

2022 2nd International Conference on Digital Futures and Transformative Technologies (ICoDT2 2022)

**Rawalpindi, Pakistan
24 – 26 May 2022**



**IEEE Catalog Number: CFP22AD4-POD
ISBN: 978-1-6654-9820-3**

**Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP22AD4-POD
ISBN (Print-On-Demand):	978-1-6654-9820-3
ISBN (Online):	978-1-6654-9819-7

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

Automatic Detection and classification of Correct placement of tubes on chest Xrays using deep learning with EfficientNet	1
<i>Moneeb Abbas, Anum Abdul Salam and Jahan Zeb</i>	
Baggage Threat Detection Under Extreme Class Imbalance.....	7
<i>Abdelfatah Ahmed, Divya Velayudhan, Taimur Hassan, Bilal Hassan, Jorge Dias and Naoufel Werghi</i>	
Enhancement of Depth Map through Weighted Combination of Guided Image Filters in Shape-From-Focus	13
<i>Zubair Ahmed, Ahsan Shahzad and Usman Ali</i>	
Role of Non-functional Requirements in Projects' Success	20
<i>Arsalan Ali, Ibrahim Khalil, Israr Ahmad, Iqra Parveen and Uzair Khaleeq Uz Zaman</i>	
Automatic Detection and classification of Scoliosis from Spine X-rays using Transfer Learning	27
<i>Arslan Amin, Moneeb Abbas and Anum Abdul Salam</i>	
Semantic Keywords Extraction from Paper Abstract in the Domain of Educational Big Data to support Topic Clustering	33
<i>Ali Arshad, Wanghu Chen, Yang Liu and Nauman Ali Khan</i>	
Framework for Live Migration of FPGA based ECB-mode AES-128 accelerator.....	39
<i>Yame Asfia, Sajid Gul Khawaja, Muhammad Asad and Alina Mirza</i>	
Convolutional Neural Network Based Thermal Image Classification	45
<i>Qirat Ashfaq and Dr.Muhammad Usman Akram</i>	
An enhanced agile-V model for system engineering in complex medical device development	51
<i>Aliya Ashraf Khan, Muhammad Usman Akram, Anam Abdul Salam and Wasi Haider Butt</i>	
Cost Effective Welding System by using AR3 Robot	57
<i>Seemal Asif</i>	
YAAD: Young Adult's Affective Data Using Wearable ECG and GSR sensors	63
<i>Muhammad Najam Dar, Amna Rahim, Muhammad Usman Akram, Sajid Gul Khawaja and Aqsa Rahim</i>	
Evaluation of the Electromagnetic forces in the zigzag transformer using a computational method	70
<i>Kamran Dawood, Guven Komurgoz and Fatih Isik</i>	
Deep Framework for Predicting COVID-19 and Related Lung diseases using CXR Images.	76
<i>Wajeha Fareed, Muhammad Usman Akram, Anum Abdul Salam and Maria Alam</i>	
A Composite Dataset of Lumbar Spine Images with Mid-Sagittal View Annotations and Clinically Significant Spinal Measurements	83
<i>Rao Farhat Masood, Taimur Hassan, Hina Raja, Bilal Hassan, Jorge Dias and Naoufel Werghi</i>	

