

# Muhammad Moazam Fraz

Professor

School of Electrical Engineering and Computer Science

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## About

Dr. Muhammad Moazam Fraz is working as Professor in the School of Electrical Engineering and Computer Science. Dr. Muhammad Moazam Fraz has a PhD in Computer Vision and Pattern Recognition. Dr. Muhammad Moazam Fraz has published 136 research articles & conference papers having a citation count of 4528, carried out 14 projects and filed 13 intellectual property.

## Qualifications

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| <b>PhD in Computer Vision and Pattern Recognition</b><br>Kingston University , United Kingdom | 2010 - 2013 |
| <b>MS in Computer Software Engineering</b><br>NUST, Islamabad , Pakistan                      | 2005 - 2008 |
| <b>BS in Software Engineering</b><br>Foundation University Islamabad , Pakistan               | 1999 - 2003 |

## Experience

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| <b>Professor</b><br>School of Electrical Engineering and Computer Science                        | 2023- Present |
| <b>Associate Professor</b><br>School of Electrical Engineering and Computer Science              | 2019 - 2023   |
| <b>Assistant Professor</b><br>School of Electrical Engineering and Computer Science              | 2014 - 2019   |
| <b>Assistant Professor</b><br>School of Electrical Engineering and Computer Science              | 2014 - 2014   |
| <b>Senior Research Fellow</b><br>University of Warwick , Coventry, United Kingdom                | 2018 - 2019   |
| <b>Post Doctoral Research Asst.</b><br>Kingston University London , Kingston Upon Thames, London | 2013 - 2014   |
| <b>Principal Software Engineer</b><br>Elixir Technologies Corporation , TF Complex               | 2003 - 2010   |

## Awards

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|---|------|
| <b>SEECs Best Researcher</b><br>SEECs Best Researcher 2020  | 2021 |
| <b>World Top 2% researchers</b>   | 2020 |
| <b>UK Alumni Award</b><br>British Council's UK Alumni Awards 2020 in the Professional Achievement category  | 2020 |
| <b>Rutherford Fellowship</b><br>Rutherford Visiting Fellow : The Alan Turing Institute United Kingdom (UK's National Center for Data Science and Artificial Intelligence) | 2018 |
| <b>Best Graduate Award</b><br>Gold Medal for 'Best Graduate Award'  | 2003 |
| <b>President's Gold Medal</b><br>Gold Medal for securing Top Position in the batch.   | 2003 |



## Research Projects

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### National Projects

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| <b>Interactive Wellness Monitoring Platform with KIOSK Interface and Gamification</b><br><b>Funding Agency:</b> NUST<br><b>Amount:</b> PKR 500,000.00<br><b>Status:</b> Approved_inprocess  | 2025 |
| <b>Ba-Ikhtiyar Jawan: Upscaling &amp; Digitisation of Vocational Education Curriculum in Pakistan</b><br><b>Funding Agency:</b> DAAD - German Academic Exchange Service<br><b>Amount:</b> PKR 59,589,000.00<br><b>Status:</b> Approved_inprocess          | 2025 |
| <b>S2Cool : Super-efficient Sustainable Cooling Solution for All Applications</b><br><b>Funding Agency:</b> UK Research and Innovation<br><b>Amount:</b> PKR 93,850,000.00<br><b>Status:</b> Approved_inprocess   | 2025 |
| <b>ICESCO Chair of Data Science and Analytics for Business at NUST</b><br><b>Funding Agency:</b> Islamic World Educational, Scientific and Cultural Organization (ICESCO)<br><b>Amount:</b> PKR 22,920,000.00<br><b>Status:</b> Approved_inprocess        | 2023 |
| <b>Design and Development Indigenous BaatGPT with AGI Applications Support (Phase-I)</b><br><b>Funding Agency:</b> NUST<br><b>Amount:</b> PKR 80,000,000.00<br><b>Status:</b> Completed   | 2023 |
| <b>CASREW : Uncovering Abiotic Stress in Rain-Fed Wheat Crop through UAV based Multi-Sensor Imagery Fusion</b><br><b>Funding Agency:</b> DAAD - German Academic Exchange Service<br><b>Amount:</b> PKR 15,406,148.00<br><b>Status:</b> Approved_inprocess | 2023 |
| <b>Towards on-device Classification of Fruit Diseases</b><br><b>Funding Agency:</b> NUST<br><b>Amount:</b> PKR 1,000,000.00<br><b>Status:</b> Completed   | 2022 |
| <b>Enabling Smart Yield Boosting: Rice Phenology Estimation Using Airborne Multispectral Remote Sensing Data</b><br><b>Funding Agency:</b> DAAD<br><b>Amount:</b> PKR 8,711,605.00<br><b>Status:</b> Completed  | 2021 |
| <b>CoPEST : Cotton Pest Prevalence Estimation System for Early Warning using UAV &amp; AIoT</b><br><b>Funding Agency:</b> DAAD Germany<br><b>Amount:</b> PKR 7,934,530.00<br><b>Status:</b> Approved_inprocess  | 2021 |
| <b>An AI enabled quasi-real-time water quality monitoring for early chemical and/or bio-contamination detection</b><br><b>Funding Agency:</b> Asi@Connect<br><b>Amount:</b> PKR 29,699,329.00<br><b>Status:</b> Approved_inprocess                        | 2021 |
| <b>PEEOS: Phenology Estimation of Rice and Wheat in Pakistan using Earth Observation Satellite Imagery</b><br><b>Funding Agency:</b> HEC<br><b>Amount:</b> PKR 19,950,000.00<br><b>Status:</b> Completed  | 2021 |
| <b>AIDPath: AI based Digital Pathology for precision cancer diagnostics</b><br><b>Funding Agency:</b> NCAI<br><b>Amount:</b> PKR 1,368,000.00<br><b>Status:</b> Completed   | 2021 |

### International Projects

Industry Projects

National Projects

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| 8th Quarterly Payment of NUST-OneScreen Collaboration      | 2023 |
| Client: OneScreen Solution ( registered as Clarylcon)      |      |
| Amount: PKR 1,506,176.00                                   |      |
| Status: Completed  |      |
| SiBot: A Spin-Off Company of NUST Flagship Project BaatGPT | 2024 |
| Client: NUST   |      |
| Amount: PKR 80,000,000.00                                  |      |
| Status: Approved_inprocess                                 |      |

