Muhammad Usman Akram

Professor

College of Electrical & Mechanical Engineering

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Contact: 0512304729
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About

Dr. Muhammad Usman Akram is working as Professor in the College of Electrical & Mechanical Engineering. Dr. Muhammad Usman Akram has a PhD in Medical Image And Signal Processing. Dr. Muhammad Usman Akram has published 352 research articles & conference papers having a citation count of 3862, carried out 14 projects and filed 20 intellectual property.

Qualifications

PhD in Medical Image And Signal Processing — 2010 - 2012
NUST, Islamabad , Pakistan

MS in Medical Image Anlaysis — 2008 - 2010
NUST, Islamabad , Pakistan

BE in Image Processing — 2004 - 2008
NUST, Islamabad , Pakistan

Experience

Professor — 2022- Present
College of Electrical & Mechanical Engineering

Associate Professor — 2020 - 2022
College of Electrical & Mechanical Engineering

Associate Professor — 2018 - 2020
College of Electrical & Mechanical Engineering

Assistant Professor — 2018 - 2018
College of Electrical & Mechanical Engineering

Assistant Professor — 2013 - 2018
College of Electrical & Mechanical Engineering

Asst Prof — 2013 - 2013
Bahria University, Islamabad , E-8, Islamabad

Lecturer — 2012 - 2012
Bahria University , E-8, Islamabad, Pakistan

Awards

Best Researcher   2020
  Received "Best Researcher Award" from NUST C EME for year 2019

Best Innovator   2019
  Received "Best Innovator Award" from NUST college of EME for year 2018

Best Researcher   2019
  Received "NUST Overall Best Researcher Award" for year 2017

Best Teacher   2018
  Received "Best University Teacher Award" for the year 2016 from Govt of Pakistan Higher Education Commission (HEC)

BITA   2017
  Won Best IT Innovation Award 2017 for project titled EKKO

Best Researcher   2016
  Received "Best Researcher Award" from NUST C EME for year 2015

APICTA   2016
  Won Gold award in APICTA (Asia Pacific ICT Alliance Awards) 2016 in category of Research & Development of product named 'Analysis of Optical coherence tomography images for CDSS', hosted by Chinese TaiPei

PASHA   2016
  Won Gold award in P@SHA ICT awards 2016 in category of Research & Development of product named 'Analysis of Optical coherence tomography images for CDSS'

Best Young Scholar   2016
  Received "Best Young Scholar" award for the year 2013/14 from Govt of Pakistan Higher Education Commission (HEC) in the field of engineering and sciences

Professional Memberships

PEC   Since 2008

IEEE   Since 2009

Research Projects

National Projects

Smart Stethoscope   2025
  Funding Agency: IGNITE
  Amount: PKR 36,677.00
  Status: Completed

VRAM   2020
  Funding Agency: IGNITE
  Amount: PKR 80,000.00
  Status: Completed

ActiveDrive Driver Drowsiness Detection System   2021
  Funding Agency: IGNITE
  Amount: PKR N/A
  Status: Completed

Epilepsy Monitoring Band   2021
  Funding Agency: IGNITE
  Amount: PKR N/A
  Status: Completed

Autonomous Detection of Concealed, Cluttered and Dismantled Baggage Threats via X-ray Imagery for   2022
Advanced Security Applications
  Funding Agency: HEC
  Amount: PKR 12,937,000.00
  Status: Approved_inprocess

Artificial Intelligence (AI) for Image Classification   2019
  Funding Agency: NESCOM

Amount: PKR 150,000.00
Status: Completed

SmartSteth-Heart Beats Goes ON   2018
    Funding Agency: IGNITE
    Amount: PKR 80,000.00
    Status: Completed

EKKO - Wave Therapeutic Device   2018
    Funding Agency: IGNITE
    Amount: PKR 79,900.00
    Status: Completed

EKKO Wave Therapeutic Device 'Fostering a Disability Free Society'   2018
    Funding Agency: HEC
    Amount: PKR 10,015,000.00
    Status: Completed

Artificial Intelligence (AI) for Image Classification   2019
    Funding Agency: NESCOM
    Amount: PKR 150,000.00
    Status: Completed

EKKO-Wave Therapeutic Device   2018
    Funding Agency: IGNITE
    Amount: PKR 80,000.00
    Status: Completed

EPIC-A wearable Epilepsy monitoring device   2019
    Funding Agency: HEC
    Amount: PKR 9,515,675.00
    Status: Completed

Ekko-Wave Therapeutic Device   2018
    Funding Agency: HEC TDF
    Amount: PKR 7,394,000.00
    Status: Completed

EKKO Wave Therapeutic Device   2018
    Funding Agency: HEC
    Amount: PKR 7,394,000.00
    Status: Approved_inprocess

International Projects

Research Articles

Radiology report generation from a singular perspective using transformers with Knowledge   2026
Distillation
    Asad Mansoor Khan Mashood mohammad Mohsan Muhammad Usman Akram Taimur Hassan Sajid Gul Khawaja Adil Qayyum
    Biomedical Signal Processing and Control, Volume:111, Article Number 108340
    Impact Factor: 4.900 | **Quartile:** 2
    DOI: https://doi.org/10.1016/j.bspc.2025.108340

Regressor driven incremental instance segmentation for contraband items identification   2025
    Ammara Nasim Mahboob Anwar Muhammad Owais Samet Akcay Divya Velayudhan Muhammad Usman Akram Mohammed Ghazal Naoufel Werghi Taimur
    Hassan
    Engineering Applications of Artificial Intelligence, Volume:157, Article Number 111421
    Impact Factor: 8.000 | **Quartile:** 1
    DOI: https://doi.org/10.1016/j.engappai.2025.111421

Skin whole slide image segmentation using lightweight-pruned transformer   2025
    Anum Abdul Salam Muhammad Zeeshan Asaf Muhammad Usman Akram Ammad Ali Mashaal Ibne Masha Allah Babar Rao Samavia Khan Bssem Rafiq
    Bianca Sanabria Muhammad Haroon Yousaf
    Biomedical Signal Processing and Control, Volume:106, Article Number 107624
    Impact Factor: 4.900 | **Quartile:** 1
    DOI: https://doi.org/10.1016/j.bspc.2025.107624

AI-CADS: An Artificial Intelligence based framework for automatic early detection and severity evaluation of coronary artery disease   2025

