

2023 1st International Conference on Optimization Techniques for Learning (ICOTL 2023)

**Bengaluru, India
7-8 December 2023**



**IEEE Catalog Number: CFP23QZ3-POD
ISBN: 979-8-3503-2805-9**

**Copyright © 2023 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:	CFP23QZ3-POD
ISBN (Print-On-Demand):	979-8-3503-2805-9
ISBN (Online):	979-8-3503-2804-2

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

Keynote Speeches

Representation and decomposition of functions in DAG- DNNs and structural network pruning

Dr. Wen-Liang Hwang

Healthcare and machine learning - a symbiotic relationship

Dr. Sanghamitra Bandyopadhyay

Sustainable Artificial Intelligence

Dr. Robert Kozma

Invited Papers

Epidemiological Image Analysis: Insights, Perspectives, and Challenges.....1

Tatyana Ivanovska, Markus Kruger, Amro Daboul

Analysis of Economic Data Using Optimization of Bending Energy of the Statistical Shape.....6

Yukari Shirota

THE USE OF AI AND ITS LEGAL BOUNDARIES IN THE EU.....11

Peter Burgstaller

Music and Emotions - A tool to create new playlists for a musical listening device in seclusion rooms in psychiatric hospitals.....17

Cédric Bornand, Angelika Güsewell, Emilie Bovet, Gilles Bangertter, Alexia Stantzios, Goutam Chakraborty

Technical Papers

Critical Factors in Doubling Revenue for Soccer Teams.....22

Seiji Matsushashi, Yukari Shirota

On Analysis of Swin UNETR: a Robust Architecture for Medical Image Segmentation..... 27

Maximilian Schlosse, Stephan Prettner, Tatyana Ivanovska

Binary Search Sort Algorithm -Yet Another Sorting Algorithm with Binary Search having $O(n \log n)$ and $O(n)$ time complexity.....33

Pinnamaraju Chaitanya

Bench Marking Tensor-based Imputation Techniques on Astronomical Imagery Data.....39

RAGE Uday Kiran, EDULA Raashika, OHTAKE Makiko, YOSHIKO Ogawa

Analysis and Comparison of the DNA Sequence of an Unknown Respiratory Virus with Influenza and Corona Using Biopython.....45

Reddhi Das, Monjur Morshed, November Tuesday, Afroz Mehejabin Anisa and MD Nazmul Hasan

Development of Augmented Reality-Based iOS Applications Using the ARKit Framework as an Interactive Tool in 2D Media.....	51
<i>Zidan Ramadhan, Riri Fitri Sari</i>	
Rough inference system for automated failure prediction in cooling devices.....	57
<i>Zbigniew Kokosiński, Piotr Szydlowski</i>	
Identifying the credit risk of listed company located in the guaranteed network.....	62
<i>Yalin Chen, Guangrui Zhao, Qijie Li, Jianzhen Chen, Kang Xu, Wenyu Dai, Mengyuan Zhu, Yaqing Mou</i>	
BERT-Driven Deep Learning Approach for Depression Detection in Social Media Posts.....	70
<i>Prashant Karna, Sonu Kumar Keshari, Ashis Kumar Mandal and Basabi Chakraborty</i>	
Influence of Contextual Information on Bengali-English Forward and Backward Transliteration Using Binary Coding.....	76
<i>Md. Fahad, Amrita Das Tipu2, Ashis Kumar Mandal and Basabi Chakraborty</i>	
Effectiveness of Automatic Caption Generation Method for Video in Japanese.....	82
<i>Masafumi Matsuhara, Jin Tsushima</i>	
AI-based Prognostic Analysis of NOx Emission from Industrial Diesel Engine for Feedback Control System.....	87
<i>Deepanraj Balakrishnan, Prabhakar Sharma, Feroz Shaik, Anantha Raman Lakshmi pathi</i>	
A STUDY IN ANALYSING THE FACTORS INFLUENCING JOB SATISFACTION THROUGH SUPERVISED MACHINE LEARNING METHODS.....	92
<i>Chandra Mouli Venkata Srinivas, Sphurti Birajdar, Prakash Bethapudi, K. Soujanya, L. Chandra Sekhar Reddy, M Anusuya</i>	
EFFECTIVE CONTACT TRACING OF COVID PATIENTS USING MACHINE LEARNING TECHNIQUE.....	99
<i>Netha Sri Dattha Tumati, Vuppu Shankar, B. Hanumanthu</i>	
Enhancing Tulsi Leaf Disease with CNN and SVM-Based Classification.....	106
<i>Deepak Banerjee, Vinay Kukreja, Ayushi Jain, Devyani Rawat, Vishal Jain</i>	
CHATBOT BASED ON EMOTIONSUSINGDEEPLARNING.....	111
<i>Nirupa V, Renuka G B, Naga Lakshmi B, Sumanth Kumar C P</i>	
Numerical Solutions of Stochastic Dynamics using Convolutional Neural Network Methods.....	116
<i>E. Sophiya, Deependra K. Singh, Soumyendra Singh</i>	
Prediction of heart disease using machine learning and hybrid methods.....	122
<i>D Venkatesh, T Saravanan, D Raghavaraju, M Vijaya Bhaskar, S Vasundra</i>	
Enhancing Human Action Recognition through advanced Motion Descriptors and Machine Learning.....	128
<i>Vijay Ramalingam, Dr D Saravanan, S. Vignesh, Rahin Batcha R</i>	
LEVERAGING DENSENET AND GENETIC ALGORITHMS FOR LUNG CANCER SEVERITY CLASSIFICATION.....	134
<i>Ts. Arthi, S. Premkumar, S. Sivakumar, N. Partheeban</i>	

