University, Islamabad, Nov. 2019
9. Mohammad Arif, (CIIT/SP15-PEE-003/ISB) "Performance Evaluation of Heterogeneous Cellular Networks", COMSATS University, Islamabad, March 2021
10. Waqar Alam (CIIT/SP17-PEE-002/ISB), "Robust Nonlinear Control Strategies and its Application to Closed-Loop Artificial Pancreas", COMSATS University, Islamabad, July 2021
11. Olufisayo Sunday Ekundayo (218085734), "Facial Expression Recognition and Intensity Estimation", University of KwaZulu-Natal, Durban, South Africa, Oct. 2021
12. Saqib Amin (F17C03P14001), "Embedded System Approach for Laser Based Self-Mixing Interferometry Sensing", Riphah International University, Islamabad, Apr. 2022
13. Mehreen Sirshar (201590286PCEME) "Computational Diagnostic Systems for Lung Diseases Through Deep Learning and NLP Based Automated Medical Reporting" NUST CEME, Rawalpindi, May. 2022
14. Arslan Shafique (F18C03P14003), "Noise-tolerant Chaos Based Cryptosystems for the Security of Digital Images Using Machine Learning" Riphah International University, Islamabad, Sep. 2022
15. Asif Siddique, "Efficient encoding of HDR Images and Videos", Riphah International University, Islamabad, Jun. 2023

Publications

Books / Monographs:

- **Gulistan Raja**, "Optimized Low Bit Rate Video Coding: Algorithms for Suppression of Blocking Artifacts", Published by LAP Publishing, Germany, Sept. 2011, ISBN: 978-3-8454-4091-0.
- M. R. Rehman, **Gulistan Raja** and A. K. Khan, "Implementation of Lapped Biorthogonal Transform for Image Coding" Chapter in Book Titled: Advanced Video Coding for Next-Generation Multimedia Services, Intech Publishers, Rijeka, Croatia, Dec. 2012, ISBN: 980-953-307-677-0.

International/National Journals:

1. M. Masood and Gulistan Raja, "Aberrance Repressed Multi-Feature Integrated Correlation Filter with Adaptive Learning for Visual Object Tracking", M.U. Research Journal of Engineering & Technology, Vol. 43, No. 4, Oct. 2024, pp. 14-28.
2. E. Khan and Gulistan Raja, "Advancing Crop Protection through Convolutional Neural Networks: A Multi-Plant Disease Classification Study", IJANSER, Vol. 8, No. 3, June 2024, pp. 68-76.
3. M. Qasim and **Gulistan Raja**, "SPIDE-Net: Spectral Prior-based Image Dehazing and Enhancement Network", IEEE Access, Nov. 2022, pp. 120296-120311
4. H. Waris, A. Ahmad, M. Y. Qadri, **Gulistan Raja** and T. N. Malik, "GA-EDA: Hybrid Design Space Exploration Engine for Multicore Architecture", Journal of Circuits Systems and Computers, Vol. 30, No. 10, Aug. 2021.