Muhammad Sajid Ali Hassan Dilshad Ahmed Khan Shoab Ahmed Khan Asim Dilawar Bakhshi Sayed Tanveer Abbas Gilani Muhammad Usman Akram Mustansar Ali Ghazanfar

Biomedical Signal Processing and Control, Volume:106, Article Number: 107705, Pages:10

Impact Factor: 4.9 | **Quartile:** 1

DOI: https://doi.org/10.1016/j.bspc.2025.107705

Class and Data-Incremental Learning Framework for Baggage Threat Segmentation via Knowledge Distillation   2025

Ammara Nasim Saad Mazher Khan Anum Abdul Salam Adeel M Syed Muhammad Usman Akram Arsalan Shaukat Taimur Hassan

IEEE Access, Volume:13, Pages 95977-96000

Impact Factor: 3.600 | **Quartile:** 2

DOI: 10.1109/ACCESS.2025.3574919

Examining AI-Powered ADHD Diagnosis: Current Trends, Key Challenges, and Future Directions in the Field   2025

Soyiba Jawed Ahmad Rauf Subhani Wasi Haider Butt Muhammad Usman Akram Qurat Ul Ain

IEEE Access, Volume 13, Pages 93148-93177

Impact Factor: 3.600 | **Quartile:** 2

DOI: 10.1109/ACCESS.2025.3567427

PHARFF: A Pipeline-Based Graceful Live Migration and Checkpointing Framework for Achieving High Availability and Reliability in FPGA Applications on Cloud   2025

Sajid Gul Khawaja Muhammad Usman Akram Muhammad Asad Shoab Ahmad Khan Alina Mirza Yame Asfia

IEEE Access, Volume:13, Pages 63203-63218

Impact Factor: 3.400 | **Quartile:** 2

DOI: 10.1109/ACCESS.2025.3557303

DermaTransNet: Where Transformer Attention Meets U-Net for Skin Image Segmentation   2025

Anum Abdul Salam Muhammad Usman Akram Haroon Yousaf Babar Rao

IEEE Access, Volume:13, Page(s):64305-64329

Impact Factor: 3.4 | **Quartile:** 2

DOI: 10.1109/ACCESS.2025.3556889

Deep learning based approaches for intelligent industrial machinery health management and fault diagnosis in resource-constrained environments.   2025

Ali Saeed Muazzam A Khan Muhammad Usman Akram Waeal J. Obidallah Soyiba Jawed Awais Ahmad

Scientific Reports, Volume 15, Article Number: 1114

Impact Factor: 3.800 | **Quartile:** 1 | **Citations:** 11

DOI: https://doi.org/10.1038/s41598-024-79151-2

AI-CADR: Artificial Intelligence Based Risk Stratification of Coronary Artery Disease using Novel Non-invasive Biomarkers   2024

Muhammad Sajid Ali Hassan Dilshad Ahmed Khan Shoab Ahmed Khan Asim Dilawar Bakhshi Muhammad Usman Akram Mishal Babar Farhan Hussain Wadood Abdul

IEEE Journal of Biomedical and Health Informatics, 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

Segmented 3D Lung Cube Dataset and Dual-Model Framework for COVID-19 Severity Prediction   2024

Mohsin ali Khan Arsalan Shaukat Zartasha Mustansar Muhammad Usman Akram

IEEE Access, Volume: 12, Page(s):172596-172609

Impact Factor: 3.4 | **Quartile:** 2

DOI: 10.1109/ACCESS.2024.3501234

An interpretable hybrid framework combining convolution latent vectors with transformer based attention mechanism for rolling element fault detection and classification   2024

Ali Saeed Muhammad Usman Akram Muazzam Khattak M. Belal Khan

Heliyon, Volume: 10, Issue: 21, Article Number: e38993, Pages:18

Impact Factor: 3.4 | **Quartile:** 1 | **Citations:** 2

DOI: https://doi.org/10.1016/j.heliyon.2024.e38993

A Modified Deep Semantic Segmentation Model for Analysis of Whole Slide Skin Images   2024

Muhammad Zeeshan Asaf Hamid Rasul Muhammad Usman Akram Tazeen Hina Tayyab Rashid Arslan Shaukat

Scientific Reports, Volume 14, Issue 1, Article Number 23489

TransNetV: An optimized hybrid model for enhanced colorectal cancer image classification
2024

Mohsan Tanveer Muhammad Usman Akram Asad Mansoor Khan

Biomedical Signal Processing and Control, Volume 96, Part A , Article Number 106579

Transformer-based sensor failure prediction and classification framework for UAVs
2024

Muhammad Waqas Ahmad Muhammad Usman Akram Mashood Mohammad Mohsan Kashif Saghar Rashid Ahmad Wasi Haider Butt

Expert Systems with Applications, Volume: 248, Article Number: 123415

Two-dimensional hybrid incremental learning (2DHIL) framework for semantic segmentation of skin tissues
2024

Muhammad Imran Muhammad Usman Akram Mohsin Islam Tiwana Anum Abdul Salam Danilo Greco

Image and Vision Computing, Volume 148, Article Number: 105098

Insights from EEG Analysis of Evoked Memory Recalls Using Deep Learning for Emotion Charting
2024

Muhammad Najam Dar Muhammad Usman Akram Ahmad Rauf Subhani Sajid Gul Khawaja Constantino Carlos Reyes-Aldasoro Sarah Gul

Scientific Reports, Volume 14, Article Number: 17080

Transformer-based framework for multi-class segmentation of skin cancer from histopathology images
2024

Muhammad Imran Mohsin Islam Tiwana Mashood Mohammad Mohsan Norah Saleh Alghamdi Muhammad Usman Akram

Frontiers in Medicine, Volume 11, Article Number 1380405

An Enhanced Agile V-Model: Conformance to regulatory bodies and experiences from model's adoption to medical device development.
2024

Aliya Ashraf Khan Muhammad Usman Akram Wasi Haider Butt Mehreen Shirshar

Heliyon, Volume 10. Issue 6 Article Number: e26928

Dual contrastive learning based image-to-image translation of unstained skin tissue into virtually stained H&E images
2024

Muhammad Zeeshan Asaf Babar Rao Muhammad Usman Akram Sajid Gul Khawaja Samavia Khan Thu Minh Truong Palveen Sekhon Irfan J. KHan Muhammad Shahmir Abbasi

Scientific Reports, Volume 14, Article Number: 2335

HybridHR-Net: Action Recognition in Video Sequences Using Optimal Deep Learning Fusion Assisted Framework
2023