Leveraging Network Vulnerability Detection using Improved Import Vector Machine and Cuckoo Search based Grey Wolf Optimizer.....	140
<i>Dr. P. Preethi, Vasudevan I, Saravanan S, Krishna Prakash R, Devendhiran A</i>	
Intrusion Detection using HRO with Ensemble Learning Models and Comparison.....	147
<i>Bhasha Pydala, Noti Pandu Ranga Reddy, C. Rama Mohan, E. Sandhya, V. Jyothsna, K. Khaja Baseer</i>	
INTRUSION DETECTION SYSTEM FOR IOT NETWORKS.....	152
<i>V. Jyothsna, E. Sandhya, R. Roopa, B. Deena Divya Nayomi, D. K. Shareef, P. Bhasha</i>	
DEEP LEARNING MODEL FOR INTRUSION DETECTION IN SDN NETWORKS.....	158
<i>V. Jyothsna, E. Sandhya, Thammisetty Swetha, P. Lokesh Kumar Reddy, B. Jyothsna, P. Bhasha</i>	
Code word Based Bi-Server Authentication and Key Exchange Encryption Technique.....	164
<i>Mr. T. Thangarasan, Dr. G. Arunkumar, Ms. Keerthana R, Mr. V. Karthikeyan, Dr. Arul Prakash A, Ms. Kamsala Gouthami</i>	
A Novel Graph Clustering Algorithm with Enhanced Security using Power Method and Homomorphic Encryption.....	170
<i>Dr D Jayalatchumy, Dr G ArunKumar, Dr D Saravanan</i>	
CUSTOMIZED CREATION OF ERC 20 STANDARD CRYPTOCURRENCY ON THE ETHEREUM NETWORK.....	176
<i>Rahin Batcha R, S. Vignesh, Dr Subathra, Dr D Saravanan, Dr G ArunKumar</i>	
DESIGN AND DEVELOPMENT OF A LOW-COST COMMUNICATION-BASED PROTECTION SYSTEM FOR FISHERMEN.....	182
<i>S. Sivakumar, Ts. Arthi, S. Premkumar, B. Thillaieaswaran</i>	
VOICE BASED ASSISTANCE ABOUT SURROUNDINGS OF BLIND AND VISUALLY IMPAIRED PEOPLE.....	189
<i>Nishikanth Annamaneni, Vuppu Shankar, B. Hanumanthu</i>	
Byte Segmented Convolutional Neural Network for Network Traffic Classification.....	193
<i>Blessa Binolin Pepsi M, Aruna M, Deepika J, Soundharya Gomathi S</i>	
IoT-driven automatic vehicle accident rescue system implemented with Proteus.....	199
<i>Dr. K. Hemalatha, Dr. S.V.S Ganga Devi, V Deepika</i>	
Privacy enhanced framework using edge-driven approach over internet of things.....	205
<i>V. Ramachandran, P. Rajaram, Rajasekar Rangasamy, M. Divyapushpalakshmi, V. Balaji, T. Saravanan</i>	
Arduino Uno- Powered Parking Guidance System with Ultrasonic Sensors.....	211
<i>Dr Subathra, Dr Arul Prakash A, Vijay Ramalingam, S. Vignesh</i>	
Wireless IoT Gas and Smoke Detection System with ESP8266 and Blynk Integration.....	217
<i>Dr Arul Prakash A, Dr Subathra, Rahin Batcha R, Vijay Ramalingam, Dr G ArunKumar</i>	
Unlocking The Power Of Deep Learning: A Guide To Automatic License Number Recognition.....	223
<i>Hemalatha D, Almas Begum, S Alex David; Gaddam Rishitha, Pothanaboyina Dimple Praharsha, Chundi Nandini</i>	