International Projects

Research Articles

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|---|------|
| TVFace: towards large-scale unsupervised face recognition in video streams  | 2025 |
| Atif Khurshid Bostan Khan Muhammad Shahzad Muhammad Moazam Fraz   |      |
| Pattern Analysis and Applications , Volume 28, Article Number 88  |      |
| Impact Factor: 3.700   Quartile: 2  |      |
| DOI: 10.1007/s10044-025-01464-3   |      |
| CompSafeNano project: NanoInformatics approaches for safe-by-design nanomaterials   | 2025 |
| Muhammad Moazam Fraz Dimitrios Zouraris Angelos Mavrogiorgis Andreas Tsoumanis Laura Aliisa Saarimäki Giusy del Giudice Iseult Lynch Antreas Afantitis              |      |
| Computational and Structural Biotechnology Journal, Volume:29, Pages 13-28  |      |
| Impact Factor: 4.500   Quartile: 1   Citations: 2   |      |
| DOI: 10.1016/j.csbj.2024.12.024   |      |
| A two-stage regression framework for automated cephalometric landmark detection incorporating semantically fused anatomical features and multi-head refinement loss | 2024 |
| Muhammad Anwaar Khalid Atif Khurshid Kanwal Zulfiqar Ulfat Bashir Muhammad Moazam Fraz  |      |
| Expert Systems with Applications , Volume 255, Part D, Article Number 124840  |      |
| Impact Factor: 7.500   Quartile: 1   Citations: 7   |      |
| DOI: 10.1016/j.eswa.2024.124840   |      |
| Beyond local patches: Preserving global-local interactions by enhancing self-attention via 3D point cloud tokenization  | 2024 |
| Muhammad Shahzad Saqib Ali Khan Muhammad Moazam Fraz Xiao Xiang Zhu Muhammad Qasim Khan   |      |
| Pattern Recognition , Volume 155, Article Number 110712   |      |
| Impact Factor: 7.500   Quartile: 1  |      |
| DOI: 10.1016/j.patcog.2024.110712   |      |
| Cloud security in the age of adaptive adversaries: A game theoretic approach to hypervisor-based intrusion detection  | 2024 |
| Sadia Ahsan Saadat Yasir Faheem Zainab Abaid Muhammad Moazam Fraz   |      |
| Journal of Systems Architecture, Volume 156, Article Number 103281  |      |
| Impact Factor: 3.8   Quartile: 1  |      |
| DOI: https://doi.org/10.1016/j.sysarc.2024.103281   |      |
| AFINITI: Attention-Aware Feature Integration for Nuclei Instance Segmentation and Type Identification   | 2024 |
| Esha Sadia Nasir Shahzad Rasool Raheel Nawaz Muhammad Moazam Fraz   |      |
| Neural Computing and Applications , Pages 1-19  |      |
| Impact Factor: 4.500   Quartile: 2   Citations: 1   |      |
| DOI: 10.1007/s00521-024-10114-4   |      |
| Vision Based 3D Localization of UAV Using Deep Image Matching   | 2024 |
| Mansoor Khurshid Muhammad Shahzad Hasan Ali Khattak Muhammad Imran Malik Muhammad Moazam Fraz   |      |
| IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, Volume: 17, Pages: 12020-12030  |      |
| Impact Factor: 4.700   Quartile: 1   Citations: 3   |      |
| DOI: 10.1109/JSTARS.2024.3422310  |      |
| Intelligent Fisheries: Cognitive Solutions for Improving Aquaculture Commercial Efficiency Through Enhanced Biomass Estimation and Early Disease Detection          | 2024 |

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|---|--|------|
| <p><i>Kanwal Aftab Linda Tschirren Boris Pasini Peter Zeller Bostan Khan Muhammad Moazam Fraz</i><br/> <i>Cognitive Computation</i> , Volume: 16, Pages: 2241-2263,<br/> <b>Impact Factor:</b> 4.3   <b>Quartile:</b> 1   <b>Citations:</b> 3<br/> <b>DOI:</b> 10.1007/s12559-024-10292-2</p>   |  |      |
| <p><b>From Pixels to Prognosis: A Survey on AI-Driven Cancer Patient Survival Prediction Using Digital Histology Images</b></p> <p><i>Muhammad Moazam Fraz Arshi Pervaiz Esha Sadia Nasir</i><br/> <i>Journal of Imaging Informatics in Medicine</i>, Pages 1-24<br/> <b>Impact Factor:</b> N/A   <b>Citations:</b> 4<br/> <b>DOI:</b> <a href="https://doi.org/10.1007/s10278-024-01049-2">https://doi.org/10.1007/s10278-024-01049-2</a></p>  |  | 2024 |
| <p><b>PakVehicle-ReID: a multi-perspective benchmark for vehicle re-identification in unconstrained urban road environment</b></p> <p><i>Hasan Ali Asghar Bostan Khan Zuhair Zafar Aznul Qalid Md Sabri Muhammad Moazam Fraz</i><br/> <i>Multimedia Tools and Applications</i> , Pages 1-16<br/> <b>Impact Factor:</b> 3.6   <b>Quartile:</b> 2   <b>Citations:</b> 4<br/> <b>DOI:</b> <a href="https://doi.org/10.1007/s11042-023-17070-6">https://doi.org/10.1007/s11042-023-17070-6</a></p>                          |  | 2023 |
| <p><b>CGA-Net: channel-wise gated attention network for improved super-resolution in remote sensing imagery</b></p> <p><i>Bostan Khan Adeel Mumtaz Zuhair Zafar Mohamed Sedkey Elhadj Benkhelifa Muhammad Moazam Fraz</i><br/> <i>Machine Vision and Applications</i> , Volume 34, Issue 6, Article Number 128<br/> <b>Impact Factor:</b> 3.3   <b>Quartile:</b> 2   <b>Citations:</b> 3<br/> <b>DOI:</b> 10.1007/s00138-023-01477-0</p>  |  | 2023 |
| <p><b>Person re-identification: A retrospective on domain specific open challenges and future trends</b></p> <p><i>Asmat Zahra Nazia Perwaiz Muhammad Shahzad Muhammad Moazam Fraz</i><br/> <i>Pattern Recognition</i> , Volume 142, Article Number: 109669<br/> <b>Impact Factor:</b> 8.0   <b>Quartile:</b> 1   <b>Citations:</b> 58<br/> <b>DOI:</b> 10.1016/j.patcog.2023.109669</p>  |  | 2023 |
| <p><b>Breast lesions segmentation and classification in a two-stage process based on Mask-RCNN and Transfer Learning</b></p> <p><i>Hama Soltani Mohamed Amroune Issam Bendib Mohamed-Yassine Haouam Elhadj Benkhelifa Muhammad Moazam Fraz</i><br/> <i>Multimedia Tools and Applications</i> , Pages 1-18<br/> <b>Impact Factor:</b> 3.6   <b>Quartile:</b> 2   <b>Citations:</b> 5<br/> <b>DOI:</b> <a href="https://doi.org/10.1007/s11042-023-16895-5">https://doi.org/10.1007/s11042-023-16895-5</a></p>            |  | 2023 |
| <p><b>Boosting facial recognition capability for faces wearing masks using attention augmented residual model with quadruplet loss</b></p> <p><i>Muhammad Aasharib Nawshad Ahsan Saadat Muhammad Moazam Fraz</i><br/> <i>Machine Vision and Applications</i> , Volume 34, Issue 6, Article Number 108<br/> <b>Impact Factor:</b> 3.3   <b>Quartile:</b> 2   <b>Citations:</b> 4<br/> <b>DOI:</b> <a href="https://doi.org/10.1007/s00138-023-01461-8">https://doi.org/10.1007/s00138-023-01461-8</a></p>                |  | 2023 |
| <p><b>Vision Transformers in medical computer vision—A contemplative retrospection</b></p> <p><i>Arshi Pervaiz Muhammad Anwar Khalid Rukhsana Zafar Huma Ameer Muhammad Ali Muhammad Moazam Fraz</i><br/> <i>Engineering Applications of Artificial Intelligence</i> , Volume 122, Article Number 106126<br/> <b>Impact Factor:</b> 7.802   <b>Quartile:</b> 1   <b>Citations:</b> 166<br/> <b>DOI:</b> <a href="https://doi.org/10.1016/j.engappai.2023.106126">https://doi.org/10.1016/j.engappai.2023.106126</a></p> |  | 2023 |
| <p><b>TransPose Re-ID: transformers for pose invariant person Re-identification</b></p> <p><i>Nazia Perwaiz Muhammad Shahzad Muhammad Moazam Fraz</i><br/> <i>Journal of Experimental &amp; Theoretical Artificial Intelligence</i>, Pages:14<br/> <b>Impact Factor:</b> 2.296   <b>Quartile:</b> 3<br/> <b>DOI:</b> 10.1080/0952813X.2023.2214570</p>  |  | 2023 |
| <p><b>Nuclei probability and centroid map network for nuclei instance segmentation in histology images</b></p> <p><i>Syed Naayan Rashid Muhammad Moazam Fraz</i><br/> <i>Neural Computing and Applications</i> , Vol:35, Pages15447-15460<br/> <b>Impact Factor:</b> 6.0   <b>Quartile:</b> 2   <b>Citations:</b> 13<br/> <b>DOI:</b> 10.1007/s00521-023-08503-2</p>  |  | 2023 |

