Curriculum Vitae

Dr. Ihsan ul Haq

Associate Professor, Faculty of Engineering and Technology, FET, IIU, Islamabad, Pakistan, IIU, Islamabad, P a k i s t a n

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RESEARCH AREAS

Image Processing, Hyperspectrral Image Processing, Medical Image Processing, Signal Processing, deep learning, and communication

Research and Teaching Experience

Feb 2016 – Date	**Associate Professor,** International Islamic University, Islamabad, Department of Electrical Engineering Islamabad, Pakistan
Sep 2009 – Feb 2016	**Assistant Professor and Graduation Incharge** International Islamic University, Islamabad, Department of Electrical Engineering Islamabad, Pakistan
Aug 2005 – Aug 2009	**Research Scholar** Beihang University (BUAA), Department of Electronics and Information Engineering Beijing, China

EDUCATION

2005−2009	**Ph.D.** (Electronics and Information Engineering) Beijing University of Aeronautics and Astronautics,
Thesis Title	"Band Clustering and Decision Fusion for Target Detection for Hyperspectral Imagery"
Area of specialization:	Image Processing, Hyperspectral Image Processing, Medical Image Processing, Signal Processing, deep learning and communication
Grade obtained:	First Division

2000−2004	**M.Phil.** (Electronics)
	Department of Electronics, Quaid-i-Azam (QAU)
	University, Islamabad, Pakistan
1998-1999	**M. Sc** (Physics with specialization in Electronics)
	Baha Uddin Zakariya University
	Multan, Pakistan

PROJECTS AND RESEARCH

Research Project
- The Design of an Efficient Computer Aided Diagnosis System for Early Breast Cancer Detection (Approved by HEC, Pakistan under National Research Program for Universities RRPU)
- Punjab Skill Development Fund (Technical Training)
- FATA DA Skill Development Training

Supervision

- **Supervised Students:**

  MSEE: **More than 20**
  PhDEE: **05**
  BSEE: **More than 20**

- **Under Supervision Students:**

  MSEE: **03**
  PhDEE: **03**

Publications (44)

1. Amil Daraz, Suheel Abdullah, Ihsan ul Haq, Khan Bahadar Khan, Ghulam Fareed Laghari and Farhan ZafarGhulam Fareed Laghari, "Modified PID Controller for Automatic Generation Control of Multi-Source Interconnected Power System Using Fitness Dependent Optimizer Algorithm," PLOS ONE, 2020 (accepted and in press). (ISI Indexed, IF: 2.642)

2. Amil Daraz, Suheel Abdullah, Hazlie Mokhlis, Ihsan ul Haq, "Improved-Fitness Dependent Optimizer Based FOI-PD Controller for Automatic Generation Control of Multi-Source Interconnected Power System in Deregulated Environment," IEEE Access, Vol. 8, pp. 197757-197775, 2020. (ISI Indexed, IF: 4.098)

3. Imdad Ali, Muhammad Muzammil, Ihsan Ul Haq, Muhammad Amir and Suheel Abdullah "Efficient Lung Nodule Classification Using Transferable Texture Convolutional Neural Network" IEEE Access, 2020. (ISI Indexed, IF: 4.098)

4. Awais Ahmed, M. Zia, Ihsan Ul Haq, Huy-Dung Han, "Detection of Pilot Contamination Attack for Frequency Selective Channels" IEEE Access, 2020. (ISI

Indexed, IF: 4.098)

5. Amil Daraz, Suheel Abdullah, Hazlie Mokhlis, Ihsan ul Haq, Ghulam Fareed Laghari, and Nurulafiqah Nadzirah Mansor, "Fitness Dependent Optimizer-Based Automatic Generation Control of Multi-Source Interconnected Power System with Non-Linearities" IEEE Access, 2020. (ISI Indexed, IF: 4.098)

6. Muhammad Muzammil, Imdad Ali, Umer Javed, Muhammad Amir, Ihsan Ul Haq, "Spatial Stimuli Gradient Based Multifocus Image Fusion Using Multiple Sized Kernels", Technical Gazette, 2020. (ISI Indexed, IF: 0.644)

7. Awais Ahmed, Muhammad Zia and Ihsan ul Haq, "Secret key acquisition under pilot contamination attack," AEU - International Journal of Electronics and Communications, ELSEVIER, 2019. (ISI Indexed, IF: 2.85)

