

2021 IEEE 9th Region 10 Humanitarian Technology Conference (R10-HTC 2021)

**Bangalore, India
30 September – 2 October 2021**



**IEEE Catalog Number: CFP2134U-POD
ISBN: 978-1-6654-3241-2**

**Copyright © 2021 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:	CFP2134U-POD
ISBN (Print-On-Demand):	978-1-6654-3241-2
ISBN (Online):	978-1-6654-3240-5
ISSN:	2374-023X

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

Title of the paper	Page No
An Unsupervised Approach for COVID-19 Detection using Chest CT Images	1
Extracting Vehicular Mobility Dynamics from Taxi Fleet Trajectories	7
Real-time Mitigation of Effects of False Data in Smart Grid : A Data Diode Approach	13
Implementing a Tollgate Queue Selector Based on Genetic Algorithm	19
A Cable Driven Parallel Robot for Nursery Farming Assistance	25
Identification of Philippine Maize Variety Using Convolutional Neural Network with Kernel Morphological Phenes Characterization	31
COVID-19 Vaccination Prediction in India Using Deep Learning	37
Severity Assessment of Potato Leaf Disease Induced by Alternaria solani Fungus Using Hybrid Decision Tree and Support Vector Machine Regr	43
Vision-based Postharvest Analysis of Musa Acuminata Using Feature-based Machine Learning and Deep Transfer Networks	49
Landmine Detection Using A Mobile Robot	55
A Covid-19 Safety Web Application to Monitor Social Distancing and Mask Detection	60
Data-driven Online Decision Support for Hotel Site Selection	66
Digital Tool for Prevention, Identification and Emergency Handling of Heart Attacks	72
CoviDefender: Digital personal guard for defending against COVID19.	78
Sentiment analysis on covid-19 vaccine using Twitter data	84
Deep learning approach for an early stage detection of Neurodevelopmental disorders	90
Design and Implementation of an Audio Fingerprinting System for the Identification of Audio Recordings	96
Indian Sign Language Translation using Deep Learning	102
Prospects and Design Assessment of a Hybrid Renewable Energy Microgrid for the Thuisa Para Indigenous Community in Bangladesh	106
Meeting Delay Requirements in Telemedicine service using SDN framework	111
Assessing visitors satisfaction about museum service quality using Kano model	116
Sentiment Analysis in Indian Sub-continent During COVID-19 Second Wave using Twitter Data	122
Impact of E-Learning System User Interface Design on User Satisfaction	128
Seed Architectural Phenes Prediction and Variety Classification of Dry Beans (Phaseolus vulgaris) Using Machine Learning Algorithms	134
FishEye: A Centroid-Based Stereo Vision Fish Tracking Using Multigene Genetic Programming	140
Low-Cost IoT Device for Chronic Medication Adherence	145
Tomato Plant Leaf Disease Detection using CNN	149
An Android Phone Based Artificial Pancreas System for Type-1 Diabetic Patients	154
Factors behind higher COVID-19 recovery and lower fatality rates in India - need for a focused study	160
Contactless IoT Doorbell for Covid-safe Household	166
Sustainable solution to address waste management and energy challenges in rural India	170
Study of an activity tracking device for rural workers through collaborative design	176
Emotion Recognition from Facial Expressions using CNN	182
Low-Cost Portable Emergency Mechanical Ventilator Proposed for Covid-19 Patients	188
Sunflower Diseases Recognition Using Computer Vision-Based Approach	193
Smart Water Distribution with Disaster Management	198
Detection of Plasmodium Falciparum Parasite Intraerythrocytic Stages using One Dimensional Distributed Bragg Reflector Biosensor	203
IoT based Water Quality Monitoring System	209
Image Analysis of Ventriculomegaly and White Matter Deterioration in Alzheimer's disease	215
Design and Analysis of a Grid-Tied Dual Rotor PMSG and SCIG-Based Wind Farms	221
Development of a Low-cost PC-based Single-channel EEG Acquisition System for Educational and Research Purpose	227
Smart Waste Segregation	233
Segmentation of Temporomandibular Condyle in MR images using Marker-Controlled Watershed and Random Walks	239
Interactive Image Projective Desktop and Screen Using Hand Tracking by Leap Motion	244
Hand Tracking in 3D Space using MediaPipe and PnP Method for Intuitive Control of Virtual Globe	250
Monocular Tracking of Human Hand on a Smart Phone Camera using MediaPipe and its Application in Robotics	256