Muhammad Naeem Akbar Muhammad Umar Farooq Majed Alhaisoni Usman Tariq Muhammad Usman Akram Seemab Khan

CMC-Computers, Materials and Continua, Volume 76, Issue 3, Pages 3275-3295

Multi-head deep learning framework for pulmonary disease detection and severity scoring with modified progressive learning
2023

Asad Mansoor Khan Muhammad Usm Sajid Nazir Taimur Hassan Sajid Gul Khawaja Tatheer Fatima

Biomedical Signal Processing and Control, Volume 85, Article Number 104855

Proliferative Diabetic Retinopathy Diagnosis Using Varying-Scales Filter Banks and Double-Layered Thresholding
2023

Anum Abdul Salam Jahan Zeb Muhammad Usman Akram Norah Saleh Alghamdi Noor ul Huda

Diagnostics , Volume 13, Issue 13, Article Number 2231

Impact Factor: 3.6 | **Quartile:** 2

DOI: https://doi.org/10.3390/diagnostics13132231

Recognition of Children's Facial Expressions Using Deep Learned Features
2023

Arsalan Shaukat Rizwan Ahmed Khan Zartasha Mustansar Muhammad Usman Akram Umer Asgher Unqua Laraib

Electronics , Volume: 12 Issue: 11, Article Number:2416

Impact Factor: 2.690 | **Quartile:** 3 | **Citations:** 7

DOI: 10.3390/electronics12112416

Analysis of EEG signals using deep learning to highlight effects of vibration-based therapy on brain
2023

Syeda Noor-Ul-Huda Safder Muhammad Usman Akram Muhammad Najam Dar Aliya Ashraf Khan Sajid Gul Khawaja Ahmad Rauf Subhani Imran Khan Niazi Sarah Gul

Biomedical Signal Processing and Control , Volume 83, Article Number 104605

Impact Factor: 5.076 | **Quartile:** 2 | **Citations:** 5

DOI: https://doi.org/10.1016/j.bspc.2023.104605

Angular contrastive distillation driven self-supervised scanner independent screening and grading of retinopathy
2023

Taimur Hassan Zhu Li Muhammad Usman Akram Irfan Hussain Kinda Khalaf Naoufel Werghi

Information Fusion , Volume 92, Pages 404-419

Impact Factor: 17.564 | **Quartile:** 1 | **Citations:** 5

DOI: https://doi.org/10.1016/j.inffus.2022.12.006

Survey of explainable artificial intelligence techniques for biomedical imaging with deep neural networks
2023

Sajid Nazir Diane M. Dickson Muhammad Usman Akram

Computers in Biology and Medicine , Volume 156, Article Number 106668

Impact Factor: 6.698 | **Quartile:** 1 | **Citations:** 133

DOI: https://doi.org/10.1016/j.compbiomed.2023.106668

Smart and Automated Infrastructure Management: A Deep Learning Approach for Crack Detection in Bridge Images
2023

Naeem Ul Islam Hina Inam Muhammad Usman Akram Fahim Ullah

Sustainability , Volume 15, Issue 3, Article Number 1866

Impact Factor: 3.889 | **Quartile:** 2 | **Citations:** 44

DOI: https://doi.org/10.3390/su15031866

Automated grading of chest x-ray images for viral pneumonia with convolutional neural networks ensemble and region of interest localization
2023

Asad Mansoor Khan Muhammad Usman Akram Sajid Nazir

PLoS One , Volume 18, Issue 1, Article Number e0280352

Impact Factor: 3.752 | **Quartile:** 2 | **Citations:** 10

DOI: https://doi.org/10.1371/ journal.pone.0280352

Vision Transformer and Language Model based Radiology Report Generation
2023

Mashood Mohammad Mohsan Muhammad Usman Akram Ghulam Rasool Norah Saleh Alghamdi Muhammad Abdullah Aamer Baqai Muhammad Abbas

IEEE Access , Volume 11, Pages 1814-1824

Impact Factor: 3.476 | **Quartile:** 2 | **Citations:** 30

DOI: 10.1109/ACCESS.2022.3232719

PCG classification through spectrogram using transfer learning
2023

Shahid Ismail Basit Ismail Imran Siddiqi Muhammad Usman Akram

Biomedical Signal Processing and Control , Volume 79, Part 1, Article Number 104075

Impact Factor: 5.076 | **Quartile:** 2 | **Citations:** 41

DOI: https://doi.org/10.1016/j.bspc.2022.104075

A Deep Learning Based Approach for Grading of Diabetic Retinopathy Using Large Fundus Image Dataset
2022

Ayesha Mehboob Muhammad Usman Akram Norah Saleh Alghamdi Anum Abdul Salam

Diagnostics , Volume 12, Issue 12, Article Number 3084

Impact Factor: 3.992 | **Quartile:** 2 | **Citations:** 22

Vertebrae localization and spine segmentation on radiographic images for feature-based curvature classification for scoliosis

2022

Joddat Fatima Mashood Mohammad Mohsan Amina Jameel Muhammad Usman Akram Adeel Muzaffar Syed

Concurrency and Computation Practice and Experience, Volume 34, Issue 26, Article Number e7300

Impact Factor: 1.831 | **Quartile:** 3 | **Citations:** 9

Knowledge distillation driven instance segmentation for grading prostate cancer

2022

Taimur Hassan Muhammad Shafay Bilal Hassan Muhammad Usman Akram AymanElBaz NaoufelWerghi

Computers in Biology and Medicine, Volume 150, Article Number 106124

Impact Factor: 6.698 | **Quartile:** 1 | **Citations:** 15

Intelligent framework for automated failure prediction, detection, and classification of mission critical autonomous flights

2022

Muhammad Waqas Ahmad Muhammad Usman Akram Khurram Hameed Rashid Ahmad Ali Hassan

ISA Transactions, Volume 129, Part A, Pages 355-371

Impact Factor: 5.911 | **Quartile:** 1 | **Citations:** 29

Heart rate estimation in PPG signals using Convolutional-Recurrent Regressor

2022

Shahid Ismail Imran Siddiqui Muhammad Usman Akram

Computers in Biology and Medicine, Volume 145, Article Number 105470

Impact Factor: 6.698 | **Quartile:** 1 | **Citations:** 27

Automatic Localization and Segmentation of Vertebrae for Cobb Estimation and Curvature Deformity

2022

Joddat Fatima Amina Jameel Muhammad Usman Akram Malaika Mushtaq Adeel Muzaffar Syed

