

Farhan Hussain

Associate Professor

College of Electrical & Mechanical Engineering

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About

Dr. Farhan Hussain is working as Associate Professor in the College of Electrical & Mechanical Engineering. Dr. Farhan Hussain has a PhD in Machine Learning, Neural Networks, Image Compression, Nand Based Flash Memory Systems. Dr. Farhan Hussain has published 36 research articles & conference papers having a citation count of 370, carried out 2 projects and filed 1 intellectual property.

Qualifications

PhD in Machine Learning, Neural Networks, Image Compression, Nand Based Flash Memory Systems Hanyang University , Korea	2012 - 2015
MS in Image & Signal Processing/Compression Hanyang University , Korea	2007 - 2009
BS in Electrical Engineering UET Peshawar , Pakistan	2002 - 2006
F.Sc in Pre-Engineering BISE, Peshawar , Pakistan	1999 - 2001

Experience

Associate Professor College of Electrical & Mechanical Engineering	2022- Present
Assistant Professor College of Electrical & Mechanical Engineering	2019 - 2022
Assistant Professor College of Electrical & Mechanical Engineering	2016 - 2019
Assistant Professor College of Electrical & Mechanical Engineering	2016 - 2016
Head of Department Abasyn University, Islamabad , Abasyn University, Meherban Colony Chatta Bakhtawar, Islamabad, Islamabad Capital Territory	2015 - 2016
Assistant Professor IQRA National University , IQRA National University, Phase-2, Hayatabad, Peshawar	2009 - 2015
Lecturer Sarhad University of Information Technology , Landi Akhun Ahmad, Hayatabad Link. Ring Road, Peshawar, Pakistan	2007 - 2007
Lecturer COMSATS , University Road, Abbottabad Pakistan	2006 - 2006

Awards

Excellence Scholarship Aw Excellence Scholarship Award for under-graduate studies
Merit Scholarship Award f Merit Scholarship Award for intermediate studies.
Honor Bachelor of Science in Electrical Engineering with Honors.

Research Projects

National Projects

Robust Communication Solution for Drone Swarm based Patrolling Operations Funding Agency: HEC Amount: PKR 82,571,295.00 Status: Approved_inprocess	2022
On Accuracy of Model Reduction Techniques for a Unified Modelling and Simulation Framework of Power, Water and Gas Distribution Networks Funding Agency: HEC Amount: PKR 7,174,000.00 Status: Completed	2022

International Projects

Research Articles

CAM-Net: enhancing visibility in hazy images with convolutional attention mechanisms <i>Syeda Rabail Zahra Farhan Hussain</i> <i>Signal, Image and Video Processing</i> , Volume:19, Issue:5, Article Number 350 Impact Factor: 2.000 Quartile: 3 DOI: https://doi.org/10.1007/s11760-025-03928-9	2025
AI-CADR: Artificial Intelligence Based Risk Stratification of Coronary Artery Disease using Novel Non-invasive Biomarkers <i>Muhammad Sajid Ali Hassan Dilshad Ahmed Khan Shoab Ahmed Khan Asim Dilawar Bakhshi Muhammad Usman Akram Mishal Babar Farhan Hussain Wadood Abdul</i> <i>IEEE Journal of Biomedical and Health Informatics</i> , Volume:28, Issue:12, Page(s):7543-7552 Impact Factor: 6.700 Quartile: 1 Citations: 3 DOI: https://doi.org/10.1109/JBHI.2024.3453911	2024
Enhanced Spatial Stream of Two-Stream Network Using Optical Flow for Human Action Recognition <i>Shahbaz Khan Ali Hassan Farhan Hussain Aqib Perwaiz Maazen Alsabaan Farhan Riaz Wadood Abdul</i> <i>Applied Sciences</i> , Volume 13, Issue 14, Article Number 8003 Impact Factor: 2.7 Quartile: 2 Citations: 10 DOI: https://doi.org/10.3390/app13148003	2023
Gabor Contrast Patterns: A Novel Framework to Extract Features From Texture Images <i>Farhan Riaz Farhan Hussain Muhammad Umar Farooq Abdul Wahab Muzaffar Tarik Abuain Waleed Abdel Karim Abu-Ain Muhammad Ajmal Azad</i> <i>IEEE Access</i> , Volume 11, Pages 60324-60334 Impact Factor: 3.9 Quartile: 2 Citations: 6 DOI: 10.1109/ACCESS.2023.3280053	2023
A Fast and Accurate Real-Time Vehicle Detection Method Using Deep Learning for Unconstrained Environments <i>Annam Farid Farhan Hussain Khurram Khan Mohsin Shahzad Uzair Khan Zahid Mahmood</i> <i>Applied Sciences</i> , Volume 13, Issue 5, Article Number 3059 Impact Factor: 2.7 Quartile: 2 Citations: 73 DOI: https://doi.org/10.3390/app13053059	2023
Knowledge and Data-Driven Framework for Designing a Computerized Physician Order Entry System <i>Sidra Ejaz Brig. Shoab Ahmed Khan Farhan Hussain</i> <i>IEEE Access</i> , Volume 10, Pages 40953-40966 Impact Factor: 3.367 Quartile: 2 Citations: 6 DOI: 10.1109/ACCESS.2022.3167517	2022
Multi-focus images fusion via residual generative adversarial network <i>Qingyu Mao Xiaomin Yang Rongzhu Zhang Gwanggil Jeon Farhan Hussain Kai Liu</i> <i>Multimedia Tools and Applications</i> , Volume 81, Issue 9 Pages 12305-12323 Impact Factor: 2.757 Quartile: 2 Citations: 8	2022

