# **2024 Sixth International Conference on Computational Intelligence and Communication Technologies (CCICT 2024)**

19-20 April 2024 Sonepat, India



IEEE Catalog Number: CFP24AT5-POD **ISBN:** 

979-8-3503-7463-6

#### **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:	CFP24AT5-POD
ISBN (Print-On-Demand):	979-8-3503-7463-6
ISBN (Online):	979-8-3503-7462-9

#### 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



# 2024 Sixth International Conference on Computational Intelligence and Communication Technologies (CCICT) **CCICT 2024**

## **Table of Contents**

Message from General Chairs	xvi
Message from Program Chairs	xvii
Organizing Committee	xviii
Program Committee	
Reviewers	
Sponsors	xxv

#### Artificial Intelligence and Machine Learning Techniques

Classification of Plant Disease Using Machine Learning Algorithms
Plant Disease Detection Using Convolutional Neural Network (CNN)       8         Manav Malik (B.M. Institute of Engineering and Technology, India),       8         Ronit Ronit (B.M. Institute of Engineering and Technology, India),       9         Hardik Rana (B.M. Institute of Engineering and Technology, India),       9         Yatu Rani (BMIET, India), and Gurminder Kaur (BMIET, India)       9
Leaf Disease Detection Using OpenCV And Deep Learning
Role of Machine Learning Algorithms in Analysis of Crop Disease Detection
A Review on Medicinal Plant Identification Through Leaf Image
Drowning Human Detection Using Deep Learning Techniques

Enhancing E-Learning: A Comprehensive Guide to Performance Metrics and Evaluation
A Review of Machine Learning and deep Learning Techniques for Saffron Adulteration Prediction System
Multimodal Sentimental Analysis For Real-Time Monitoring of Work Stress Levels
Information Quality Dimensions in Generative Conversational AI for Financial Inclusion 64 Kanchan Pranay Patil (Symbiosis Centre for Information Technology(SCIT), Symbiosis International (Deemed) University), Dhanya Pramod (Symbiosis Centre for Information Technology(SCIT), Symbiosis International (Deemed) University), and Mugdha Shailendra Kulkarni (Symbiosis Centre for Information Technology(SCIT), Symbiosis International (Deemed) University)

# Innovations in IoT and Smart Technology Applications

Comparative Analysis of Drone Detection Model Using YOLO Versions	59
Customized Vision ARM for Segregation of Packages with Smart Picking	76
<ul> <li>Detection and Classification of Potholes Using CNN</li></ul>	33
Development and Execution of an IoT-Based Accident Detection and Alert System with Location Tracking	91
IoT-Based Real-time Waste Management System with Dust Segregation & Full Bin Notifications 98	

Anupam Kumar (Sharda University, India), Quamar Ziya (Sharda University, India), and Konika Abid (Sharda University, India)

Smart Parking Management System	106
Benoit David Petit (University of Mauritius, Mauritius), Kreshen	
Pillay Amourdon (University of Mauritius, Mauritius), and Raj Kishen	
Moloo (University of Mauritius, Mauritius)	
The Survey on IoT Based kit for Smart Farming	114
Shobhit Kundu (Chandigarh University, India), Harsh Jindal (Chandigarh	
University, India), Yash Rai (Chandigarh University, India), Anil	
Tripathi (Chandigarh Group of Colleges, India), Abhinav Sehgal	
(Chandigarh Group of Colleges, India), and Harsh Sharma (Chandigarh	
University, India)	
Unlocking the Potential of IoT Technologies in the Era of Industry 4.0 Digital Economy: An	
Exploration of the Transformative Impact	120
Tarun Kumar Vashishth (IIMT University, India), Bhupendra Kumar (IIMT	
University, India), Kewal Krishan Sharma (IIMT University, India),	
Sachin Chaudhary (IIMT University, India), Rajneesh Panwar (IIMT	
University, India), and Vikas Sharma (IIMT University, India)	

# Software Engineering and Cloud Computing Frontiers

A Comparative Study on Reputation Management in Social Cloud: Validating Our Proposed Trust Architecture with Multiple Datasets Santosh Kumar (MMEC, Maharishi Markandeshwar (Deemed To Be University), India) and Sandip Kumar Goyal (MMEC, Maharishi Markandeshwar (Deemed To Be University), India)	127
A Comprehensive Study on Optimization Techniques for Microservices Deployment Aakash Nakarmi (Sharda University, India), Harshit Kesharwani (Sharda University, India), Tamoshree Mallick (Sharda University, India), Sushant Jhingran (Sharda University, India), and Gaurav Raj (Sharda University, India)	133
A Review: Cold Start Latency in Serverless Computing Parikshit Verma (Chandigarh University, India), Paurav Goel (Chandigarh University, India), and Neetu Rani (Chandigarh University, India)	141
Accuracy Enhancement of Component Based Selection Model Using Hybrid Soft Computing Anjali Banga (Guru Jambheshwar University of Science & Technology, India) and Pradeep Kumar Bhatia (Guru Jambheshwar University of Science & Technology, India)	149
Assessing the Practical Implications of Integrating Blockchain Technology into Human Resource Management in Digital Era: An Empirical Study Sanyukta Chhibber (Uttaranchal University, India), Babita Rawat (Uttaranchal University, India), Shagun Tyagi (Graphic Era Hill University, India), and Ashulekha Gupta (Graphic Era Deemed to be University, India)	157
Company Crime Tracking System with Blockchain Technology to Enhance Security, and Accountability Halimatu Sadiya Kabiru. (Sharda University, India), Aliyu Jamilu Jika (Sharda University, India), Renu Mishra (Sharda University, India), and Amrit Kumar Agrawal (Sharda University, India)	164