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| <b>Robust malware clustering of windows portable executables using ensemble latent representation and distribution modeling</b><br><i>Syed Khurram Jah Rizwi Muhammad Moazam Fraz</i><br><i>Concurrency and Computation Practice and Experience</i> , Volume 35, Issue 8, Article Number e7621<br><b>Impact Factor:</b> 1.831   <b>Quartile:</b> 3<br><b>DOI:</b> <a href="https://doi.org/10.1002/cpe.7621">https://doi.org/10.1002/cpe.7621</a>  | 2023 |
| <b>Residual learning with annularly convolutional neural networks for classification and segmentation of 3D point clouds</b><br><i>Rabbia Hassan Muhammad Moazam Fraz Muhammad Shahzad Muhammad Asif Ali Rajput</i><br><i>Neurocomputing</i> , Volume 526, Pages 96-108<br><b>Impact Factor:</b> 5.779   <b>Quartile:</b> 2   <b>Citations:</b> 15<br><b>DOI:</b> 10.1016/j.neucom.2023.01.026   | 2023 |
| <b>Ubiquitous vision of transformers for person re-identification</b><br><i>Nazia Perwaiz Muhammad Shahzad Muhammad Moazam Fraz</i><br><i>Machine Vision and Applications</i> , Volume 34, Issue 2, Article Number 27<br><b>Impact Factor:</b> 2.983   <b>Quartile:</b> 2   <b>Citations:</b> 6<br><b>DOI:</b> 10.1007/s00138-023-01376-4  | 2023 |
| <b>Attention augmented distance regression and classification network for nuclei instance segmentation and type classification in histology images</b><br><i>Ghulam Murtaza Dogar Muhammad Moazam Fraz Muhammad Shahzad</i><br><i>Biomedical Signal Processing and Control</i> , Volume 79, Part 2, Article Number 104199<br><b>Impact Factor:</b> 5.076   <b>Quartile:</b> 2   <b>Citations:</b> 24<br><b>DOI:</b> 10.1016/j.bspc.2022.104199   | 2023 |
| <b>Nuclei and glands instance segmentation in histology images: a narrative review</b><br><i>Esha Sadia Nasir Arshi Pervaiz Muhammad Moazam Fraz</i><br><i>Artificial Intelligence Review</i> , Pages 1-56<br><b>Impact Factor:</b> 9.588   <b>Quartile:</b> 1   <b>Citations:</b> 13<br><b>DOI:</b> 10.1007/s10462-022-10372-5  | 2022 |
| <b>Smart surveillance with simultaneous person detection and re-identification</b><br><i>Nazia Perwaiz Muhammad Moazam Fraz Muhammad Shahzad</i><br><i>Multimedia Tools and Applications</i> , Pages 1-22<br><b>Impact Factor:</b> 2.577   <b>Quartile:</b> 2   <b>Citations:</b> 4<br><b>DOI:</b> 10.1007/s11042-022-13458-y  | 2022 |
| <b>Per-former: rethinking person re-identification using transformer augmented with self-attention and contextual mapping</b><br><i>Nazia Perwaiz Muhammad Moazam Fraz Muhammad Shahzad</i><br><i>Visual Computer</i> , Pages 1-16<br><b>Impact Factor:</b> 2.835   <b>Quartile:</b> 2   <b>Citations:</b> 7<br><b>DOI:</b> 10.1007/s00371-022-02577-0   | 2022 |
| <b>Orientation aware weapons detection in visual data: a benchmark dataset</b><br><i>Nazeef Ul Haq Muhammad Moazam Fraz Tufail Sajjad Shah Hashmi Muhammad Shahzad</i><br><i>Computing</i> , Pages 1-24<br><b>Impact Factor:</b> 2.420   <b>Quartile:</b> 2   <b>Citations:</b> 7<br><b>DOI:</b> <a href="https://doi.org/10.1007/s00607-022-01095-0">https://doi.org/10.1007/s00607-022-01095-0</a>   | 2022 |
| <b>Detection and Grading of Hypertensive Retinopathy Using Vessels Tortuosity and Arteriovenous Ratio</b><br><i>Sufian Al Badawi Muhammad Moazam Fraz Muhammad Shahzad Imran Mahmood Sajid Javed Emad Mosalam Ajay Kamath Nileshwar</i><br><i>Journal of Digital Imaging</i> , Pages 1-21<br><b>Impact Factor:</b> 4.056   <b>Quartile:</b> 1   <b>Citations:</b> 28<br><b>DOI:</b> 10.1007/s10278-021-00545-z   | 2022 |
| <b>PROUD-MAL: static analysis-based progressive framework for deep unsupervised malware classification of windows portable executable</b><br><i>Syed Khurram Jah Rizwi Warda Aslam Muhammad Shahzad Shahzad Saleem Muhammad Moazam Fraz</i><br><i>Complex &amp; Intelligent Systems</i> , Pages 1-13<br><b>Impact Factor:</b> 4.927   <b>Quartile:</b> 2   <b>Citations:</b> 32<br><b>DOI:</b> <a href="https://doi.org/10.1007/s40747-021-00560-1">https://doi.org/10.1007/s40747-021-00560-1</a> | 2021 |