Develop an Ontology for E-Commerce based on a web application to assist color-blind people	88
<i>Muhammad Usman Farooq and Usman Qamar</i>	
Emotion Recognition from Facial Images using Hybrid Deep Learning Models	93
<i>Arfa Fatima, Arslan Shaukat and Maria Alam</i>	
Handcrafted and Deep features based Classification of Scoliosis	100
<i>Joddat Fatima, Mashood M. Mohsan, Muhammad Umair Qaisar, Muhammad Hamza, Muhammad Zeshan Tahir and Ghazzal Zaman</i>	
Power profiling-based side-channel attacks on FPGA and Countermeasures: A survey	106
<i>Ali Hasnain, Yame Asfia and Sajid Gul Khawaja</i>	
Machine Learning Algorithm Analysis for Detecting and Classification Faults in Power Transmission System	114
<i>Jawad Ul Hassan and Imran Fareed Nizami</i>	
Incremental Instance Segmentation for the Gleason Tissues Driven Prostate Cancer Prognosis	119
<i>Taimur Hassan, Abdelfatah Ahmed, Bilal Hassan, Muhammad Shafay, Ayman Elbaz, Jorge Dias and Naoufel Werghi</i>	
A Composite Retinal Fundus and OCT Dataset to Grade Macular and Glaucomatous Disorders	125
<i>Taimur Hassan, Hina Raja, Bilal Hassan, Muhammad Usman Akram, Jorge Dias and Naoufel Werghi</i>	
Using Machine Learning Algorithms to Detect Dysplasia in Barretts Esophagus	131
<i>Sikandar Hayat, Faisal Rehman, Naveed Riaz and Hanan Sharif</i>	
Multi-modal Emotion Recognition Using Deep Learning Architectures	137
<i>Iram Hina, Arslan Shaukat and Muhammad Usman Akram</i>	
HARResNeXt: An efficient ResNeXt inspired network for Human Activity Recognition with Inertial Sensors	143
<i>Hamza Ali Imran, Kiran Hamza and Zubair Mehmood</i>	
Framework for Dynamic Partial Configuration of Algorithms for Zynq-7000 SoC using JPEG as Case Study	147
<i>Muhammad Usama Iqbal, Sajid Gul Khawaja, Shoab Khan and Arslan Shaukat</i>	
OPTICAL FLOW ESTIMATION TECHNIQUE FOR HAZY SCENES	N/A
<i>Rao Kashif and Sana Rao</i>	
Automatically Categorizing Software Technologies	161
<i>Suleman Khan and Wasi Haider Butt</i>	
3D printing of nanocellulose structures infused Epofix resin with improved mechanical properties	167
<i>Muhammad Latif, Yangxiaozhe Jiang, Bijender Kumar and Jaehwan Kim</i>	
DDRF: The drone data regulatory framework based on blockchain	170
<i>Xuhan Liao, Yu Su, Yuhe Qiu, Shiping Huang, Yuyan Sun and Teng Hu</i>	

OSTEO-DOC: KL-GRADING OF OSTEOARTHRITIS USING DEEP-LEARNING.....	175
<i>Haider Masood, Eisha Hassan, Anum Abdul Salam and Muwahida Liaquat</i>	
Deep-learning based Framework for Sentiment Analysis in Urdu Language.....	181
<i>Maria Masood, Farooque Azam, Muhammad Waseem Anwar and Jalees Ur Rahman</i>	
Multiclass Heartbeat Classification Using ECG Signals and Convolutional Neural Networks.....	188
<i>Muhammad Deedahwar Mazhar Qureshi, Rafia Mumtaz, Timo De Waele, Daniel Peralta C'Amara, Adnan Shahid, Eli De Poorter and Ingrid Moerman</i>	
Crop and Weeds Classification in Aerial Imagery of Sesame Crop Fields Using a Patch-Based Deep Learning Model-Ensembling Method	194
<i>S.Imran Moazzam, Umar S.Khan, Tahir Nawaz and Waqar S.Qureshi</i>	
Detection of Liver Cancer through CT Images using Deep Convolutional Neural Networks	201
<i>Zunaira Naaqi, Shahzad Akbar, Syed Ale Hassan and Qurat Ul Ain</i>	
Utilization of DCT Coefficients for the Classification of Standard Datasets in Cloud/Edge Computing Environment	207
<i>Laiba Naeem Chaudhary, Farhan Hussain and Umair Gillani</i>	
Surface EMG Signal Analysis using Hand-Crafted Features for Detection and Classification of GTC seizures.....	214
<i>Maryam Naveed, Sajid Gul Khawaja and Usman Akram</i>	
A Novel Approach for Periodically Updating Rough Approximations Upon Multi-Dimension Variation	220
<i>Faryal Nosheen, Usman Qamar and Summair Raza</i>	
NLP based Model for Classification of Complaints: Autonomous and Intelligent System ..	227
<i>Quratulain, Arslan Shaukat and Usman Saif</i>	
An Analytic Hierarchy Process for urban heat stress mitigation.....	233
<i>Aiman Mazhar Qureshi and Ahmed Rachid</i>	
IoT and MQTT based web monitoring of a solar living laboratory	239
<i>Ahmed Rachid and Abdelghani Djedjig</i>	
A Review of Autonomous Glaucomatous Grading via OCT Imagery	245
<i>Hina Raja, Taimur Hassan, Bilal Hassan, Lakmal Seneviratne, Jorge Dias and Naoufel Werghi</i>	
Deep RetinaNet for Melanoma Lesion Detection.....	252
<i>Hafeez Ur Rehman, Nudrat Nida, Syed Adnan Shah, Wakeel Ahmad and Syed Muhammad Anwar</i>	
TM-BERT: A Twitter Modified BERT for Sentiment Analysis on Covid-19 Vaccination Tweets.....	257
<i>Muhammad Talha Riaz, Muhammad Shah Jahan, Sajid Gul Khawaja, Arslan Shaukat and Jahan Zeb</i>	
An Ensemble Model for Software Defect Prediction.....	263
<i>Amad Rizwan Ali, Attique Ur Rehman, Ali Nawaz, Taher Mohammad Ali and Muhammad Abbas</i>	

