2024 5th International Conference on Advancements in **Computational Sciences** (ICACS 2024)

Lahore, Pakistan 19-20 February 2024



IEEE Catalog Number: CFP24FUA-POD ISBN:

979-8-3503-9479-5

Copyright © 2024 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:
 CFP24FUA-POD

 ISBN (Print-On-Demand):
 979-8-3503-9479-5

 ISBN (Online):
 979-8-3503-9478-8

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



Contents

1	Convolutional Neural Network Based Predictive Framework for Intensive Care Unit Readmission	1
2	Ensemble Learning for Offline Signature Verification using Fused Deep Features	10
3	${\bf An~EEG\text{-}Driven~Framework~for~Emotion~Recognition~During~Game play}$	16
4	Sentiment Analysis From Urdu Language-based Text using Deep Learning Techniques	22
5	Parameter Efficient Diverse Paraphrase Generation Using Sequence- Level Knowledge Distillation	27
6	Multimodal Objects Categorization by Fusing GMM and Multi-layer Perceptron	39
7	A Robust Model of Human Activity Recognition using Independent Component Analysis and XGBoost	46
8	Validation of a Measuring Model as a Key Aspect in the Adoption of E-Government in Developing Countries	53
9	Smart Traffic Monitoring through Drone Images via Yolov 5 and Kalman Filter	60
10	Human Action Recognition Based on Embedded HMM	68
11	Investigating Object Sorting Problem for Smart Garbage Application	7 5
12	Analyzing Public Sentiment: A Deep Dive into Twitter Discourse on the 2022 No Confidence Motion in Pakistan	82
13	EmoDetect: A Learning-Centred Affective Database for Detecting Student Frustration in Online Learning	88
14	Detecting Lung Infections with Empirical Mode Decomposition and Neural Networks	94
15	Masked Face Detection and Recognition Using a Unified Feature Extractor	100
16	A Hybrid Approach Heart Disease Prediction using Genetic Algorithm and SVM	106
17	Neural Transformers for Bias Detection: Assessing Pakistani News	112
18	IoT Based Home Automation System: Security Challenges and Solutions	119

19	Genetic Algorithm Genetic Algorithm	g 125
2 0	Test-Driven Development (TDD) in Small Software Development Teams Advantages and Challenges	: 133
21	Machine Learning and Mediapipe Assisted Sign Gesture-based Smark Keyboard for Deaf and Blind People	t 138
22	An Enhanced Convolutional Neural Network Based on L1 Regularization for Segmentation of Coronary Arteries in X-Ray Angiograms	- 144
2 3	A Machine Learning Approach to Arabic Phoneme Classification through Ensemble Techniques	h 152
24	Cyber Attack Identification System Using Deep Learning	159
2 5	Traffic Surveillance System: Robust Multiclass Vehicle Detection and Classification	l 172
26	Leveraging Large Language Models and Prompt Settings for Context-Aware Financial Sentiment Analysis	180
27	Hate Speech Detection in Roman Urdu using Machine Learning Techniques	- 189
2 8	Pattern Analysis Framework for Detection of Cardiac Disorders using VCG Signal Analysis	g 196
2 9	Optimal Feature-Centric Approach for EEG-Based Human Emotion Identification	n- 202
30	High Performance DPI Engine Design for Network Traffic Classification Metadata Extraction and Data Visualization	1 2 08
31	A Monitoring and Warning System for Hazards in Coal Mines using CNN and Sensor Fusion	g 21 4
32	Comparing the Effectiveness and Efficiency of Inspections and Walk-throughs	_ 22 3
33	Robust Object Recognition with Genetic Algorithm and Composite Salie Map	ency 23 0
34	Dynamic Adoptive Gaussian Mixture Model for Multi-Object Detection Over Natural Scenes	ո 237
35	Quad Ways for Polar Coded HARQ	245
36	Data Driven Approach to Leaf Recognition: Logistic Regression for Smart Agriculture	: 251
37	Advances Application and Challenges of Lithography Techniques	258

38	A Case Study: To Discuss the Construction of the Finite State Machin and Markov-Chain OP Models for Test Case Generation	$rac{264}{264}$
39	Identification of Technical and Vocational Education and Training (TVE trainee's personality attributes which impact skills learning	T) 273
40	Revolutionizing Data Center Networks: Dynamic Load Balancing via Floodlight in SDN Environment	a 280
41	Xtractor: A Two-Step Tweet Extractor for Sentiment Analysis	288
42	Enabling Duplex Baseband Signal Transmission via Carrier Reuse in Free Space Optical Links	n 2 94
43	Classification of Fetal Cardiac Arrhythmia Using Heart Rate Variability and Machine Learning	y 300
44	Dynamic Image Deblurring based on Crosshatch Attention Adversaria Network and Hybrid Loss	d 307
45	Efficient Vehicle Detection and Tracking using Blob Detection and Kernelized Filter	- 315
46	Enhancing Automated COVID Diagnosis from Chest X-rays using Convolutional Neural Networks and Transfer Learning	323
47	Efficient Aerial Images Algorithms over Multi-objects labeling and Semantic Segmentation	- 332
48	Data driven Approaches for Demand Forecasting in Supply Chain fo Business Decisions	r 341