DOI: https://doi.org/10.1007/s11042-021-11278-0	
Need-Based and Optimized Health Insurance Package Using Clustering Algorithm	2021
<i>Irum Matloob Brig. Shoab Ahmed Khan Farhan Hussain Wasi Haider Butt Rukaiya Rukaiya Fatima Khaliq</i>	
<i>Applied Sciences</i> , Volume 11, Issue 18, Article No. 8478	
Impact Factor: 2.679 Quartile: 2 Citations: 7	
DOI: 10.3390/app11188478	
LMSN: a lightweight multi-scale network for single image super-resolution	2021
<i>Yiye Zou Xiaomin Yang Marcelo Keese Albertini Farhan Hussain</i>	
<i>Multimedia Systems</i> , Volume 27, Pages 845-856	
Impact Factor: 2.603 Quartile: 2 Citations: 5	
DOI: https://doi.org/10.1007/s00530-020-00720-2	
A Framework for Classification of Gabor Based Frequency Selective Bone Radiographs Using CNN	2021
<i>Rehan Nemati Farhan Riaz Ali Hassan Saad Rehman Muhammad Ajmal Azad Muhammad Abbas Farhan Hussain Saddam Rubab</i>	
<i>Arabian Journal of Science and Engineering</i> , Volume 46, Pages 4141-4152	
Impact Factor: 2.807 Quartile: 2 Citations: 2	
DOI: https://doi.org/10.1007/s13369-021-05339-7	
A Novel Self-Forming Virtual Sub-Nets Based Cross-Layer MAC Protocol for Multihop Tactical Network	2021
<i>Rukaiya Rukaiya Farhan Hussain Shoab Ahmed Khan Muhammad Umar Farooq</i>	
<i>Applied Sciences</i> , Volume 11(6), Article Number 2470	
Impact Factor: 2.838 Quartile: 2 Citations: 3	
DOI: 10.3390/app11062470	
CFFD-MAC: A Hybrid MAC for Collision Free Full-Duplex Communication in Wireless Ad-Hoc Networks	2021
<i>Rukaiya Rukaiya Farhan Hussain Adnan Akhonzada Shoab Ahmed Khan Muhammad Umar Farooq</i>	
<i>IEEE Access</i> , Volume 9, Page 35584-35598	
Impact Factor: 3.476 Quartile: 2 Citations: 15	
DOI: 10.1109/ACCESS.2021.3061943	
Multiscale channel attention network for infrared and visible image fusion	2020
<i>Jiahui Zhu Qingyu Dou Lihua Jian Kai Liu Farhan Hussain Xiaomin Yang</i>	
<i>Concurrency and Computation-Practice and Experience</i> , Pages 1-15	
Impact Factor: 1.536 Quartile: 3 Citations: 11	
DOI: https://doi.org/10.1002/cpe.6155	
Image super-resolution with parallel convolution attention network	2020
<i>Qiao Zhang Xiaomin Yang Long Xiao Feng Yang Farhan Hussain Pyoung Won Kim</i>	
<i>Concurrency and Computation: Practice and Experience</i> , Pages 1-10	
Impact Factor: 1.536 Quartile: 3 Citations: 2	
DOI: DOI: 10.1002/cpe.6109	
A novel framework for generating handwritten datasets	2020
<i>Sajid Anwar Bilal Mehrban Musawar Ali Farhan Hussain Zahid Halim</i>	
<i>Multimedia Tools and Applications</i> , Pages 1-13	
Impact Factor: 2.757 Quartile: 2 Citations: 2	
DOI: 10.1007/s11042-020-09545-7	
Medical Health Benefit Management System for Real-Time Notification of Fraud Using Historical Medical Records	2020
<i>Irum Matloob Shoab Ahmad Khan Habib-ur-Rahman Farhan Hussain</i>	
<i>Applied Sciences</i> , Volume 10(15), Article Number 26	
Impact Factor: 2.679 Quartile: 2 Citations: 10	
DOI: https://doi.org/10.3390/app10155144	
Finger-Counting-Based Gesture Recognition within Cars Using Impulse Radar with Convolutional Neural Network	2019
<i>Shahzad Ahmed Faheem Khan Asim Ghaffar Farhan Hussain Sung Ho Cho</i>	
<i>Sensors</i> , Volume 19, Issue 6, Article Number 1429	
Impact Factor: 3.275 Quartile: 1 Citations: 45	
DOI: 10.3390/s19061429	
CPS-based fully automatic cardiac left ventricle and left atrium segmentation in 3D MRI	2019
<i>Ibtihaj Ahmad Farhan Hussain Shoab Ahmed Khan Usman Akram Gwanggil Jeon</i>	