Enhancing Operational Efficiency through the Integration of CI/CD and DevOps in Software Deployment	3
Partha Sarathi Chatterjee (Liverpool John Moores University, UK) and Harish Kumar Mittal (B. M. Institute of Engineering and Technology, India)	
Multi-Resource Balance Virtual Machine Consolidation Based on Extreme Learning Machine and Improved Grey Wolf Optimizer	3

# The Future of Communication Technologies and Network Security

A Profound Review of Al-Driven Crime Detection in CCTV Videos	3
Crime Detection using Data Mining Techniques	)
<ul> <li>Emergency Message Prioritization and Scheduling in Vehicular Ad hoc Networks</li></ul>	;
<ul> <li>Experimental Analysis of a Multimodal Biometric System Using Pre-Processing and Feature</li> <li>Extraction Techniques and Their Impact on Analytical Results</li></ul>	2
Performance Assessment of Leach and Suggested Improvements to the M-Leach Protocol for use in Wireless Sensor Networks	)
<ul> <li>Unveiling Machine Learning Paradigms for Robust Malware Detection in Personal Data</li> <li>Security</li></ul>	5

Mitigate the Man-in-the-Middle Attack by the use of Machine Learning Techniques: A Review ..... 232

Edson Bernardo da Conceicao Mahangue (Sharda University, India), Vivek Sharma (Sharda University, India), and Keshav Gupta (Sharda University, India)

#### **Digital Transformation and Innovation**

Building a Revolutionizing Application Platform Towards Knowledge Reality	
Estimation of Corrosion of Iron Using Clustering Techniques	
Impact of Financial Technology (Fin-Tech) on the Restructuring of the Agrarian Economy: A         Comprehensive Systematic Review       249         Akhilesh Sharma (Graphic Era Deemed to be University, India; Graphic       249         Era Hill University, India), Arvind Mohan (Graphic Era Deemed to be       0         University, India), and Amar Johri (Saudi Electronic University, Saudi       Arabia)	
Media Blend – A Reading App	
Optimising Fuel Efficiency of Vehicle using Machine Learning Algorithm	
RideGuard: Empowering Rider Safety with Integrated Helmet Technology and Aid App 265 Sudhanshu Kumar (Sharda University Greater Noida, India), Himanshu Yadav (Sharda University Greater Noida, India), Ashutosh Kumar (Sharda University Greater Noida, India), and Mandeep Kaur (Sharda University Greater Noida, India)	
The Enigma of the Dark Web: A Duality of Unrestricted Liberty and Unlawfulness	
Two-Player Wizard Laser Tag-Inspired Shooting Game	

A Research Model for Automated Prediction and Analysis of Job Interview Performance 284 Phaneendra Varma Chintalapati (Shri Vishnu Engineering College for Women, India), Sita Sowmya Paluri (Shri Vishnu Engineering College for Women, India), Sai Nikhitha Sayyaparaju (Shri Vishnu Engineering College for Women, India), Satya Varsha Nanditha Toram (Shri Vishnu Engineering College for Women, India), T V L Daneswari Sureddy (Shri Vishnu Engineering College for Women, India), and P. Kiran Sree (Shri Vishnu Engineering College for Women, India)
Recurrent Neural Network Based Backstepping Controller for Genesio-Tesi Chaotic System292 Narmada A. (Lovely Professional University, India), Anuj Jain (Lovely Professional University, India), and Manoj Kumar Shukla (Symbiosis Institute of Technology, India)
AI and Deep Learning in Healthcare Predictions and Analytics
A Comprehensive Analysis of Personalized Medicine: Transforming Healthcare Privacy and Tailoring Through Interoperability Standards and Federated Learning
An Efficient Clustering Algorithm for Image Segmentation of Retinal OCT Images
A Review on Heart Disease Detection using Machine Learning Techniques
Epidermis Bruise Analysis Using Deep Learning
Machine Learning in Medical Sites and Healthcare
Comparative Analysis on Cardiac and Diabetic Disease Prediction using Machine Learning Techniques
Heart Diseases Prediction Using Machine Learning and Deep Learning Models
Role of Artificial Intelligence in the Early Detection of Thrombocytopenia: An Approach to Improve Health of Pregnant Women