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| <p><b>A multiapproach generalized framework for automated solution suggestion of support tickets</b></p> <p><i>Syed S. Ali Zaidi Muhammad Moazam Fraz Muhammad Shahzad Sharifullah Khan</i><br/> <i>International Journal of Intelligent Systems</i>, Pages 1-28</p> <p><b>Impact Factor:</b> 8.709   <b>Quartile:</b> 1   <b>Citations:</b> 14<br/> <b>DOI:</b> <a href="https://doi.org/10.1002/int.22701">https://doi.org/10.1002/int.22701</a></p>  | 2021 |
| <p><b>Stochastic attentions and context learning for person re-identification</b></p> <p><i>Nazia Perwaiz Muhammad Moazam Fraz Muhammad Shahzad</i><br/> <i>PeerJ Computer Science</i>, Volume 7, Article Number e447</p> <p><b>Impact Factor:</b> 2.411   <b>Quartile:</b> 2   <b>Citations:</b> 7<br/> <b>DOI:</b> <a href="https://doi.org/10.7717/peerj-cs.447">10.7717/peerj-cs.447</a></p>  | 2021 |
| <p><b>Spectrum of Advancements and Developments in Multidisciplinary Domains for Generative Adversarial Networks (GANs)</b></p> <p><i>Syed Khurram Jah Rizwi Muhammad Moazam Fraz Muhammad Ajmal Azad</i><br/> <i>Archives of Computational Methods in Engineering</i>, Pages 1-19</p> <p><b>Impact Factor:</b> 7.302   <b>Quartile:</b> 1   <b>Citations:</b> 25<br/> <b>DOI:</b> <a href="https://doi.org/10.1007/s11831-021-09543-4">https://doi.org/10.1007/s11831-021-09543-4</a></p>  | 2021 |
| <p><b>Modeling, simulation and forecasting of wind power plants using agent-based approach</b></p> <p><i>Imran Mahmood Anis-ur-Rahman Mahe Mobeen Shahzad Younis Asad Waqar Malik Muhammad Moazam Fraz Kafait Ullah</i><br/> <i>Journal of Cleaner Production</i>, Volume 276, Article Number 124172</p> <p><b>Impact Factor:</b> 9.297   <b>Quartile:</b> 1   <b>Citations:</b> 15<br/> <b>DOI:</b> <a href="https://doi.org/10.1016/j.jclepro.2020.124172">https://doi.org/10.1016/j.jclepro.2020.124172</a></p>  | 2020 |
| <p><b>Motion Reveal Emotions: Identifying Emotions from Human Walk Using Chest Mounted Smartphone</b></p> <p><i>Muhammad Zeeshan Muhammad Arslan Hashmi Qaiser Riaz Muhammad Shahzad Muhammad Moazam Fraz</i><br/> <i>IEEE Sensors Journal</i>, Volume 20, Issue 22, Pages 13511-13522</p> <p><b>Impact Factor:</b> 3.301   <b>Quartile:</b> 2   <b>Citations:</b> 34<br/> <b>DOI:</b> <a href="https://doi.org/10.1109/JSEN.2020.3004399">10.1109/JSEN.2020.3004399</a></p>  | 2020 |
| <p><b>DCARN: Deep Context Aware Recurrent Neural Network for Semantic Segmentation of Large Scale Unstructured 3D Point Cloud</b></p> <p><i>Muhammad Moazam Fraz Saba Mehmood Muhammad Shahzad</i><br/> <i>Neural Processing Letters</i>, Volume 39, Issue 7, Pages 2395-2405</p> <p><b>Impact Factor:</b> 2.908   <b>Quartile:</b> 2   <b>Citations:</b> 2<br/> <b>DOI:</b> <a href="https://doi.org/10.1007/s11063-020-10368-8">10.1007/s11063-020-10368-8</a></p>  | 2020 |
| <p><b>Context-Aware Convolutional Neural Network for Grading of Colorectal Cancer Histology Images</b></p> <p><i>Muhammad Shaban Ruqayya Awan Muhammad Moazam Fraz Ayesha Azam Yee-Wah Tsang David Snead Nasir M Rajpoot</i><br/> <i>IEEE Transactions on Medical Imaging</i>, Volume 39, Issue 7, Pages 2395-2405</p> <p><b>Impact Factor:</b> 10.048   <b>Quartile:</b> 1   <b>Citations:</b> 132<br/> <b>DOI:</b> <a href="https://doi.org/10.1109/TMI.2020.2971006">https://doi.org/10.1109/TMI.2020.2971006</a></p>                                      | 2020 |
| <p><b>Cellular community detection for tissue phenotyping in colorectal cancer histology images</b></p> <p><i>Sajid Javaid Arif Mehmood Muhammad Moazam Fraz Navid AlemiKoochbanani Ksenija Benes Yee-WahTsang Katherine Hewitt David Epstein David Snead Nasir M Rajpoot</i><br/> <i>Medical Image Analysis</i>, Volume 63, Article Number 101696</p> <p><b>Impact Factor:</b> 8.545   <b>Quartile:</b> 1   <b>Citations:</b> 123<br/> <b>DOI:</b> <a href="https://doi.org/10.1016/j.media.2020.101696">https://doi.org/10.1016/j.media.2020.101696</a></p> | 2020 |
| <p><b>Multi-sized Object Detection Using Spaceborne Optical Imagery</b></p> <p><i>Muhammad Haroon Muhammad Shahzad Muhammad Moazam Fraz</i><br/> <i>IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing</i>, Volume 13, Pages 3032-3046</p> <p><b>Impact Factor:</b> 3.784   <b>Quartile:</b> 2   <b>Citations:</b> 51<br/> <b>DOI:</b> <a href="https://doi.org/10.1109/JSTARS.2020.3000317">10.1109/JSTARS.2020.3000317</a></p>  | 2020 |
| <p><b>On the frontiers of pose invariant face recognition: a review</b></p> <p><i>Sheikh Bilal Ahmed Syed Farooq Ali Jameel Ahmad Muhammad Adnan Muhammad Moazam Fraz</i><br/> <i>Artificial Intelligence Review</i>, Volume 53, Issue 5, Pages 2571-263</p> <p><b>Impact Factor:</b> 8.139   <b>Quartile:</b> 1   <b>Citations:</b> 31<br/> <b>DOI:</b> <a href="https://doi.org/10.1007/s10462-019-09742-3">10.1007/s10462-019-09742-3</a></p>  | 2020 |
| <p><b>Dense-CaptionNet: a Sentence Generation Architecture for Fine-grained Description of Image Semantics</b></p>  | 2020 |