Impact Factor: 1.851 | **Quartile:** 3 | **Citations:** 5

DOI: 10.3233/JIFS-169974

Analysis of PCG signals using quality assessment and homomorphic filters for localization and classification of heart sounds

2018

Qurat-ul-Ain Mubarak Muhammad Usman Akram Arsalan Shaukat Farhan Hussain Sajid Gul Khawaja Wasi Haider Butt
Computer Methods and Programs in Biomedicine, Volume: 164, Pages 143-157

Impact Factor: 3.424 | **Quartile:** 1 | **Citations:** 59

DOI: 10.1016/j.cmpb.2018.07.006

Efficient motion estimation using two?bit transform and modified multilevel successive elimination

2018

Farhan Hussain Mian Ilyas Ahmad Sajid Anwar Aimal Khan Pyoung Won Kim
Journal of Ambient Intelligence and Humanized Computing, pp 1–7

Impact Factor: 1.910 | **Quartile:** 3 | **Citations:** 1

DOI: 10.1007/s12652-018-0996-8

Development and prospects of surface passivation schemes for high-efficiency c-Si solar cells

2018

Atteq ur Rehman Muhammad Zahir Iqbal Muhammad Fahad Bhopal Muhammad Farooq Khan Farhan Hussain Javed Iqbal Mahmood Khan Soo Hong Lee
Solar Energy, NULL

Impact Factor: 4.674 | **Quartile:** 1 | **Citations:** 35

DOI: 10.1016/j.solener.2018.03.025

Exponential utility function based criteria for network selection in heterogeneous wireless networks

2018

Mian Ilyas Ahmad Shoaib Khan Farhan Hussain
Electronics Letters, NULL

Impact Factor: 1.343 | **Quartile:** 3 | **Citations:** 6

DOI: 10.1049/el.2017.2673

Analysis of channel uncertainty in ARQ relay networks

2018

Hina Ajmal Aimal Khan Saad Rehman Farhan Hussain Mohammad Alam Rupert Young
PLoS ONE, Volume 13(1), Article Number e0190622

Impact Factor: 2.776 | **Quartile:** 2

DOI: 10.1371/journal.pone.0190622

Efficient Deep Neural Network for Digital Image Compression Employing Rectified Linear Neurons

2016

Farhan Hussain Jechang Jeong
Journal of Sensors, Article Number 3184840

Impact Factor: 1.704 | **Quartile:** 2 | **Citations:** 20

DOI: 10.1155/2016/3184840

Visibility Enhancement of Scene Images Degraded by Foggy Weather Conditions with Deep Neural Networks

2016

Farhan Hussain Jechang Jeong
Journal of Sensors, Article Number 3894832

Impact Factor: 1.704 | **Quartile:** 2 | **Citations:** 30

DOI: 10.1155/2016/3894832

Conference Proceedings

Reconfigurable Architecture for Real-time Decoding of Canonical Huffman Codes

2022

Rimsha Tariq Dr Sajid Gul Khawaja Dr Muhammad Usman Akram Dr Farhan Hussain
2022 2nd International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(282.)