Intelligent Automation and Soft Computing, Volume 34, Issue 3, Pages 1489-1504

Impact Factor: 3.401 | **Quartile:** 2 | **Citations:** 4

EEG-based emotion charting for Parkinson's disease patients using Convolutional Recurrent Neural Networks and cross dataset learning

2022

Muhammad Najam Dar Muhammad Usman Akram Rajamanickam Yuvaraj Sajid Gul Khawaja M. Murugappan

Computers in Biology and Medicine, Volume 144, Article Number 105327

Impact Factor: 7.7 | **Quartile:** 1 | **Citations:** 57

Machine Learning and Signal Processing Based Analysis of sEMG Signals for Daily Action Classification

2022

Sajid Gul Khawaja Muhammad Usman Akram Aimal Khan Arsalan Shaukat Ayesha Sadiq Norah Saleh Alghamdi

IEEE Access, Volume 10, Pages 40506-40516

Impact Factor: 3.476 | **Quartile:** 2 | **Citations:** 8

A Hybrid VDV Model for Automatic Diagnosis of Pneumothorax Using Class-Imbalanced Chest X-Rays Dataset

2022

Tahira Iqbal Arsalan Shaukat Muhammad Usman Akram Abdul Wahab Muzaffar Zartasha Mustansar Yung-Cheol Byun

IEEE Access, Volume 10, Pages 27670-27683

Impact Factor: 3.367 | **Quartile:** 2 | **Citations:** 11

Continual Learning Objective for Analyzing Complex Knowledge Representations

2022

Asad Mansoor Khan Taimur Hassan Muhammad Usman Akram Norah Saleh Alghamdi Naoufel Werghi

Sensors, Volume 22(4), Article Number 1667

Impact Factor: 3.576 | **Quartile:** 1 | **Citations:** 22

Localization and Edge-based Segmentation of Lumbar Spine Vertebrae to Identify the Deformities Using Deep Learning Models

2022

Malaika Mushtaq Muhammad Usman Akram Norah Saleh Alghamdi Joddat Fatima Rao Farhat Masood

Sensors, Volume 22(4), Article Number 1547

A deep learning approach for the classification of TB from NIH CXR dataset 2022

S. Zainab Yousuf Zaidi Muhammad Usman Akram Amina Jameel Norah Saleh Alghamdi

IET Image Processing, Volume 16, Issue 3, Pages 787-796

Attention based automated radiology report generation using CNN and LSTM 2022

Mehreen Sirshar Faheem Khalil Paracha Muhammad Usman Akram Norah Saleh Alghamdi Syeda Zainab Yousuf Zaidi3 Tatheer Fatima

Plos One, Volume 17(1), Article Number e0262209

Incremental Cross-Domain Adaptation for Robust Retinopathy Screening via Bayesian Deep Learning 2021

Taimur Hassan Bilal Hassan Muhammad Usman Akram Shahrukh Hashmi Abdel Hakim Taguri Naoufel Werghi

IEEE Transactions on Instrumentation and Measurement, Volume 70, Article Number: 2516414

Automatic Diagnosis of Pneumothorax from Chest Radiographs: A Systematic Literature Review 2021

Arsalan Shaukat Zartasha Mustansar Tahira Iqbal Muhammad Usman Akram Aimal Khan

IEEE Access, Volume 9, Pages 145817-145839

Model Predictive Control: Taking the idea of Artificial Pancreas a step forward for Diabetes Management 2021

Rahmat Ullah Safdar Muwahida Liaquat Syed Muhammad Tahir Zaidi Muhammad Usman Akram

International Journal of Pharma Medicine and Biological Sciences, Volume 10(4), Pages 142-147

Lung Segmentation-Based Pulmonary Disease Classification Using Deep Neural Networks 2021

S. Zainab Yousuf Zaidi Muhammad Usman Akram Amina Jameel Norah Saleh Alghamdi

IEEE Access, Volume 9, Pages 125202-125214

An incremental learning approach to automatically recognize pulmonary diseases from the multi-vendor chest radiographs 2021

Mehreen Sirshar Taimur Hassan Shoab Ahmad Khan Muhammad Usman Akram

Computers in Biology and Medicine, Volume 134, Article Number 104435

Clinically Verified Hybrid Deep Learning System for Retinal Ganglion Cells Aware Grading of Glaucomatous Progression 2021

Hina Raja Taimur Hassan Muhammad Usman Akram Naoufel Werghi

IEEE Transactions on Biomedical Engineering, Volume 68, Issue 7, Pages 2140-2151

Spinal vertebrae localization and analysis on disproportionality in curvature using radiography - a comprehensive review 2021

Joddat Fatima Muhammad Usman Akram Amina Jameel Adeel Muzaffar Syed

EURASIP Journal on Image and Video Processing, Volume 2021, Article Number: 23

Capturing the real customer experience based on the parameters in the call detail records 2021

Nusratullah Khan Muhammad Usman Akram Asadullah Shah Norah Saleh Alghamdi Shoab Ahmed Khan

Multimedia Tools and Applications, Pages 1-23

Genetic Algorithm Based Automatic Out-Patient Experience Management System (GAPEM) Using RFIDs and Sensors   2021

Saria Safdar Shoab Ahmed Khan Arsalan Shaukat Muhammad Usman Akram

IEEE Access , Volume 9, Pages 8961-8976

Impact Factor: 3.367 | **Quartile:** 2 | **Citations:** 10

Heart rate tracking in Photoplethysmography signals affected by motion artifacts: A review   2021

Shahid Ismail Imran Siddiqi Muhammad Usman Akram

EURASIP Journal on Advances in Signal Processing, Volume 2021, Article Number 5

Impact Factor: 1.630 | **Quartile:** 3 | **Citations:** 71

RAG-FW: A hybrid convolutional framework for the automated extraction of retinal lesions and lesion-influenced grading of human retinal pathology   2021

Taimur Hassan Muhammad Usman Akram Naoufel Werghi Noman Nazir

IEEE Journal of Biomedical and Health Informatics , Volume 25, Issue 1, Pages 108-120

Impact Factor: 5.772 | **Quartile:** 1 | **Citations:** 47

Extraction of Retinal Layers Through Convolution Neural Network (CNN) in an OCT Image for Glaucoma Diagnosis   2020

Hina Raja Muhammad Usman Akram Arsalan Shaukat Norah Alghamdi Sajid Gul Khawaja Noman Nazir Shoab Ahmad Khan