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| <p><i>Imran Khurram Muhammad Moazam Fraz Muhammad Shahzad Nasir M Rajpoot</i><br/> <i>Cognitive Computation</i> , Pages 1-27</p> <p><b>Impact Factor:</b> 5.418   <b>Quartile:</b> 1   <b>Citations:</b> 11<br/> <b>DOI:</b> <a href="https://doi.org/10.1007/s12559-019-09697-1">https://doi.org/10.1007/s12559-019-09697-1</a></p>   |      |
| <p><b>A vehicular network–based intelligent transport system for smart cities</b></p> <p><i>Tayyaba Zaheer Muhammad Moazam Fraz Asad Waqar Malik Ayesha Zahir Anis-ur-Rahman</i><br/> <i>International Journal of Distributed Sensor Networks.</i>, Volume: 15, issue: 11, Article Number: 1550147719888845</p> <p><b>Impact Factor:</b> 1.151   <b>Quartile:</b> 4   <b>Citations:</b> 21<br/> <b>DOI:</b> <a href="https://doi.org/10.1177/1550147719888845">https://doi.org/10.1177/1550147719888845</a></p>  | 2019 |
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| <p><b>Large Scale Face Recognition In the Wild: Technical Challenges and Research Directions</b><br/> <i>Abdul Mannan Shahid Muhammad Moazam Fraz Muhammad Shahzad</i><br/> <i>International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(177,)</i></p> <p><b>Citations:</b> 2<br/> <b>DOI:</b> 10.1109/ICoDT252288.2021.9441525</p>                                 | 2021 |
| <p><b>Plant Disease Identification Using Transfer Learning</b><br/> <i>Muhammad Sufyan Arshad Usman Abdur Rehman Muhammad Moazam Fraz</i><br/> <i>2021 International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(177,)</i></p> <p><b>Citations:</b> 11<br/> <b>DOI:</b> 10.1109/ICoDT252288.2021.9441512</p>  | 2021 |
| <p><b>Deep Learning Based Land Cover and Crop Type Classification: A Comparative Study</b><br/> <i>Asim Hameed Khan Muhammad Moazam Fraz Muhammad Shahzad</i><br/> <i>International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(177,)</i></p> <p><b>Citations:</b> 2<br/> <b>DOI:</b> 10.1109/ICoDT252288.2021.9441483</p>  | 2021 |
| <p><b>IAB-Net: Informative and Attention Based Person Re-Identification</b><br/> <i>Rao Faizan Muhammad Moazam Fraz Muhammad Shahzad</i><br/> <i>International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(177,)</i></p> <p><b>Citations:</b> 3<br/> <b>DOI:</b> 10.1109/ICoDT252288.2021.9441480</p>   | 2021 |
| <p><b>Group Activity Recognition in Visual Data: A Retrospective Analysis of Recent Advancements</b><br/> <i>Shoaib Sattar Yahya Sattar Muhammad Shahzad Muhammad Moazam Fraz</i><br/> <i>2021 International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(177,)</i></p> <p><b>Citations:</b> 2<br/> <b>DOI:</b> 10.1109/ICoDT252288.2021.9441478</p>                 | 2021 |
| <p><b>Application of Deep Learning for Weapons Detection in Surveillance Videos</b><br/> <i>Tufail Sajjad Shah Hashmi Nazeef Ul Haq Muhammad Moazam Fraz Muhammad Shahzad</i><br/> <i>2021 International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(177,)</i></p> <p><b>Citations:</b> 11<br/> <b>DOI:</b> 10.1109/ICoDT252288.2021.9441523</p>                    | 2021 |
| <p><b>Attention Based Residual Network for Effective Detection of COVID-19 and Viral Pneumonia</b><br/> <i>Muhammad Aasharib Nawshad Usama Aleem Shami Sana Sajid Muhammad Moazam Fraz</i><br/> <i>International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(177,)</i></p> <p><b>Citations:</b> N/A<br/> <b>DOI:</b> 10.1109/ICoDT252288.2021.9441485</p>           | 2021 |
| <p><b>Feature Attention Network for Simultaneous Nuclei Instance Segmentation and Classification in Histology Images</b><br/> <i>G. Murtaza Dogar Muhammad Moazam Fraz Sajid Javed</i><br/> <i>2021 International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(177,)</i></p> <p><b>Citations:</b> 1<br/> <b>DOI:</b> 10.1109/ICoDT252288.2021.9441474</p>            | 2021 |