8. Sajjad Ahmad, Saeed Badshah, Ihsan Ul Haq, Suheel Abdullah Malik, Muhammad Amjad and Mohd Nasir Tamin, "Numerical Investigation of 1 ×7 Steel Wire Strand under Fretting Fatigue Condition," Materials, MDPI, 2019. (ISI Indexed, IF: 2.97)

9. Saeed Badshah, Ahsan Naeem, Amer Farhan Rafique, Ihsan Ul Haq, Suheel Abdullah Malik, "Numerical Study on the Critical Frequency Response of Jet Engine Rotors for Blade-Off Conditions against Bird Strike," Applied Sciences, MDPI, 2019. (ISI Indexed, IF: 2.217)

10. Saeed Badshah, Muhammad Atif, Ihsan Ul Haq, Suheel Abdullah Malik, Mujahid Badshah, Sakhi Jan, "Thermal analysis of vacuum resistance furnace," Processes, 7(12), MDPI, 2019. (ISI Indexed, IF: 1.96)

11. Ali, M. Muzammal, A. Basit and I. Haq, "Modified Adaptive Predict Hexagon Based Search Estimation Algorithm," The Nucleus, 55(4), pp. 164-170, 2018.

12. M. Mohsin Jadoon, Qianni Zhang, Ihsan Ul Haq, Sharjeel Butt, and Adeel Jadoon, "Three-Class Mammogram Classification Based on Descriptive CNN Features," BioMed Research International, Vol. 2017. doi:10.1155/2017/3640901. (ISI Indexed, IF: 2.476)

13. Hayat Ullah, M. Amir, Ihsan Ul Haq, Shafqat Ullah Khan, M. K. A. Rahim and Khan Bahadar Khan, "Wavelet Based De-Noising Using Logarithmic Shrinkage Function," Wireless Personal Communication, 2017. (ISI Indexed, IF: 0.929)

14. Naqvi S.A.G, Zafar H.M.F, Haq I.U, "Hard exudates referral system in eye fundus utilizing speeded up robust features," Int J Ophthalmol., 10(7), pp. 1171–1174. 2017. (Impact Factor: 1.177)

15. Mohsin Jadoon, Qianni Zhang, Ihsan ul haq, "Classification of Mammograms for Breast Cancer Detection based on Curvelet Transform and Multi-Layer

Perceptron," Biomedical Research, Vol. 28(10), pp. 4311-4315, 2017. (ISI Indexed, IF: 2.134)

16. Syed Ali Gohar Naqvi, Muhammad Faisal Zafar, and Ihsan ul Haq, "Referral system for hard Exudates in eye fundus", Computers in Biology and Medicine, Science Direct Elsevier, 2015. (ISI Indexed, IF: 1.836).

17. Faisal Malik, Muhammad Zia, Hasan Mahmood, Naeem Bhatti, and Ihsan Haque, "High Diversity Transceiver for Low Power Differentially Encoded OFDM System," ETRI Journal, 2015. (ISI Indexed, IF:1.116)

18. Suheel Abdullah, I. M. Qureshi, M. Amir, Aqdas Naveed and Ihsan ul Haq, "Numerical Solution to Generalized Burgers'-Fisher Equation Using Exp-Function Method Hybridized with Heuristic Computation, Plos One, 2015. (ISI Indexed, IF: 2.806)

19. Muhammad Zia, Ihsan ul Haq, Naeem Bhatti, Hasan Mahmood, "Selective Chase combining for OSTB coded MIMO-OFDM system," AEU - International Journal of Electronics and Communications, ELSEVIER, 2014. (ISI Indexed, IF: 2.85).

20. Bilal Shoaib, I. M. Qureshi, Ihsanulhaq and Shafqatullah, "A Modified Fractional Least Mean Square Algorithm for Chaotic and Nonstationary Time Series Prediction" Chinese Physics B, Vol. 23(3), 2014, (ISI Indexed, IF:1.223)

21. Bilal Shoaib, I. M. Qureshi, shafqatullah, and Ihsanulhaq, "Adaptive Step Size Modified Fractional Least Mean Square Algorithm for Chaotic time series prediction" Chinese Physics B, Vol. 23(5), 2014, (ISI Indexed, IF:1.223)

22. Suheel Malik, Ijaz Mansoor Qureshi, Muhammad Amir and Ihsanul Haq, "Nature Inspired Computational Technique for the Numerical Solution of Nonlinear Singular Boundary Value Problems Arising in Physiology," The Scientific World Journal, Vol. 2014. (ISI Indexed, IF:1.73)

23. Abdul Basit, I.M. Qureshi, Ihsan ul haq, A.N. Malik and Wasim khan, "Hybridization of Cognitive Radar and Phased Array Radar Having Low Probability of Intercept Transmit Beamforming", International Journal of Antennas and Propagation Volume 2014 (2014). (ISI Indexed, IF: 1.164)

24. Ali, M. Muzammal, A. Basit and I. Haq, "Modified Adaptive Predict Hexagon Based Search Estimation Algorithm," The Nucleus, 55(4), pp. 164-170, 2018.