Journal of Digital Imaging , Volume 33, Pages 1428-1442

Impact Factor: 4.056 | **Quartile:** 1 | **Citations:** 39

RIDB: A Dataset of fundus images for retina based person identification   2020

Muhammad Usman Akram Anum Abdul Salam Sajid Gul Khwaja Shoab Ahmed Khan Gul Hassan Naqvi

Data in Brief , Volume 33, Article Number 106433

Impact Factor: 0 | **Citations:** 15

sEMG dataset of routine activities   2020

Asad Mansoor Khan Sajid Gul Khawaja Muhammad Usman Akram Ali Saeed Khan

Data in Brief , Volume 33, Article Number 106543

Impact Factor: - | **Citations:** 7

Neurotransmission cognitive theory: A novel approach for non-invasive brain stimulation using mechanical vibrations for the rehabilitation of neurological patients   2020

Aliya A. Khan Shahbaz K. Ranjha Muhammad Usman Akram Sajid Gul Khawaja Arsalan Shaukat

Medical Hypotheses , Volume 143, Article Number 110078

Impact Factor: 1.538 | **Quartile:** 4 | **Citations:** 6

CNN and LSTM-Based Emotion Charting Using Physiological Signals   2020

Sajid Gul Khawaja Muhammad Usman Akram Muhammad Najam Dar Amit N. Pujari

Sensors , Volume 20, Issue 16, Article Number 4551

Impact Factor: 3.576 | **Quartile:** 1 | **Citations:** 94

Automated diagnosis system for age-related macular degeneration using hybrid features set from fundus images   2020

Samina Khalid Tehmina Shehryar Waqas Ahmed Marium Sadiq Mahak Manzoor Nelam Nosheen Muhammad Usman Akram

International Journal of Imaging Systems and Technology , Pages 1-17

Impact Factor: 2.000 | **Quartile:** 3 | **Citations:** 12

Data on OCT and Fundus Images for the Detection of Glaucoma   2020

Muhammad Usman Akram Sajid Gul Khawaja Hina Raja Muhammad Arslan Aneeqa Ramzan Noman Nazir Hina Raja Muhammad Arslan Aneeqa Ramzan Noman Nazir

Data in Brief , Volume 29, Article Number 105342

Improved automated detection of glaucoma by correlating fundus and SD-OCT image analysis   2020

Tehmina Shehryar Muhammad Usman Akram Samina Khalid Shamila Nasreen Anum Tariq Aqib Perwaiz Tehmina Shehryar Samina Khalid Shamila Nasreen Anum Tariq Aqib Perwaiz Arsalan Shaukat

International Journal of Imaging Systems and Technologies, Volume 30, Issue 1, Pages 1-20

Data on fundus images for vessels segmentation, detection of hypertensive retinopathy, diabetic retinopathy and papilledema   2020

Shahzad Akbar Taimur Hassan Ubaidullah Yasin Imran Basit Sajid Gul Khawaja Muhammad Usman Akram Shahzad Akbar Taimur Hassan Ubaidullah Yasin Imran Basit

Data in Brief, Volume 29, Article Number 105282

Multiprocessor architecture for real-time applications using mean shift clustering   2019

Amna Tehreem Sajid Gul Khawaja Asad Mansoor Khan Muhammad Usman Akram Shoab A. Khan

Journal of Real-Time Image Processing, Volume 16, Pages: 2233-2246

Key individual identification using dimensional relevance in the stratum of networks   2019

Fozia Noor Muhammad Usman Akram Asadullah Shah Shoab Ahmad Khan

Journal of Intelligent & Fuzzy Systems, Volume 37, Issue 2, Pages 2153-2167

Diabetic Retinopathy Detection through Novel Tetragonal Local Octa Patterns and Extreme Learning Machines   2019

Tahira Nazir Aun Irtaza Zain Shabbir Ali Javed Usman Akram Muhammad Tariq Mahmood

Artificial Intelligence in Medicine, Vol 99

Localization and classification of heartbeats using robust adaptive algorithm   2019

Shahid Ismail Malik Imran Siddiqi Muhammad Usman Akram

Biomedical Signal Processing and Control, Volume: 49 Pages: 57-77

Automated glaucoma detection using retinal layers segmentation and optic cup-to-disc ratio in optical coherence tomography images   2019

Sajid Gul Khawaja Ubaid Ullah Yasin Wasi Haider Butt Aneeqa Ramzan Muhammad Usman Akram Arsalan Shaukat

IET Image Processing, Volume 13, Issue 3, Pages 409-420

Deep structure tensor graph search framework for automated extraction and characterization of retinal layers and fluid pathology in retinal SD-OCT scans   2019

Taimur Hassan Muhammad Usman Akram Muhammad Furqan Masood Ubaidullah Yasin

Computers in Biology and Medicine, Volume: 105 Pages: 112-124

Automated techniques for blood vessels segmentation through fundus retinal images: A review   2019

Shahzad Akbar Muhammad Sharif Muhammad Usman Akram Tanzila Saba Toqeer Mahmood Mahyar Kolivand

Microscopy Research and Technique, Volume 82, Issue 2

CPS-based fully automatic cardiac left ventricle and left atrium segmentation in 3D MRI   2019

Ibtihaj Ahmad Farhan Hussain Shoab Ahmed Khan Usman Akram Gwanggil Jeon

Journal of Intelligent & Fuzzy Systems, Volume 36, Issue 5, Pages 4153-4164

A Parallel Architecture for the Partitioning around Medoids (PAM) Algorithm for Scalable Multi-Core 2018
Processor Implementation with Applications in Healthcare

Hassan Mushtaq Sajid Gul Khawaja Muhammad Usman Akram Amanullah Yasin Muhammad Muzammal Shehzad Khalid Shoab Ahmad Khan

Sensors , NULL

Multilayered Deep Structure Tensor Delaunay Triangulation and Morphing Based Automated Diagnosis 2018
and 3D Presentation of Human Macula

Taimur Hassan M. Usman Akram Mahmood Akhtar Shoab Ahmad Khan Ubaidullah Yasin

Journal of Medical Systems , NULL

Fundus Images-Based Detection and Grading of Macular Edema Using Robust Macula Localization 2018

Adeel M. Syed Muhammad Usman Akram Tahir Akram Muhammad Muzammal Shehzad Khalid Muazzam Ahmed Khan

IEEE Access , Volume 6, Pages 58784-58793

Analysis of PCG signals using quality assessment and homomorphic filters for localization and 2018
classification of heart sounds