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| <b>Multiscale Unified Network for Simultaneous Segmentation of Nerves and Micro-vessels in Histology Images</b><br><i>Afia Rasool Muhammad Moazam Fraz Sajid Javed</i><br><i>2021 International Conference on Digital Futures and Transformative Technologies (ICoDT2)</i> , res.country(177,)   | 2021 |
| <b>Citations: 4</b><br><b>DOI:</b> 10.1109/ICoDT252288.2021.9441509  |      |
| <b>Optimizing features for malware-benign clustering using Windows portable executables</b><br><i>Warda Aslam M.M. Fraz S.K. Rizvi S. Saleem</i><br><i>2021 International Conference on Artificial Intelligence, ICAI 2021</i> , res.country(177,)   | 2021 |
| <b>Citations: 1</b><br><b>DOI:</b> 10.1109/ICAI52203.2021.9445270  |      |
| <b>Forecasting of Electricity Generation for Hydro Power Plants</b><br><i>Umer Javaid Muhammad Moazam Fraz Imran Mehmood Omar Arif Muhammad Shahzad Muhammad Shahzad Muhammad Shahzad</i><br><i>IEEE 17th International Conference on Smart Communities: Improving Quality of Life Using ICT, IoT and AI (HONET 2020)</i> res.country(233,)                                    | 2020 |
| <b>Citations: 1</b><br><b>DOI:</b> 10.1109/HONET50430.2020.9322841   |      |
| <b>Cross-validation of machine learning algorithms for malware detection using static features of Windows portable executables: A Comparative Study</b><br><i>Warda Aslam Muhammad Moazam Fraz S.K. Rizwi Shahzad Saleem</i><br><i>IEEE 17th International Conference on Smart Communities: Improving Quality of Life Using ICT, IoT and AI (HONET 2020)</i> res.country(233,) | 2020 |
| <b>Citations: 1</b><br><b>DOI:</b> 10.1109/HONET50430.2020.9322809   |      |
| <b>Multiscale Dilated UNet for Segmentation of Multi-Organ Nuclei in Digital Histology Images</b><br><i>S.N Rashid Muhammad Moazam Fraz Sajid Javed</i><br><i>IEEE 17th International Conference on Smart Communities: Improving Quality of Life Using ICT, IoT and AI (HONET)</i> res.country(233,)   | 2020 |
| <b>Citations: 10</b><br><b>DOI:</b> 10.1109/HONET50430.2020.9322833  |      |
| <b>Smart Visual Surveillance: Proactive Person Re-identification instead of Impulsive Person Search</b><br><i>Nazia Perwaiz Muhammad Moazam Fraz Muhammad Shahzad</i><br><i>2020 IEEE 23rd International Multitopic Conference (INMIC)</i> , res.country(177,)   | 2020 |
| <b>Citations: N/A</b><br><b>DOI:</b> 10.1109/INMIC50486.2020.9318107   |      |
| <b>Feature-based Optimized Deep Residual Network Architecture for Diabetic Retinopathy Detection</b><br><i>M Kashif Yaqoob Syed Farooq Ali Irfan Kareem Muhammad Moazam Fraz</i><br><i>IEEE 23rd International Multitopic Conference (INMIC) 2020</i> , res.country(177,)  | 2020 |
| <b>Citations: 8</b><br><b>DOI:</b> 10.1109/INMIC50486.2020.9318096   |      |
| <b>Automated Grade Classification of Oral Epithelial Dysplasia using Morphometric Analysis of Histology Images</b><br><i>Raja Muhammad Saad Bashir Hanya Mahmood Muhammad Shaban Muhammad Moazam Fraz Shan E. Ahmed Raza Syed Ali Khurram Nasir M. Rajpoot</i><br><i>SPIE Medical Imaging, 2020: Digital Pathology</i> , res.country(233,)                                     | 2020 |
| <b>Citations: 9</b><br><b>DOI:</b> <a href="https://doi.org/10.1117/12.2549705">https://doi.org/10.1117/12.2549705</a>   |      |
| <b>Hierarchical Refined Local Associations for Robust Person Re-Identification</b><br><i>Nazia Perwaiz Muhammad Moazam Fraz Muhammad Shahzad</i><br><i>2019 International Conference on Robotics and Automation in Industry (ICRAI)</i> , res.country(177,)  | 2019 |
| <b>Citations: 9</b><br><b>DOI:</b> 10.1109/ICRAI47710.2019.8967389   |      |
| <b>End to End Person Re-Identification for Automated Visual Surveillance</b><br><i>Saadia Batoool Muhammad Zeeshan Ali Muhammad Shahzad Muhammad Moazam Fraz</i><br><i>2018 IEEE International Conference on Image Processing, Applications and Systems (IPAS)</i> , res.country(75,)  | 2018 |
| <b>Citations: 9</b><br><b>DOI:</b> 10.1109/IPAS.2018.8708882   |      |
| <b>Detailed sentence generation architecture for image semantics description</b><br><i>Imran Khurram Muhammad Moazam Fraz Muhammad Shahzad</i><br><i>International Symposium on Visual Computing (ISVC) 2018</i> , res.country(233,)   | 2018 |

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| <b>Citations:</b> 5<br><b>DOI:</b> 10.1007/978-3-030-03801-4_37  |      |
| <b>Two Stream Deep CNN-RNN Attentive Pooling Architecture for Video-Based Person Re-identification</b><br><i>Wajeeha Ansar Muhammad Moazam Fraz Muhammad Shahzad Imad Gohar S. Javed S. K. Jung</i><br><i>Iberoamerican Congress on Pattern Recognition CIARP 2018</i> , res.country(68,)  | 2018 |
| <b>Citations:</b> 5<br><b>DOI:</b> 10.1007/978-3-030-13469-3_76  |      |
| <b>DUPL-VR: Deep Unsupervised Progressive Learning for Vehicle Re-Identification</b><br><i>Raja Muhammad Saad Bashir Muhammad Moazam Fraz Muhammad Shahzad</i><br><i>International Symposium on Visual Computing</i> , res.country(233,)   | 2018 |
| <b>Citations:</b> 10<br><b>DOI:</b> 10.1007/978-3-030-03801-4_26   |      |
| <b>Cellular Community Detection for Tissue Phenotyping in Histology Images</b><br><i>Sajid Javaid David Epstein David Snead Nasir M. Rajpoot Muhammad Moazam Fraz</i><br><i>International Workshop on Ophthalmic Medical Image Analysis 2018</i> , res.country(68,)  | 2018 |
| <b>Citations:</b> 15<br><b>DOI:</b> 10.1007/978-3-030-00949-6_15   |      |
| <b>Simultaneous Segmentation of Multiple Retinal Pathologies Using Fully Convolutional Deep Neural Network</b><br><i>Maryam Badar Muhammad Moazam Fraz Muhammad Shahzad</i><br><i>Proceedings of the Medical Image Understanding and Analysis 2018</i> , res.country(231,)   | 2018 |
| <b>Citations:</b> 14<br><b>DOI:</b> 10.1007/978-3-319-95921-4_29   |      |
| <b>A hybrid approach for fatigue detection and quantification</b><br><i>Sughra Razzaq Muhammad Nouman Ahmad Mian M. Hamayun Anis ur Rahman Muhammad Moazam Fraz</i><br><i>20th International Multitopic Conference 2017 (INMIC 2017)</i> , res.country(177,)   | 2017 |
| <b>Citations:</b> 3<br><b>DOI:</b> 10.1109/INMIC.2017.8289472  |      |
| <b>Application of grow cut algorithm for localization and extraction of optic disc in retinal images</b><br><i>M. Abdullah M. Moazam Fraz M. Abdullah M. Moazam Fraz</i><br><i>2th International Conference on High-Capacity Optical Networks and Enabling/Emerging Technologies, HONET-ICT 2015</i> , res.country(177,)   | 2015 |
| <b>Citations:</b> 8<br><b>DOI:</b> 10.1109/HONET.2015.7395436  |      |
| <b>Automated retinal vessel recognition and measurements on large datasets</b><br><i>R.A. Welikala M.M. Fraz S. Hayat A.R. Rudnicka P.J. Foster P.H. Whincup C.G. Owen D.P. Strachan S.A. Barman R.A. Welikala M.M. Fraz S. Hayat A.R. Rudnicka P.J. Foster P.H. Whincup C.G. Owen D.P. Strachan S.A. Barman</i><br><i>International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC 2015</i> , res.country(109,) | 2015 |
| <b>Citations:</b> N/A<br><b>DOI:</b> 10.1109/EMBC.2015.7319573   |      |
| <b>Automated Arteriole and Venule Recognition in Retinal Images using Ensemble Classification</b><br><i>Muhammad Moazam Fraz A. R. Rudnicka C. G. Owen D. P. Strachan S. A. Barman Muhammad Moazam Fraz A. R. Rudnicka C. G. Owen D. P. Strachan S. A. Barman</i><br><i>9th International Conference on Computer Vision Theory and Applications, VISAPP 2014</i> , res.country(183,)   | 2014 |
| <b>Citations:</b> 20<br><b>DOI:</b> 10.5220/0004733701940202   |      |
| <b>A model based approach for vessel calibre measurement in retinal images</b><br><i>Peter Whincup Muhammad Moazam Fraz Paolo Remagnino Andreas Hoppe Sarah. A. Barman Alicja Rudnicka Chris Owen Peter Whincup</i><br><i>The 8th International Conference on Signal Image Technology &amp; Internet Based Systems 2012</i> , res.country(109,)  | 2012 |
| <b>Citations:</b> 4<br><b>DOI:</b> 10.1109/SITIS.2012.29   |      |
| <b>Retinal vessel segmentation using ensemble classifier of bagged decision trees</b><br><i>M. M. Fraz P. Remagnino A. Hoppe B. Uyyanonvara A. Rudnicka C. G. Owen S. A. Barman M. M. Fraz P. Remagnino A. Hoppe B. Uyyanonvara A. Rudnicka C. G. Owen S. A. Barman</i><br><i>IET Conference Publications 2012</i> , res.country(231,)   | 2012 |
| <b>Citations:</b> 6  |      |