25. Syed Ali Gohar Naqvi, Muhammad Faisal Zafar, Ihsan ul Haq, "Automated System for Referral of Cotton-Wool Spots," Current Diabetes Reviews, Vol. 12, December 2016.

26. Naqvi S.A.G, Zafar H.M.F, Huq I.U, "Hard Exudates Referral with Artificial

Neural Network", AJEST, 6(1), pp 17-19, 2016.

27. Shoaib, B., Qureshi, I.M., Ullah Khan, S. et al. Kernel fractional affine projection algorithm. Appl Inform. Springer, 2(12), 2015.

28. Naqvi S.A.G, Zafar H.M.F, Huq I.U, "SURF Referral System for Hard Exudates," AJEST, 5(1), pp13-16, 2015.

29. S. A. Malik, I. M. Qureshi, M. Amir, A. N. Malik, and I. Haq, "Numerical solution to Riccati equations using evolutionary algorithm technique Hybridized with Bernstein polynomials," MAGNT Research Report, vol. 2, no. 6, pp. 49-60, 2014. (ISI Indexed)

30. S. A Malik, I. M. Qureshi, M. Amir, and I. Haq, "Numerical solution to nonlinear biochemical reaction model using hybrid polynomial basis differential evolution technique," Advanced Studies in Biology, vol. 6, no. 3, pp. 99 – 113, 2014.

31. Amir A. Khaliq, I.M. Qureshi, Jawad A. Shah, Suheel A. Malik and Ihsanulhaq "Blind Source Separation of fMRI Signals Using Joint Diagonalization Algorithm," Research Journal of Applied Sciences, Engineering and Technology 7(2): 233-239, 2014.

32. Suheel Abdullah Malik, Ijaz Mansoor Qureshi, Muhammad Amir and Ihsanul Haq, "Numerical Solution of Lienard Equation Using Hybrid Heuristic Computation," World Applied Science Journal, Vol. 28(5), pp. 636-643, 2013.

33. Abdul Basit, I.M. Qureshi, Ihsan ul haq, A.N. Malik and Wasim khan, "Evolutionary, Computing Based Antenna Array Beamforming with Low Probability of Intercept Property", World Applied Sciences Journal 23 (11): 1570-1575, 2013.

34. Amir Khaliq, I. M. Qureshi, Jawad Ali Shah and Ihsan Ul Haq, "De-noising Functional Magnetic Resonance Imaging (fMRI) data using an exponential gradient filter", Middle East Journal of Scientific Research 01/2013; Vol. 18(9), pp. 1349-1356, 2013.

35. Bilal Shoaib, I. M Qureshi and Ihsanul Haq, "Square root Extended Kernel Recursive Least Squares Algorithm fo Nonlinear Channel Equalization", Research Journal of Applied Sciences, Engineering and Technology, Vol. 6(13), 2013.

36. Amir A. Khaliq, I. M. Qureshi, Ihsanulhaq, Jawad A Shah, "Independent Component Analysis of Functional Magnetic Resonance Imaging (fMRI) data: A simple Approach," Research journal of applied sciences, engineering and technology, Vol. 5(24), pp. 5494-5502, 2013.

37. Amir A Khaliq, I M Qureshi, Ihsanulhaq, Jawad A Shah, "Detection of brain

activity in functional magnetic resonance imaging data using matrix factorization", Research journal of applied sciences, engineering and technology, Vol. 5(24), pp. 5566-5571, 2013.

38. Malik S. A., Qureshi I. M., Zubair M., Haq I., "Memetic Heuristic Computation for Solving Nonlinear Singular Boundary Value Problems Arising in Physiology," Research Journal of Recent Sciences, Vol. 2(9), pp. 47-55, 2013.

39. Suheel Abdullah Malik, Ijaz Mansoor Qureshi, Muhammad Zubair, and Ihsan ul Haq, "Solution to Force-Free and Forced Duffing-Van der Pol Oscillator Using Memetic Computing", Journal of Basic and Scientific Research, Vol. 2(11), pp. 11136-11148, 2012.