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

Structure Tensor Graph Searches Based Fully Automated Grading and 3D Profiling of Maculopathy 2018
From Retinal OCT Images

Taimur Hassan Muhammad Usman Akram Arsalan Shaukat Sajid Gul Khawaja BILAL HASSAN

IEEE Access , Volume 6, Pages 44644-44658

Decision support system for detection of hypertensive retinopathy using arteriovenous ratio 2018

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A Survey On Prevalent Approaches To Predict The Popularity Of Social Content
2022

Amna Shahid Muhammad Usman Akram Anum Abdul Salam Jahan Zeb

2022 2nd International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(177,)

Citations: N/A
DOI: 10.1109/ICoDT255437.2022.9787430

YAAD: Young Adult's Affective Data Using Wearable ECG and GSR sensors
2022

Muhammad Najam Dar Amna Rahim Dr Muhammad Usman Akram Dr Sajid Gul Khawaja Aqsa Rahim

2022 2nd International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(177,)

Citations: N/A
DOI: 10.1109/ICoDT255437.2022.9787465

Surface EMG Signal Analysis using Hand-Crafted Features for Detection and Classification of GTC seizures
2022

Maryam Naveed Dr Sajid Gul Khawaja Dr Muhammad Usman Akram

2022 2nd International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(282,)

Citations: N/A
DOI: 10.1109/ICoDT255437.2022.9787476

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

Efficient Future Prediction using Neural Network in Vehicular Ad hoc Networks
2022

Sidra Rashid Muazzam A Khan Muhammad Usman Akram Ali Saeed Khan

2022 2nd International Conference of Smart Systems and Emerging Technologies (SMARTTECH), res.country(192,)

Citations: N/A
DOI: 10.1109/SMARTTECH54121.2022.00050

Automatic Prostate Cancer Grading Using Deep Architectures
2021

Muhammad Mohsin Arslan Shaukat Muhammad Usman Akram Muhammad Kaab Zarrar

2021 IEEE/ACS 18th International Conference on Computer Systems and Applications (AICCSA), res.country(136,)

VGG-UNET for Brain Tumor Segmentation and Ensemble Model for Survival Prediction 2021

Ali Nawaz Muhammad Usman Akram Amad Rizwan Ali Attique Ur Rehman Anum Abdul Salam Jahan Zeb

International Conference on Robotics and Artificial Intelligence (ICRAI), res.country(275,)

Cassava Leaf Disease Classification using Deep Neural Networks 2021

Alina Maryum Muhammad Usman Akram Anum Abdul Salam

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Towards Automatic Recognition of Sounds Observed in Daily Living Activity 2019

Arslan Shaukat Ammar Younis Usman Akram Muhammad Mohsin Zartasha Mustansar

18th International IEEE Conference on Brain Informatics and Cognitive Computing, res.country(109,)

Visualization: A Tool to Study Nodes in Multi-dimensional Networks 2019

Fozia Noor Muhammad Usman Akram Asadullah Shah Shoab Ahmad Khan

Intelligent Computing - Proceedings of the Computing Conference, res.country(231,)

A Machine Learning Technique to Classify LSST Observed Astronomical Objects Based on Photometric Data 2019

Asad Mansoor Khan Muhammad Usman Akram Sajid Gul Khawaja Ali Saeed Khan

2019 6th Swiss Conference on Data Science (SDS), res.country(43,)

Emotion Recognition in Video Clips Using Simple and Extended Center Symmetric LBP 2019

Zaki Zahid Arslan Shaukat Rizwan Ahmed Khan Muhammad Usman Akram Yung-Cheol Byun

IEEE Transportation Electrification Conference and Expo, Asia-Pacific (ITEC Asia-Pacific), res.country(121,)

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17th International Conference E-Society 2019, res.country(165,)

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17 th International Conference on e-Society (ES 2019), res.country(165,)

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2019 2nd International Conference on Communication, Computing and Digital systems (C-CODE), res.country(177,)

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Tayyaba Rasool Wasi Haider Butt Arslan Shaukat Muhammad Usman Akram

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2018

Rabeeah Ali Muhammad Usman Akram

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2018

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2018

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2018 IEEE 20th International Conference on e-Health Networking, Applications and Services (Healthcom), res.country(56,)

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Aneeqa Ramzan Muhammad Usman Akram Javeria Ramzan Qurat-ul-Ain Mubarak Anum Abdul Salam Ubaid Ullah Yasin

Science and Information Conference 2018 , res.country(231,)

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2018

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International Conference Image Analysis and Recognition ICIAR 2018, res.country(183,)

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2018

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Calculating customer experience management index for telecommunication service using genetic algorithm based weighted attributes

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M. Usman Akram Shoab Ahmed

Innovative Research and Development (ICIRD), 2018 IEEE International Conference, res.country(217,)

Detection of Influential Nodes Using Social Networks Analysis Based On Network Metrics

2018

Aftab Farooq Muhammad Usman Akram Muhammad Uzair Gulraiz Javaid Joyia

2018 International Conference on Computing, Mathematics and Engineering Technologies – iCoMET 2018, res.country(177,)

Citations: N/A
DOI: 10.1109/ICOMET.2018.8346372

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Hafiz Adnan Niaz Muhammad Usman Akram Usman Akbar

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Citations: N/A
DOI: 10.1109/ICEET1.2018.8338629

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Gulraiz Javaid Joyia Muhammad Usman Akram Chaudary Naeem Akbar Muhammad Furqan Maqsood

International Conference on Software Engineering and Information Management, res.country(136,)

Citations: N/A
DOI: 10.1145/3178461.3178480

Important attributes of customer satisfaction in telecom industry: A survey based study   2017

Usman Akram Shoab Ahmed

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Citations: N/A
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Muazzam Khattak Hafiz Adnan Niaz Usman Akram Anam Usman Awais Rafique

2nd International Conference on Multimedia Systems and Signal Processing, res.country(227,)

Citations: N/A
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2017 1st International Conference on Next Generation Computing Applications (NextComp), res.country(153,)

Citations: N/A
DOI: 10.1109/NEXTCOMP.2017.8016182

An integrated framework for clinical grading of cataract   2017

Isma Shaheen M. Usman Akram

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Citations: N/A
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Citations: N/A

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21st International Conference on Image Processing, Computer Vision and Pattern Recognition (IPCV), Las Vegas, Nevada, USA, res.country(233,)

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2017 40th International Conference on Telecommunications and Signal Processing (TSP), res.country(68,)

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International Conference on Computer, Software and Modeling, res.country(154,)