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5. M. Ayaz, F Shaukat, and **Gulistan Raja**, "Ensemble Learning Based Automatic Detection of Tuberculosis in Chest X-ray Images using Hybrid Feature Descriptors", *Physical and Engineering Sciences in Medicine*, Vol. 44, Issue 1, Mar. 2021, pp.183-194.
6. I. Bibi, J. Mir, and **Gulistan Raja**, "Automated Detection of Diabetic Retinopathy in Fundus Images using Fused Features", *Physical and Engineering Sciences in Medicine*, Vol. 43, Issue 4, Dec. 2020, pp.1253–1264.
7. M. Kashif, **Gulistan Raja**, F. Shaukat, "An Efficient Content based Image Retrieval System for Diagnosis of Lung Diseases", *Journal of Digital Imaging*, pp. 1-17, May 2020.
8. M. Usman, U. Zabit, O. D. Bernal, **Gulistan Raja**, "Blind Identification of Occurrence of Multi-Modality in Laser Feedback Based Self-Mixing Sensor" *Chinese Optics Letters*, Vol. 18, Issue 1, pp. 011201(2020), Jan. 2020.
9. F. Shaukat, K. Javed, **Gulistan Raja**, J. Mir, and M. L. R. Shahid, "Automatic Lung Nodule Detection in CT Images using Convolutional Neural Networks", *IEICE Transactions on Fundamentals on Electronics, Communications and Computer Sciences*, Vol. E102-A, No.10, Oct. 2019, pp.1364-1373.
10. F. Shoukat, **Gulistan Raja**, R. Ashraf, S. Khalid, M. Ahmad and A. Ali, "Artificial Neural Network based Classification of Lung Nodules in CT images using Intensity, Shape and Texture Features", *Journal of Ambient Intelligence and Humanized Computing*, Vol. 10, Issue 10, Oct. 2019, pp. 4135-4149.
11. F. Shaukat, **Gulistan Raja** and A. Frangi, "Computer-Aided Detection of Lung Nodules: A Review", *SPIE Journal of Medical Imaging*, Vol. 6, No. 2, Apr-Jun. 2019.
12. R. Chughtai, **Gulistan Raja**, J. Mir and F. Shaukat, "An Efficient Scheme for Automatic Pill Recognition Using Neural Networks" *The Nucleus Journal*, Vol. 56, No. 1, Jun. 2019, pp. 42-48.
13. M. Usman, U. Zabit, O. D. Bernal, **Gulistan Raja** and T. Bosch, "Detection of Multi-Modal Fringes for Self Mixing based Vibration Measurement", *IEEE Transactions on Instrument and Measurement*, Feb. 2019 (Early Access).
14. A. S. Khattak, **Gulistan Raja** and N. Anjum, "Adaptive Framework for Multi-Feature Hybrid Object Tracking", *Applied Sciences Journal*, Vol. 8, No. 11, Nov. 2018, pp. 1-17.
15. N. U. Ain, F. Shaukat, A.S. Nagra and **Gulistan Raja**, "An Efficient Algorithm for Fingerprint Recognition using Minutiae Extraction", *Pakistan Journal of Science*, Vol. 70, No.2, Jun. 2018, pp. 169-176.
16. F. Shoukat and **Gulistan Raja**, "An Efficient Algorithmic Solution for Automatic Segmentation of Lungs from CT Images", *Pakistan Journal of Science*, Vol. 70, Issue 1, Mar. 2018, pp. 71-78.
17. A. Ehtesham, U. Zabit, O. D. Bernal, **Gulistan Raja**, T. Bosch, "Analysis and Implementation of a Direct Phase Unwrapping Method for Displacement Measurement using Self-Mixing Interferometry", *IEEE Sensors Journal*, Vol. 72, Issue 22, Nov. 2017, pp. 7425-7432.
18. A. A. Siddiqui, U. Zabit, O. D. Bernal, **Gulistan Raja**, T. Bosch, "All Analog Processing of Speckle affected Self-Mixing Interferometric Signals", *IEEE Sensors Journal*, Vol. 17, Issue 18, Sep. 2017, pp. 5892-5899.
19. F. Shaukat, **Gulistan Raja**, A. Gooya and A. F. Frangi, "Fully Automatic and Accurate Detection of Lung Nodules in CT images using a Hybrid Feature Set", *Medical Physics Journal*, Vol. 44, Issue 7, July 2017, pp. 3615–3629.
20. N. Ashraf, F. Shaukat, **Gulistan Raja** and A. K. Khan, "Full-Duplex Millimeter-wave Radio over Fiber with 24 Gbps 4-QAM Downstream Signal in W-Band (75-110GHz)", *Bahria University Journal of Information and Communication Technologies*, Vol. 10, Issue 1, June 2017, pp. 21-28.
21. A. Murtaza, F. Shaukat, **Gulistan Raja** and A.K. Khan, "An Efficient Algorithmic Solution for High Payload Good Imperceptibility Hybrid Image Steganography", *Pakistan Journal of Science*, Vol. 69, Issue 2, June 2017, pp. 228-234.
22. I. Amjad, F. Shaukat, **Gulistan Raja** and A.K. Khan, "An Algorithm to Segment the Mid-Brain Structures Using Multiresolution Non-Rigid Registration ", *Pakistan Journal of Science*, Vol. 69, Issue 2, June 2017, pp. 221-227.
23. A. Khan and **Gulistan Raja**, "FPGA Implementation of HEVC Deblocking Filter for Fast Processing of Super High Resolution Applications", *Turkish Journal of Electrical Engineering and Computer Sciences*, Vol. 24, No. 6, Dec. 2016, pp.4661-4669.
24. M. Asghar, I. Arshad, I. A. Taj, **Gulistan Raja** and A. K. Khan, "Palm and Finger Segmentation of High Resolution Images using Hand Shape and Texture", *Proc. Pakistan Academy of Sciences: A*, Vol. 53, No. 4, Dec. 2016, pp. 401-416.
25. Z. Shabbir, I. Arshad, **Gulistan Raja** and A. K. Khan, "Content Based Image Retrieval using Improved Local Tetra Pattern and Neural Network", *The Nucleus Journal*, Vol. 53, No. 4, Dec. 2016, pp. 225-232.
26. Z. Bashir, **Gulistan Raja** and M. Obaid Ullah, "A Video Enhancement Algorithm for Low-Lighting Environment using FPGA Architecture", *NED University Journal of Research*, Vol. XIII, No. 4, Sep. 2016, pp. 81-89.

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27. S. Arif and **Gulistan Raja**, "Energy and Priority Aware Scheduling Scheme for Wireless Sensor Networks", Bahria University Journal of Information and Communication Technologies, Vol. 9, Issue 1, June 2016, pp. 36-42.
28. M. Z. Ahmad, I. Arshad, **Gulistan Raja** and A. K. Khan, "Textured Cosmetic Contact Lens Detection using Statistical Features and SVM Classifier", Bahria University Journal of Information and Communication Technologies, Vol. 9, Issue 1, June 2016, pp. 23-29.
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List of Courses Taught

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| 1. Digital Systems | 2. Microprocessors and Applications |
| 3. Multimedia Systems and Communication | 4. Digital Image Processing |
| 5. Communication Systems | 6. Modern Electronics |
| 7. Computer Architecture | 8. Analog Filter Design |
| 9. Computer Fundamentals and Programming | 10. Telecommunication Networks |
| 11. Discrete Mathematics | 12. Digital Logic Design |