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| DOI: 10.1049/cp.2012.0458  |      |
| <b>A Supervised Method for Retinal Blood Vessel Segmentation Using Line Strength, Multiscale Gabor and Morphological Features</b>                              | 2011 |
| <i>M.M. Fraz P. Remagnino A. Hoppe Sergio Velastin B. Uyyanonvara S. A .Barman M.M. Fraz P. Remagnino A. Hoppe Sergio Velastin B. Uyyanonvara S. A .Barman</i> |      |
| <i>Proceedings of the IEEE International Conference on Signal &amp; Image Processing Applications, Nov, 2011, Kuala Lumpur , Malaysia res.country(157,)</i>    |      |
| <b>Citations: 27</b>   |      |
| DOI: 10.1109/ICSIPA.2011.6144129   |      |

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| <b>Retinal vasculature segmentation by morphological curvature, reconstruction and adapted hysteresis thresholding</b>       | 2011 |
| <i>M. Moazam Fraz A. Basit P. Remagnino A. Hoppe S. A. Barman M. Moazam Fraz A. Basit P. Remagnino A. Hoppe S. A. Barman</i> |      |
| <i>2011 7th International Conference on Emerging Technologies, ICET 2011, res.country(177,)</i>                              |      |
| <b>Citations: 11</b>   |      |
| DOI: 10.1109/ICET.2011.6048487   |      |

## Book Chapters

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|---|------|
| <b>Cellular Community Detection for Tissue Phenotyping in Histology Images</b>  | 2018 |
| <i>Muhammad Moazam Fraz Sajid Javaid David Epstein David Snead Nasir Rajpoot</i>  |      |
| <i>In: Book on Computational Pathology and Ophthalmic Medical Image Analysis, Pages 120-129</i>   |      |
| <b>Citations: 15</b>  |      |
| DOI: 10.1007/978-3-030-00949-6_15   |      |
| <b>Uncertainty Driven Pooling Network for Microvessel Segmentation in Routine Histology Images</b>                                      | 2018 |
| <i>Muhammad Moazam Fraz M. Shaban S. Graham S.A. Khurram N. M. Rajpoot</i>  |      |
| <i>In: Computational Pathology and Ophthalmic Medical Image Analysis, Pages 156-164</i>   |      |
| <b>Citations: 22</b>  |      |
| DOI: 10.1007/978-3-030-00949-6_19   |      |
| <b>Simultaneous Segmentation of Multiple Retinal Pathologies Using Fully Convolutional Deep Neural Network</b>                          | 2018 |
| <i>M. Bader Muhammad Shahzad Muhammad Moazam Fraz</i>   |      |
| <i>In: Medical Image Understanding and Analysis in Communications in Computer and Information Science, vol 894. Springer, Cham NULL</i> |      |
| <b>Citations: 21</b>  |      |
| DOI: 10.1007/978-3-319-95921-4_29   |      |

## Editorial Activities

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|---|------|
| <b>Drones</b>   | 2024 |
| Reviewed Papers for Journals  |      |
| <b>Impact Factor: 9.55</b>  |      |
| <b>Journal Pattern Recognition</b>  | 2024 |
| Edited Journal Issue / Proceeding / Book                                  |      |
| <b>Impact Factor: 7.5</b>   |      |
| <b>Biomedical Signal Processing &amp; Control</b>                         | 2024 |
| Reviewed Papers for Journals  |      |
| <b>Impact Factor: 4.9</b>   |      |
| <b>IEEE Transactions on Medical Imaging</b>                               | 2024 |
| Reviewed Papers for Journals  |      |
| <b>Impact Factor: 8.9</b>   |      |
| <b>IET Image Processing</b>   | 2024 |
| Reviewed Papers for Journals  |      |
| <b>Impact Factor: 5.4</b>   |      |
| <b>Biomedical Signal Processing &amp; Control</b>                         | 2024 |
| Reviewed Papers for Journals  |      |
| <b>Impact Factor: 4.9</b>   |      |
| <b>IEEE Transactions on Emerging Topics in Computational Intelligence</b> | 2024 |
| Reviewed Papers for Journals  |      |
| <b>Impact Factor: 5.3</b>   |      |

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| <b>Engineering Applications of Artificial Intelligence</b><br>Reviewed Papers for Journals<br><b>Impact Factor: 8.0</b>                  | 2023 |
| <b>Big Data Mining and Analytics</b><br>Reviewed Papers for Journals<br><b>Impact Factor: 13.6</b>                                       | 2023 |
| <b>IEEE Access</b><br>Reviewed Papers for Journals<br><b>Impact Factor: 3.476</b>  | 2023 |
| <b>IEEE Access</b><br>Reviewed Papers for Journals<br><b>Impact Factor: 3.476</b>  | 2023 |
| <b>IEEE Access</b><br>Reviewed Papers for Journals<br><b>Impact Factor: 3.476</b>  | 2023 |
| <b>IEEE Transactions on Medical Imaging</b><br>Reviewed Papers for Journals<br><b>Impact Factor: 11.037</b>                              | 2023 |
| <b>Biomedical Signal Processing and Control</b><br>Reviewed Papers for Journals<br><b>Impact Factor: 5.076</b>                           | 2023 |
| <b>Biomedical Signal Processing &amp; Control &lt;</b><br>Reviewed Papers for Journals<br><b>Impact Factor: 5.076</b>                    | 2023 |
| <b>Biomedical Signal Processing and Control</b><br>Reviewed Papers for Journals<br><b>Impact Factor: 5.076</b>                           | 2023 |
| <b>Biomedical Signal Processing and Control</b><br>Reviewed Papers for Journals<br><b>Impact Factor: 5.076</b>                           | 2023 |
| <b>IEEE Transactions on Emerging Topics in Computational Intelligence</b><br>Reviewed Papers for Journals<br><b>Impact Factor: 4.851</b> | 2023 |
| Reviewed Papers for Journals<br><b>Impact Factor: 3.47</b>   | 2022 |
| Reviewed Papers for Journals<br><b>Impact Factor: 3.367</b>  | 2022 |
| Reviewed Papers for Journals<br><b>Impact Factor: 1.773</b>  | 2022 |
| Reviewed Papers for Journals<br><b>Impact Factor: 3.36</b>   | 2022 |
| Reviewed Papers for Journals<br><b>Impact Factor: 3.367</b>  | 2022 |
| Reviewed Papers for Journals<br><b>Impact Factor: 3.367</b>  | 2022 |
| Reviewed Papers for Journals<br><b>Impact Factor: 10.04</b>  | 2021 |