40. Muhammad Ahmad, Sungyoung Lee, Ihsan Ul Haq, Qaisar Mushtaq, "Hyperspectral Remote Sensing: Dimensional Reduction and End Member Extraction", International Journal of Soft Computing and Engineering (IJSCE) ISSN: 2231-2307, Volume-2, Issue-2, pp. 170-175 May 2012.

41. Qaiser Mushtaq, Ihsan ul Haq, Muhammad Ahmad and Muhammad Sohaib, "Hyperspectral Blind Unmixing and Multiple Target Detection Using Linear Mixture Model", Advanced Materials Research Vols. 488-489, pp. 1224-1228, 2012.

42. Muhammad Sohaib, Ihsan-ul-Haq, Qaiser Mushtaq "Dimensional Reduction of Hyperspectral Image Data Using Band Clustring And Selection Based on Statistical Characteristics of Band Images", GCSE 2011, Procedia Engineering, (ISSN: 1877-7058, ELSEVIER).

43. Muhammad Ahmad and Ihsan Ul Haq, "Hyperspectral Unmixing Using Statistics of Q Function", Advanced Materials and Research (AMR), Vol - 403-408, pp. 59-63, 2011.

44. Muhammad Ahmad, Ihsan ul Haq, Qaisar Mushtaq and Muhammad Sohaib, "A New Statistical Approach for Band Clustering and Band Selection Using K-Means Clustering", IJET, Vol 3, Issue no: 6, Singapore, pp. 1793-8244, 2011.

International and Indexed Conference Publications

1. Sheraz Shafique, Nauman Akhtar, I. M Qureshi, Ihsan-Ul-Haq and Ahsan Kashif "Behavioral LNA Model in SIMULINK for S-band Applications," INMIC 2016.

2. I. Khan, S. Badshaha, M. N. Akhtarb, and I. U. Haq, "Investigation of SEIG in Renewable Energy," 2nd Conference on Sustainability in Process Industries (SPI 2014) 22nd May 2014.

3. Muhammad Ahmad, Ihsan Ul Haq and K.A. bhatti, "Hyperspectral Unmixing Using Statistics of Q function", 7th International Conference on MEMS, NANO and Smart Systems (ICMENS 2011), Kuala Lumpur, Malaysia. **(EI indexed)**

4. Muhammad Ahmad and Dr. Ihsan Ul Haq, "Linear Unmixing and Target Detection of Hyperspectral Imagery Using OSP", 2011 International Conference on Modeling, Simulation and Control, IPCSIT vol.10, pp. 179-183 2011. **(EI indexed)**

5. Muhammad Ahmad, Ihsan Ul Haq and Qaisar Mushtaq, "AIK Method for Band Clustering Using Statistics of Correlation and Dispersion Matrix", International Conference on Information Communication and Management, In proceedings of IPCIST, Vol-16, pp. 114-118, Oct 2011, Singapore. **(EI indexed)**

6. Muhammad Ahmad, Ihsan ul Haq, Qaisar Mushtaq, and Muhammad Sohaib, "New Statistical Approach for Band Clustering and Band Selection Using K-Means Clustering," IACSIT International Journal of Engineering and Technology, Vol. 3, No. 6, December 2011.

7. Ul Haq, Ihsan, Xiaojian Xu, "A new approach to band clustering and selection for hyperspectral imagery," Signal Processing, 2008. ICSP 2008. IEEE Proceeding on, pp.1198-1202, 26-29 Oct. 2008. (EI indexed)

8. Ihsan ul Haq, Xiaojian Xu and Aamir Shahzad, "Band clustering and selection and decision fusion for target detection in hyperspectral imagery," Acoustics, Speech, and Signal Processing, IEEE Proceeding on, pp. 1101-1104, 2009. (EI indexed)

9. Ihsan ul Haq, Xiaojian Xu, "Band selection and decision fusion for target detection in Hyperspectral imagery," Industrial Electronics and Applications, 2009. ICIEA 2009. IEEE Proceeding on, pp.1468-1471, 25-27 May 2009. (EI indexed)

10. Rahman, N. Zia-Ul-Haq, Ihsan ul Haq, "Design and Coordination of Reactive Behaviors for Tracking Multiple Targets in an Unstructured Environment," IEEE Proceedings of Technologies, 2006, ICET '06, pp.636-642. (EI indexed)

11. Qazi, Z. S. M., Zhiliang Wang, Haq, I.-U., "Human likeness of humanoid robots exploring the uncanny valley," Emerging Technologies, 2006. ICET '06. IEEE Proceeding on, pp.650-656, 13-14 Nov. 2006. (EI indexed)