BERT Model for Classification of Fake News using the Cloud Processing Capacity	262
Digital Agglomeration in the Improvement of the Human Development Index in Perú	268
Techno Economic Feasibility Analysis of Grid-Connected Microgrid by Using Solar PV for Residential Usage	275
Comparative Study of Thresholding Techniques for Thermographic Diagnosis of Electrical Equipment	281
Filter Paper based Micromixer using Wax Crayon as Microfluidic Channel Barriers	286
Modern Way of Learning Using Augmented Reality(AR)	292
Design and Simulation of an Autonomous Surface Vehicle for Trash Collection using ROS	297
Real-Time Slip Detection using Tactile Information	303
Smart Sustainable Mini Weather Station	308
Cluster-based Network for Improved Internet Resilience in Outland Agriculture	313
Addressing Sanitation and Health challenges in rural India through socio-technological interventions: A Case Study in Odisha	319
Brain Computer Interfacing: A method to detect pain signals in the brain of patient under operation.	325
Offline Simulation of Motion Planning of a Planar Manipulator in RoboAnalyzer and its Integration with a Physical Prototype	330
Comparative ANFIS Models for Stochastic On-road Vehicle CO2 Emission using Grid Partitioning, Subtractive, and Fuzzy C-means Clustering	336
Counting of Uneaten Floating Feed Pellets in Water Surface Images using ACF Detector and Sobel Edge Operator	342
Evaluating the Role of Energy in a Poorly Developed Rural Village: How Technology can Support Energy Services for Enhanced Quality of Life	347
Addressing the purity and purification methods of pond water in Kalinagar, West Bengal	353
Need Assessment and Design of an IoT based Healthcare Solution through Participatory Approaches for a Rural Village in Bihar, India	359
Prototype Archimedes Screw Microhydro on a River without Head	365
A Novel Real-Time False Data Detection Strategy for Smart Grid	371
Duck Eggs Hatching Procedure with A Low Cost User Convenient Integrated Device for Developing Countries	377
Classification of Faults in Power System with Probabilistic Neural Networks: An Imbalanced Learning Approach	383
Early Diagnosis and Comparative Analysis of Different Machine Learning Algorithms for Myocardial Infarction Prediction	389
ROSNNet: A WMN based Framework using UAVs and Ground Nodes for Post-Disaster Management	395
An Elegant Experimental Setup for Accurate Presentation of Dichoptic Stimuli	401
Classification of Organic and Solid Waste Using Deep Convolutional Neural Networks	407
An Efficient Authentication Scheme for Fog Computing Environment using Symmetric Cryptographic methods	413
Impact of Pedal Powered Vehicles on Average Traffic Speed in Dhaka City: A Cross-sectional Study Based on Road Class and Timestamp	419
Effect of Covid 19 over Indian Domestic Power Sector: A Comprehensive Study	425
De Novo Drug Property Prediction using Graph Convolutional Neural Network	431
Prediction of Gold Price using Deep Learning	437
Developing sustainable solution for village water supply system – A case study of Ban Xia village in Thailand	442
Profitable Ranking of Stock Market Organizations Using Different Machine Learning Models	446
Performance Evaluation of SVM with Non-Linear Kernels for EEG-based Dyslexia Detection	452
Optimization of Microgrid System for Community Electrification by using HOMER Pro	458
Performance Analysis of Machine Learning Approaches in Diabetes Prediction	463
Deep Learning Based Atrial Fibrillation Detection Using Effective Denoising Methods and Dimensionality Reduction Techniques	469
AUTOMATED SOIL MOISTURE AND NUTRIENT ANALYZER FOR MULBERRY PLANTS USING IoT	476
Workspace Analysis of Industrial Manipulators and its Effective Teaching in RoboAnalyzer	481
Evaluation of Interactive Modalities Using Preference Factor Analysis for Wheelchair Users	487
Water Scarcity: A Technical Assessment for Improved Resource Utilization in a Rural Indian Village	493
Performance Analysis of Deep Neural Networks for Tomato Leaf Disease Classification with Server-Based Computing	499
Kannada Language Based Hybrid Cryptographic Scheme for Protecting Human Rights for Privacy	505