Advancements in Optimization Algorithms for Lung Nodule Detection and Classification: A Review.....	229
<i>M.Kiran Kumar</i>	
A Hybrid CNN-SVM-Deep Learning Approach for Multi-Level Downy Mildew Disease Recognition in Spinach Leaves.....	235
<i>Ankita Suryavanshi, Ayush Dogra, Lisa Gopa</i>	
A Novel Approach to Identify Diabetic Macular Edema Using a Minimal CNN Model.....	241
<i>Ebin PM, Athira B Kaimal, d U Ananthanagu, Annie Sujith, Shanthala P T, Deepti C</i>	
Detection and Classification of Retinal Disorders using Deep Learning Techniques.....	247
<i>K. Sathish, Dr. B. Kirubagari, Dr. J. Jegan</i>	
Deep Learning based Bone Fracture Prediction using Convolutional Neural Networks: A Comparative Study of Transfer Learning and Fine-tuning Techniques.....	252
<i>Sriram R, O R Arun</i>	
Autism Spectrum Disorder Prediction Using Linear Discriminant Analysis.....	258
<i>Dr. P. RAJESH, Dr. C . KOTEESWARAN, Mr. P. NANDAKUMAR</i>	
A Review on Deep Learning Algorithms for Sleep Quality Monitoring in Osteoporosis Patients.....	265
<i>Banupriya N, Keran Sanjay, Keerthana M, Keran Sanjay B S, Kavin Kumar P</i>	
Predicting Glaucoma Severity Levels in Human Eyes: Integrating CNN and Random Forest for accurate classification.....	270
<i>Ankita Suryavanshi, Vinay Kukreja, Ayush Dogra, Abhishek Bhattacharjee, Tejinder Pal Singh Brar</i>	
Brain Tumor Diagnosis with MCNN-Based MRI Image Analysis.....	276
<i>R Nidhya, G Smilarubavathy, R Kalpana, S M Keerthana</i>	
SDGs Gender Equality Analysis in India by using SHAP Interpretation.....	281
<i>Sreekanth Bonthala, Yukari Shirota, Basabi Chakraborty</i>	
AN EMPIRICAL STUDY MEASURING THE PERFORMANCE RATINGS AND EVALUATING GENDER BASED SATISFACTION LEVEL.....	287
<i>Dr Sremmant Basu, Dr Ashpin Pabi D J,</i>	
Reduction of dimensions of Customer Satisfaction in Food Delivery Apps using Confirmatory Factor Analysis.....	292
<i>Dr. D. Pradeep Kumar, Mr. B. Sreekanth, Dr. S. Mohana, Mr. Hemaraj</i>	
Gesture-Controlled virtual mouse using Media Pipe.....	298
<i>K.Sathish, G B Renuka, Meenuga Balachandra, B Naga Lakshmi, T Sathish, P. Narasimhulu</i>	
Dehazing of Satellite Images using Improved Dark Channel Prior Method based on Retinex Theory.....	304
<i>Kalaiyarasi. M, N Venkata Sireesha, G. Irin Loretta, D S Naga Malleswara Rao, S. Saravanan, K. Vijaya Bhaskar Reddy</i>	
THE STUDY OF TEXT COMPRESSION ALGORITHMS AND THEIR EFFICIENCIES UNDER DIFFERENT TYPES OF FILES.....	308
<i>Nithya P, M Sathya, T Vengattaraman</i>	

Smart System for Vehicle Number Plate Recognition Using Convolutional Neural Network(CNN).....	316
<i>R Nidhya, R Sudhakar, R Kalpana, M Maranco</i>	