A Decision Making Approach for Street Lockdown to Cope with Covid-19 Cases by Using Shortest Path Selection Mechanism for Unplanned Colonies	268
<i>Tahira Sadaf, Shoab Ahmed Khan and Usman Qamar</i>	
Role of Big Data Analytics and Edge Computing in Modern IoT Applications: A Systematic Literature Review	274
<i>Ali Saeed Khan, Muazzam A Khan and Sidra Rashid</i>	
File Integrity Checkers: Functionality, Attacks and Protection	279
<i>Ahmed Salman, Sohaib Khan, Sarmad Idrees, Faisal Akram, Muhammad Junaid Khan and Aamer Latif Malik</i>	
A Reliable Learning Based Task Offloading Framework for Vehicular Edge Computing	285
<i>Balawal Shabir, Asad Malik, Anis Rahman, Muazzam Khan and Zahid Anwar</i>	
Programmable Broad Learning System to Detect Concealed and Imbalanced Baggage Threats	291
<i>Muhammad Shafay, Taimur Hassan, Abdelfatah Ahmed, Divya Velayudhan, Jorge Dias and Naoufel Werghe</i>	
Image Popularity Prediction Over Time For the Span Of 30 Days Using Machine learning Techniques	297
<i>Amna Shahid, Muhammad Usman Akram, Anum Abdul Salam and Jahan Zeb</i>	
A Survey On Prevalent Approaches To Predict The Popularity Of Social Content.....	304
<i>Amna Shahid, Muhammad Usman Akram, Anum Abdul Salam and Jahan Zeb</i>	
A FRAMEWORK FOR HUMAN ERROR, WEAKNESSES, THREATS & MITIGATION MEASURES IN AN AIRGAPPED NETWORK	311
<i>Rizwan Shaikh, Sohaib Khan, Imran Rashid, Haidar Abbas, Farrukh Naeem and Muhammad Haroon Siddiqi</i>	
Deep Learning: Convolutional Neural Networks for Medical Image Analysis - A Quick Review.....	319
<i>Hanan Sharif, Faisal Rehman and Amina Rida</i>	
Segmentation of Images Using Deep Learning: A Survey	323
<i>Hanan Sharif, Faisal Rehman, Amina Rida and Aman Sharif</i>	
Wildfire Detection in Aerial Images using Deep Learning	329
<i>Hoor Ul Ain Tahir, Abdullah Waqar, Dr. Shehzad Khalid and Dr. Syed Muhammad Usman</i>	
Paving the way to cardiovascular health monitoring using Internet of Medical Things and Edge-AI	336
<i>Muhammad Talha, Rafia Mumtaz and Abdur Rafay</i>	
Reconfigurable Architecture for Real-time Decoding of Canonical Huffman Codes.....	342
<i>Rimsha Tariq, Sajid Gul Khawaja, Muhammad Usman Akram and Farhan Hussain</i>	
Physical Adversarial Attack Scheme on Object Detectors using 3D Adversarial Object	348
<i>Abeer Toheed, Muhammad Haroon Yousaf, Rab Nawaz and Ali Javed</i>	
Diagnosis of Leukemia Disease through Deep Learning using Microscopic Images	352
<i>Qurat Ul Ain, Shahzad Akbar, Syed Ale Hassan and Zunaira Naaqvi</i>	

A Theoretical CNN Compression Framework for Resource-Restricted Environments	358
<i>Zahra Waheed Awan, Shehzad Khalid and Sajid Gul</i>	
Machine Learning based Theoretical Framework for Failure Prediction, Detection, and Correction of Mission Critical Flight Software	366
<i>Muhammad Waqas Ahmad, Muhammad Usman Akram, Kashif Saghar, Wasi Haider Butt, Rashid Ahmad and Ali Hassan</i>	
Integrated Product-Process Design: Conceptual Framework for Data Driven Manufacturing Resource Selection	374
<i>Uzair Khaleeq Uz Zaman, Mujtaba Rafique Ghoto, Ali Siadat, Aamer Ahmed Baqai, Anas Bin Aqeel and Usman Qamar</i>	