Citations: N/A

DOI: 10.1109/ICoDT255437.2022.9787442

Latest Trends in Automatic Glioma Tumor Segmentation and an Improved Convolutional Neural Network based Solution

2019

Muhammad Kaab Zarrar Farhan Hussain Muhammad Mohsin Khan Rubab Sheikh
13th International Conference on Mathematics, Actuarial Science, Computer Science and Statistics (MACS), res.country(177.)

Citations: N/A

DOI: 10.1109/MACS48846.2019.9024815

Localization of Phonocardiogram Signals Using Multilevel Threshold and Support Vector Machine

2019

Zo-Afshan Anam Abid Farhan Hussain

<i>IEEE International Symposium on Signal Processing and Information Technology (ISSPIT)</i> , res.country(2,)	
Citations: N/A	
DOI: 10.1109/ISSPIT47144.2019.9001745	
Towards the Selection of Best Machine Learning Model for Student Performance Analysis and Prediction	2019
<i>Muhammad Faisal Masood Aimal Khan Farhan Hussain Arslan Shaukat Babar Zeb Rana Muhammad Kaleem Ullah</i>	
<i>6th International Conference on Soft Computing & Machine Intelligence (ISCMI)</i> , res.country(247,)	
Citations: 6	
DOI: 10.1109/ISCMI47871.2019.9004299	
SHANZ Algorithm for QoE Enhancement of HTTP based Adaptive Video Streaming	2019
<i>Muhammad Umar Farooq Farhan Hussain Shahid Nabi</i>	
<i>IEEE 11th International Conference on Communication Software and Networks (ICCSN 2019) 2019 IEEE 11th International Conference on Communication Software and Networks (ICCSN 2019)</i> , res.country(48,)	
Citations: N/A	
DOI: 10.1109/ICCSN.2019.8905278	
Comparative study of local binary pattern and its shifted variant for osteoporosis identification	2018
<i>Hina Ajmal Farhan Hussain Muhammad Abbas Saad Rehman Aimal Khan Rupert Young Mohammad S. Alam</i>	
<i>SPIE Defense + Security 2018 Conference</i> , res.country(233,)	
Citations: N/A	
DOI: 10.1117/12.2304721	
Exploiting deep neural networks for digital image compression	2015
<i>Farhan Hussain Jechang Jeong</i>	
<i>2015 2nd World Symposium on Web Applications and Networking (WSWAN)</i> , res.country(221,)	
Citations: N/A	
DOI: 10.1109/WSWAN.2015.7210294	
Memory data reorganization for performance improvement of HEVC DCT	2014
<i>Hyunwoo Kim Song Hyun Jo Farhan Hussain Yong Ho Song</i>	
<i>IEEE International Conference on Electronics, Information and Communications, Kota Kinabalu, Malaysia</i> , res.country(157,)	
Citations: N/A	
DOI: 10.1109/ELINFOCOM.2014.6914388	
Lifetime enhancement of NAND flash memory-based storage system by bad block reuse scheme	2014
<i>Taeyeong Huh Farhan Hussain Sanghyuk Jung Yong Ho Song</i>	
<i>2014 International Conference on Electronics, Information and Communications (ICEIC)</i> , res.country(157,)	
Citations: N/A	
DOI: 10.1109/ELINFOCOM.2014.6914377	
Management scheme of address mapping information for NAND storage system	2014
<i>Huijeong Kim Farhan Hussain Sanghyuk Jung Yong Ho Song</i>	
<i>2014 International Conference on Electronics, Information and Communications (ICEIC)</i> , res.country(157,)	
Citations: N/A	
DOI: 10.1109/ELINFOCOM.2014.6914369	
A New Demapping Technique for 16-APSK Modulation for Digital Video Broadcasting in AWGN Channel	2008
<i>Pervaiz Ali Farhan Hussain Jechang Jeong</i>	
<i>2008 Third International Conference on Convergence and Hybrid Information Technology</i> , res.country(121,)	
Citations: N/A	
DOI: 10.1109/ICCIT.2008.346	

Editorial Activities

Transactions on Internet Technology Reviewed Papers for Journals Impact Factor: 5.15	2023
Remote Sensing Reviewed Papers for Journals Impact Factor: 5	2023
Pattern Recognition Reviewed Papers for Journals Impact Factor: 8.51	2022
IEEE Access Reviewed Papers for Journals Impact Factor: 3.745	2022

Intellectual Property

Copyrights Software for the Annotation and Labeling of Gastroenterology Images Status: Filed	2022
Patents	
Industrial Designs	
Trademarks	