A practical approach to OCT based classification of Diabetic Macular Edema   2017

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Signals and Systems (ICSigSys), 2017 International Conference, res.country(100,)

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Comparison of different de-noising techniques for removal of poison noise from cervical X-Rays images   2017

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Vertebra localization and centroid detection from cervical radiographs 2017

Anum Mehmood M. Usman Akram Anam Tariq

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Relative Smoothness for Image Layer Separation by Second Order Laplacian Filter 2017

Muhammad Asif Muhammad Usman Akram

5th International Conference on Information and Education Technology, res.country(113,)

Implementation and Evaluation of Optimized Algorithm for Software Architectures Analysis through Unsupervised Learning (Clustering) 2016

Qadeem Khan Dr. Usman Akram Wasi Haider Butt Saad Rehman

17th International Conference on Sciences and Techniques of Automatic Control and Computer Engineering (STA), res.country(221,)

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Imparting Data Knowledge in Discrete Data Volumes using Crowded Agent Approach for Multi-Perspective and Visualized Big Data 2016

Hiba Khalid Usman Qamar Usman Akram

2016 Future Technologies Conference (FTC), res.country(233,)

Citations: N/A
DOI: 10.1109/FTC.2016.7821593

A Novel Mean-Shift Architecture for Scalable Multiprocessor Implementation   2016

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Citations: N/A
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Imparting Data Knowledge in Discrete Data Volume using Crowded Agent Approach for Multi-   2016
Perspective and Visualized Big Data

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Citations: N/A
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Business Intelligence: Self Adapting and Prioritizing Database Algorithm for Providing Big Data Insight   2016
in Domain Knowledge and Processing of Volume based Instructions based on Scheduled and
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Mazhar Hameed Usman Qamar Usman Akram

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Citations: N/A
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A Novel Multiprocessor Architecture for k-means Clustering Algorithm based on Network-on-Chip   2016

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2016 19th International Multi-Topic Conference (INMIC), res.country(177,)

Citations: N/A
DOI: 10.1109/INMIC.2016.7840112

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Detection of Acoustic Events by using MFCC and Spectro-Temporal Gabor Filterbank Features   2016

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8th International Conference on Signal Processing Systems, res.country(170,)

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Uzma Jamil Dr. Shehzad Khalid Dr. M.Usman Akram

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Madiha Tahir Usman Akram Muhammad Arslan Idris

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Citations: N/A
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Attia Irum M. Usman Akram Sara Ayub Saima Waseem M.Junaid Khan

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Amna Pir Muhammad Usman Akram Muazzam A. Khan

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2015 IEEE International Symposium on Signal Processing and Information Technology (ISSPIT), res.country(2,)

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Shahzad Amin Sheikh Asra Ashraf M. Usman Akram Sarmad Abbas

2015 IEEE International Conference on Imaging Systems and Techniques (IST), res.country(48,)

A Review Analysis on Early Glaucoma Detection Using Structural Features 2015

Kamran Wazir M Usman Akram Syed Muhammad Anwar Kamran Wazir

Imaging Systems and Techniques (IST), 2015 IEEE International Conference, res.country(48,)

Detection of Macular Whitening and Retinal Hemorrhages for Diagnosis of Malarial Retinopathy 2015

Asra Ashraf Muhammad Usman Akram Shahzad Amin Sheikh Sarmad Abbas

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A Robust Algorithm for Segmentation of Blood Vessels in the Presence of Lesions in Retinal Fundus Images 2015

Amna Waheed Awan Zahra Waheed Awan Muhammad Usman Akram

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Anum Abdul Salam M. Usman Akram Kamran Wazir Syed Muhammad Anwar

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Mavera Mazhar Butt Usman Akram Shoab A. Khan

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Muhammad Najam Dar Muhammad Usman Akram Arslan Shaukat Muazzam Ali Khan

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Citations: 28
DOI: 10.1109/ICITCS.2015.7292977

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Arslan Shaukat Mansoor Aziz M Usman Akram

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Khush Naseeb Fatima Usman Akram Dr. Shafaat A. Bazaz3

2015 5th International Conference on IT Convergence and Security (ICITCS), res.country(157,)

Citations: N/A
DOI: 10.1109/ICITCS.2015.7293007

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Samra Irshad Muhammad Usman Akram Sara Ayub Anaum Ayaz

ICIAR: International Conference Image Analysis and Recognition, res.country(38,)

Citations: N/A
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Uzma Gulzar Abbasi Muhammad Usman Akram

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Citations: N/A
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Saima Waseem Muhammad Usman Akram Bilal Ashfaq Ahmed

7th International Conference on Information and Automation for Sustainability, res.country(129,)

An Efficient Rule-Based Classification of Diabetes Using ID3, C4.5, & CART Ensembles
2014

Saba Bashir Muhammad Usman Akram Farhan Hassan Khan M.Younus Javed

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2014

Aniqa Azam Muhammad Usman Akram Usman Qamar

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Analysis of EEG Signals for Detection of Epileptic Seizure using Hybrid Feature Set
2014

Ammama Furrukh Gill Syeda Alishbah Fatima Sajid Gul Khawaja Saqib Ejaz Awan Muhammad Usman Akram

Theory and Applications of Applied Electromagnetics APPEIC 2014, res.country(100,)

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2014

Faraz Tahir M.Usman Akram Mujahid Abbass Albab Ahmad Khan

2014 14th International Conference on Hybrid Intelligent Systems, res.country(122,)

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2014

Saima Waseem Muhammad Usman Akram Bilal Ashfaq Ahmed

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2014

Daniyal Usmani Tanveer Ahmad M. Usman Akram Abdullah Danyal Saeed

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2014

Muneeba Saleem Muhammad Usman Akram

2014 Cairo International Biomedical Engineering Conference (CIBEC), res.country(65,)

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2014

Samra Irshad Muhammad Usman Akram Muhammad Salman Ubaidullah Yasin

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2014

Adeel M. Syed M. Usman Akbar M. Usman Akram Joddat Fatima

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Separation and Classification of Crackles and Bronchial Breath Sounds from Normal Breath Sounds using Gaussian Mixture Model
2014

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Analysis of OCT Images for Detection of Choroidal Neovascularization in Retinal Pigment Epithelial Layer
2014

Sadaf Ayaz Sadaf Sahar Madeeha Zafar Muhammad Usman Akram Yasser Nadeem

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2014

Muhammad Usman Muhammad Usman Akram

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2014

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2014

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MARYAM MUBBASHAR ANAM USMAN M. USMAN AKRAM