### AI and ML Techniques in Business, E-Commerce and Predictive Analytics

<ul> <li>Augmented Reality in E-Commerce: Unveiling the Future of Online Shopping</li></ul>	
Unleashing the role of Artificial Intelligence on Entrepreneurship	
Unveiling Consumer Behavior Patterns: A Comprehensive Market Basket Analysis for Strategic Insights	
Can An Artificial Intelligence-Powered Humanoid Chatbot Be a Quality Service Enhancer in The Insurance Industry?	
A Bibliometric Analysis of the Use of Technology for the Marketing of Online Pharmacies 384 Kapil Ahalawat (Graphic Era Deemed to be University, India) and Rajesh Tiwari (Graphic Era Deemed to be University, India)	
A Study on Consumer Perception Towards Online Shopping in India	
<ul> <li>Fashion Forward with AI Creations Using GAN</li></ul>	

## **Specialized Techniques in AI: NLP and Sentiment Analysis**

A Comprehensive Review of Sentiment Analysis: Techniques, Datasets, Limitations, and	403
Future Scope	405
A Scrutinized Survey on the Accuracy & Availability of Sanskrit translation Models	. 410
Er. Tamanna Jain (Maharishi Markandeshwar, Ambala) and Neeraj Raheja	
(Mahirishi Markandeshwar, Ambala)	

Code-Mixed Text: An Extensive Literature Review
Detection of Spam and Fraudulent Calls Using Natural Language Processing Model
Emotional Intelligence: A Novel Method for Multi-Criteria Decision-Making with Sentiment Analysis
Language Identification and Normalization Techniques for Code-Mixed Text
<ul> <li>Machine Learning Insights: Deciphering Consumer Behavior from Twitter Trends and Tweets</li> <li>442</li> <li>Kartik Dhiman (Chandigarh University, India) and Subhi Tyagi (Chandigarh University, India)</li> </ul>
Real-time Gender and People Tracking Using YOLO
NLP Unleashed: Transforming Employment Landscapes with Dynamic Recruitment Platforms 455
Sanjay Jogi (UG Students), Sanchit Warang (UG Students), HARSH BHOR (Asst Professor), Dhruv Solanki (UG Students), and Harsh Patanwadia (UG Student)
<ul> <li>Navigating the Tourism Terrain: A Holistic Approach from Industry Dynamics to Marketing</li> <li>Strategies</li></ul>
<ul> <li>Transforming HealthCare Delivery: An Android Application Approach</li></ul>
Green Blockchain technology for Organization Performance without Risky Activities: Natural-Resource-Based View

### Special Session on Advances in Computational Science and Engineering through Data Science and Soft Computing

A Comprehensive Approach to Industry 4.0 Security: Blockchain and Dynamic Access Control Integration
AI Doctors in Healthcare: A Comparative Journey Through Diagnosis, Treatment, Care, Drug Development, and Health Analysis
Yolov7-Based Helmet Detection System for Traffic Safety
Face Classification Using Stacking Ensemble Learning       498         Aditi Arora (ABESEC, India), Indu Malik (ABESEC, India), Aanchal Gupta       498         (ABESEC, India), Bhvaya Jindal (ABESEC, India), and Gaurisha Gupta       498         (ABESEC, India)       6000000000000000000000000000000000000
Handwritten Text Recognition Using Deep Learning
Duplicate Node Detection Method for Wireless Sensors
Revolutionizing Arrhythmia Classification: Unleashing the Power of Machine Learning and Data Amplification for Precision Healthcare
inQuery- Online AI Application Formatting and Management System
Fake Profile Detection on Social Sites
Privacy-Preserving Speech Analysis- A Review

Efficacy of Customer Churn Prediction System	546
Ritik Raj (ABES Engineering College, India), Siddhant Gupta (ABES	
Engineering College, India), Ritik Mishra (ABES Engineering College,	
India), and Medha Malik (ABES Engineering College, India)	
Big Mart Sales Analysis	554
Kunal Kunal (ABES Engineering College, India), Muskaan Singh (ABES	
Engineering College, India), Harshit Sharma (ABES Engineering College,	
India), Shweta Roy (ABES Engineering College, India), and Kadambri	
Agarwal (ABES Engineering College, India)	

# Advancements in Machine Learning: Exploring Applications in Engineering and Research

Investigating Brain Tumor Detection and Classification through Various Deep Learning Approaches	
Skin Cancer Detection Using Deep Learning	
Multilingual Cross-Modal Image Synthesis with Text-Guided Generative AI	
Machine Learning Approaches in Contemporary Automatic Bug Triaging and Analysis of Research Gaps	
Chronic Kidney Disease Prediction: Optimization of Machine Learning Algorithms	
Design and Implementation of a Collaborative Task Assistance Mobile Application with Reward System	
A Login Confirmation Mechanism for Meeting Platforms with an Automatic face Acknowledgment System	
Security and Privacy in the Blockchain-Internet of Things Hybrid System for a Healthcare Database Network	

Cardiovascular Ailment Prediction Machine Learning: A new Era	624
Ajay Kumar Sahu (Greater Noida Institute of Technology, India), Vikas	
Singhal (Greater Noida Institute of Technology, India), Shivani Dubey	
(Greater Noida Institute of Technology, India), Antima Solanki	
(Greater Noida Institute of Technology, India), Shikha Kumari (Greater	
Noida Institute of Technology, India), and Mamta Mishra (Greater Noida	
Institute of Technology, India)	
Author Index	633