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| Reviewed Papers for Journals<br><b>Impact Factor: 3.9</b>   | 2021 |
| Reviewed Papers for Journals<br><b>Impact Factor: 1.995</b> | 2021 |
| Reviewed Papers for Journals<br><b>Impact Factor: 5.223</b> | 2021 |
| Reviewed Papers for Journals<br><b>Impact Factor: 4.774</b> | 2021 |
| Reviewed Papers for Journals<br><b>Impact Factor: 6.685</b> | 2021 |
| Reviewed Papers for Journals<br><b>Impact Factor: 6.685</b> | 2021 |
| Reviewed Papers for Journals<br><b>Impact Factor: 3.745</b> | 2021 |
| Reviewed Papers for Journals                                | 2020 |
| Reviewed Papers for Journals                                | 2020 |
| Reviewed Papers for Journals<br><b>Impact Factor: 3.998</b> | 2020 |
| Reviewed Papers for Journals<br><b>Impact Factor: 3.745</b> | 2020 |
| Reviewed Papers for Journals<br><b>Impact Factor: 3.43</b>  | 2020 |
| Edited Journal Issue / Proceeding / Book                    | 2020 |
| Reviewed Papers for Journals<br><b>Impact Factor: 2.286</b> | 2020 |
| Reviewed Papers for Journals<br><b>Impact Factor: 4.4</b>   | 2020 |
| Reviewed Papers for Journals<br><b>Impact Factor: 1.788</b> | 2020 |
| Reviewed Papers for Journals<br><b>Impact Factor: 9.71</b>  | 2020 |
| Reviewed Papers for Journals<br><b>Impact Factor: 2.286</b> | 2019 |
| Reviewed Papers for Journals                                | 2019 |

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| <b>Impact Factor:</b> 2.286  |      |
| Reviewed Papers for Journals | 2019 |
| <b>Impact Factor:</b> 4.292  |      |
| Reviewed Papers for Journals | 2019 |
| <b>Impact Factor:</b> 2.591  |      |
| Reviewed Papers for Journals | 2019 |
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| Reviewed Papers for Journals | 2019 |
| Reviewed Papers for Journals | 2019 |
| <b>Impact Factor:</b> 7.816  |      |
| Reviewed Papers for Journals | 2019 |
| <b>Impact Factor:</b> 7.816  |      |
| Reviewed Papers for Journals | 2019 |
| <b>Impact Factor:</b> 4.664  |      |
| Reviewed Papers for Journals | 2019 |
| <b>Impact Factor:</b> 4.098  |      |
| Reviewed Papers for Journals | 2019 |
| <b>Impact Factor:</b> 7.816  |      |
| Reviewed Papers for Journals | 2018 |
| <b>Impact Factor:</b> 7.816  |      |
| Reviewed Papers for Journals | 2018 |
| Reviewed Papers for Journals | 2018 |
| <b>Impact Factor:</b> 6.13   |      |
| Reviewed Papers for Journals | 2018 |
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| Reviewed Papers for Journals | 2018 |
| <b>Impact Factor:</b> 3.557  |      |

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| Reviewed Papers for Journals<br><b>Impact Factor: 2.11</b>  | 2018 |
| Reviewed Papers for Journals<br><b>Impact Factor: 3.557</b> | 2018 |
| Reviewed Papers for Journals<br><b>Impact Factor: 3.557</b> | 2018 |
| Reviewed Papers for Journals                                | 2016 |

## Intellectual Property

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### Copyrights

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|---|------|
| <b>StreamFace: A framework for extraction of face datasets from YouTube videos and livestreams</b><br>Status: Filed                                       | 2023 |
| <b>Improving the Face Recognition Algorithms for the Masked Faces</b><br>Status: Filed  | 2023 |
| <b>Multi-modality in Visual Question Answering using Knowledge Graphs</b><br>Status: Filed  | 2023 |
| <b>ActiPhe: A deep active learning framework for phenotypes labelling in unstructured EHRs</b><br>Status: Filed   | 2023 |
| <b>Disease Specific Knowledge Graphs for Unstructured EMRs and Radiology Reports</b><br>Status: Granted Filed   | 2023 |
| <b>Live News Channels Stream Analytics Framework</b><br>Status: Granted Filed   | 2022 |
| <b>Knowledge-Aware Visual Question Answering Framework for developing visual learning apps for children</b><br>Status: Granted Filed                      | 2022 |
| <b>Orientation aware weapons detection in visual data</b><br>Status: Filed  | 2021 |
| <b>Informative Attention Based Person Re-Identification for automated surveillance</b><br>Status: Filed   | 2021 |
| <b>An Attention based Distance Regression CNN for Nuclei Instance Segmentation and Type Classification in Digitized Histology Images</b><br>Status: Filed | 2021 |
| <b>Static analysis based progressive framework for deep unsupervised malware classification of Windows portable executable</b><br>Status: Granted Filed   | 2021 |
| <b>Stochastic attentions and context learning for person re-identification in surveillance data</b><br>Status: Granted Filed                              | 2020 |

### Patents

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| <b>Improving Image Super Resolution using Squeeze-and-Residual-Excitation with Holistic Attention in Deep Neural Networks</b><br>Status: Filed | 2021 |
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### Industrial Designs

### Trademarks

Trainings

|   |      |
|---|------|
| <b>Practical AI Simplified for Non-Computing Professionals</b><br><b>Partner:</b> 0<br><b>Duration:</b> 02-Jul-2024 to 06-Sep-2024                    | 2024 |
| <b>Programming for AI Systems</b><br><b>Partner:</b> 0<br><b>Duration:</b> 02-Jul-2024 to 21-Aug-2024   | 2024 |
| <b>5 day training on AI, Machine Learning &amp; Data Science</b><br><b>Partner:</b> Pakistan Air Force<br><b>Duration:</b> 06-Sep-2021 to 10-Jan-2021 | 2021 |
| <b>Edge Computing for Computer Vision</b><br><b>Partner:</b> NA<br><b>Duration:</b> 23-Aug-2021 to 27-Aug-2021  | 2021 |