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M. Usman Akram Aftab Khan Khalid Iqbal Wasi Haider Butt

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M. Usman Akram Anam Tariq

Automated localization and detection of the optic disc (OD) is an essential step in the analysis of digital diabetic retinopathy systems. Accurate localization and detection of optic disc boundary is very useful in proliferative diabetic retinopathy where fragile vessels develop in the retina. In this paper, we propose an automated system for optic disk localization and detection. Our method localizes optic disk using average filter and thresholding, extracts the region of interest (ROI) containing optic disk to save time and detects the optic disk boundary using Hough transform. This method can be used in computerized analysis of retinal images, e.g., in automated screening for diabetic retinopathy. The technique is tested on publicly available DRIVE, STARE, diaretdb0 and diaretdb1 databases of manually labeled images which have been established to facilitate comparative studies on localization and detection of optic disk in retinal images. The proposed method achieves an average accuracy of 96.7% for localization and an average area under the receiver operating characteristic curve of 0.958 for optic detection. , res.country(177,)

Citations: N/A
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M. Usman Akram Ali Atzaz M. Younus Javed Umair Ali Khan Niazi

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M. Usman Akram Sarwat Nasir M. Almas Anjum M. Younus Javed

2009 WRI World Congress on Computer Science and Information Engineering, res.country(233,)

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2009 IEEE Symposium on Computational Intelligence for Image Processing, res.country(233,)

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M. Usman Akram Ali Atzaz S. Farrukh Aneeque Shoab A. Khan

2009 International Conference on Digital Image Processing, res.country(217,)

Citations: N/A

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Retinal Images: Noise Segmentation

Muhammad Usman Akram Anam Tariq Sarwat Nasir

2008 IEEE International Multitopic Conference, res.country(177,)

Citations: N/A

2008

A modified singular point detection algorithm

Rabia Anwar M. Usman Akram Rabia Arshad Muhammad Umer Munir

5th International Conference, ICIAR 2008, res.country(183,)

Citations: N/A

2008

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Anam Tariq M. Usman Akram Sarwat Nasir Rabia Arshad

International Conference on Image Analysis and Recognition, res.country(183,)

Citations: N/A

2008

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Assia Khanam M. Zubair Shafiq M. Usman Akram

2008 Congress on Image and Signal Processing, res.country(48,)

Citations: N/A

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M. Usman Akram Sarwat Nasir Anam Tariq Irfan Zafar Wasim Siddique Khan

2008 Canadian Conference on Electrical and Computer Engineering, res.country(38,)

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Core Point Detection Using Improved Segmentation and Orientation

M. Usman Akram Anam Tariq Sarwat Nasir Assia Khanam

2008 IEEE/ACS International Conference on Computer Systems and Applications, res.country(186,)

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M. Usman Akram Anam Tariq Shahida Jabeen Shoab A. Khan

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2008

Book Chapters

Physical Action Categorization Pertaining to Certain Neurological Disorders Using Machine Learning-Based Signal Analysis
2022

Asad Mansoor Khan Sajid Gul Khawaja Muhammad Usman Akram Ali Saeed Khan

In: *Book on Biomedical Signals Based Computer-Aided Diagnosis for Neurological Disorders*, 1st Edition, Chapter 2, Pages 23-42

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DOI: https://doi.org/10.1007/978-3-030-97845-7_2

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2020

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In: *Book on Diabetes and Retinopathy*, Volume 2: Computer-Assisted Diagnosis, Chapter 5, Pages 93-108

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2018

Qurat-ul-ain Mubarak Muhammad Usman Akram Arsalan Shaukat Aneeqa Ramazan

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Citations: 9
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Editorial Activities

Diagnostics
2023
Edited Journal Issue / Proceeding / Book
Impact Factor: N/A

2020
Reviewed Papers for Journals
Impact Factor: 3.83

2020
Reviewed Papers for Journals
Impact Factor: 4.098

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Reviewed Papers for Journals
Impact Factor: 4.098

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Reviewed Papers for Journals
Impact Factor: 4.098

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Reviewed Papers for Journals
Impact Factor: 2.11

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Reviewed Papers for Journals
Impact Factor: 3.434

2020
Reviewed Papers for Journals

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Reviewed Papers for Journals
Impact Factor: 3.74

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Impact Factor: 3.74

Reviewed Papers for Journals
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Reviewed Papers for Journals
Impact Factor: 1.648

Reviewed Papers for Journals

Intellectual Property

Copyrights

Web Based tool for OCT Image Generation, Segmentation and Classification
    Status: Filed
2024

Gennotate:A python-based computer program that generates Optical Coherence Tomography images, helps in automatic annotation followed by retinal disease classification.
    Status: Filed
2024

Deep Learning Based PAS Stained Slide Analysis and Noninvasive Confocal Image Staining
    Status: Filed
2024

Osteodoc an AI based Application for Osteoarthritis
    Status: Filed
2022

A system for detecting and regulating anxiety using haptics
    Status: Granted Filed
2020

Graphical User Interface of EKKO-Wave therapeutic Device
    Status: Licensed Filed
2020

Mobile application of EKKO-Wave therapeutic Device
    Status: Licensed Filed
2020

Web application of EKKO-Wave therapeutic Device
    Status: Licensed Filed
2020

Epilepsy Care mobile application
    Status: Licensed Filed
2020

Desktop application for HESS screening system
    Status: Filed
2020

Patents

Systems and Methods for Testing Neurological Disorders using Vibratory Therapeutic Device
    Status: Filed
2019

Apparatus and System for Retinal Screening Using Smartphone
    Status: Filed
2018

Retinal Screening System using mobile terminal and method thereof
    Status: Granted
2017

A NETWORK-ON-CHIP BASED MULTIPROCESSOR ARCHITECTURE FOR IMPLEMENTING K-MEANS CLUSTERING ALGORITHM
    Status: Filed
2017

Industrial Designs

Vibration Therapy device
    Status: Filed
2020

Joy Stick based Assembly for Acquisition of Retina using Portable Device (Class-12)
    Status: Granted Filed
2019

Mobile Mount for Retina Acquisition (Class-12)
    Status: Granted Filed
2019

HESS Screening System (Class-12)
    Status: Filed
2019

EKKO-WAVE THERAPEUTIC DEVICE
    Status: Filed
2019

Trademarks

EKKO-Wave Therapeutic Device
    Status: Licensed Filed
2019