

2022 22nd International Conference on Advances in ICT for Emerging Regions (ICTer 2022)

**Colombo, Sri Lanka
30 November – 1 December 2022**



**IEEE Catalog Number: CFP2286L-POD
ISBN: 979-8-3503-4614-5**

**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:	CFP2286L-POD
ISBN (Print-On-Demand):	979-8-3503-4614-5
ISBN (Online):	979-8-3503-4613-8
ISSN:	2377-6854

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

A Stylometric Approach for Reliable News Detection Using Machine Learning Methods	1
<i>A. D. L. Abeynayake, A. A. Sunethra, K. A. D. Deshani</i>	
An Ensemble Methods Based Machine Learning Approach for Rice Plant Disease Diagnosing.....	7
<i>G. K. V. L. Udayananda, P. P. N. V. Kumara</i>	
Employing Super Resolution to Improve Low-Quality Deepfake Detection	13
<i>Anjana Samindra Perera, Ajantha S. Atukorale, Prabhash Kumarasinghe</i>	
Identification of Previously Unseen Asian Elephants Using Visual Data and Semi-Supervised Learning	19
<i>Gagana Weerasinghe, Kasun Karunanayaka, Prabhash Kumarasinghe, Dushani Perera, Carlos Trenado, Kasun De Zoysa, Chamath Keppitiyagama</i>	
Show and Listen: Generating Music Based on Images Using Machine Learning.....	25
<i>Nirmal Mendis, Ravimal Bandara</i>	
Deep Learning Based Hand-Drawn Molecular Structure Recognition and 3D Visualization Using Augmented Reality	31
<i>Jayampathi Adhikari, Malith Aththanayake, Charith Kularathna, Adeesha Wijayasiri, Aravinda Munasinghe</i>	
A Hybrid Approach for Detection of Fake News in Sinhala Text.....	39
<i>Lalinda Udurawana, Ruvan Weerasinghe, Randil Pushpananda</i>	
Improving Sinhala Hate Speech Detection Using Deep Learning.....	45
<i>Kavishka Gamage, Viraj Welgama, Ruvan Weerasinghe</i>	
Context Aware Back-Transliteration from English to Sinhala.....	51
<i>Rushan Nanayakkara, Thilini Nadungodage, Randil Pushpananda</i>	
Tamil Author Identification Using Convolutional Neural Network	57
<i>A. Archchitha, E. Y. A. Charles</i>	
Building NLP Tools to Process Sinhala Text Data Written Using English Letters	63
<i>W. S. A. Kurera, R. K. Rajapaksha, H. A. P. Rupasinghe, K. L. D. U. B. Liyanage, Sanvitha Kasthuriarachchi, Samantha Rajapakshe</i>	
Bandwidth-Based Heavily Loaded Lightpath Protection for IP/MPLS-Over-Optical Networks	69
<i>K. Ratnam, K. M. A. S. Kulathunga, L. T. R. J. Prabodhana, P. M. M. N. Pathiraja, Y. M. T. L. Yapa</i>	
A Deep Learning Approach to Predict Health Status Using Microbiome Profiling	75
<i>D. N. Wickramaratne, C. R. Wijesinghe, A. R. Weerasinghe</i>	
Generating REST APIs Using Meta-Design Paradigm for Rapid Development of Micro-Service Architecture Based Applications	80
<i>P. G. Waruna Lasantha, Samantha Rajapaksha, Athula Ginige</i>	
Categorizing the IPv4 Address Space Based on Services Running on IPs	86
<i>Sahan Kalutarage, Kasun De Zoysa</i>	

A Generation of Dataset Towards an Anomaly-Based Intrusion Detection System to Detect Denial of Sleep Attacks in Internet of Things (IoT).....	92
<i>Ishara Dissanayake, Hesiri Dhammika Weerasinghe, Anuradhi Welhenge</i>	
Towards Improving Early Learning Capabilities of Students Through a Gamified Learning Tool.....	98
<i>T. M. H. S. M. Pooliyadda, S. C. P. Peiris, A. D. N. Kurukulasuriya, E. Hettiarachchi, K. P. Hewagamage</i>	
An Augmented Reality-Based Fashion Design Interface with Artistic Contents Generated Using Deep Generative Models.....	104
<i>Asangika Sandamini, Chamodi Jayathilaka, Thisara Pannala, Kasun Karunanayaka, Prabhash Kumarasinghe, Dushani Perera</i>	
Comprehensive Technology Readiness Adoption Model: A Combined Approach to Assessing Cloud Technology in Higher Education in Nigeria.....	110
<i>Yasir Bashir Kankia, Xianhui Che, Wei Ji, Barry Ip</i>	
Identification of Road Surface Anomalies Using Crowdsourced Smartphone Sensor Data.....	118
<i>Y. T. Gamage, T. A. I. Thotawaththa, A. Wijayasiri</i>	
Automated Vehicle Insurance Claims Processing Using Computer Vision, Natural Language Processing.....	124
<i>Nisaja Fernando, Abimani Kumarage, Vithyashagar Thiyaganathan, Radesh Hillary, Lakmini Abeywardhana</i>	
Hastha: Online Learning Platform for Hearing Impaired.....	130
<i>Danula Wanasinghe, Chamathka Maddugoda, Hasini Ramawickrama, Tharindu Munasinghe, Lakmini Abeywardhana, Yashas Mallowarachchi</i>	
Smart Driver Assistance for Traffic Sign, Pothole, Vehicle Malfunction, and Accident Detection.....	136
<i>Warna Vithanage, Hasanka Madushan, Tharinda Madushanka, Tharushi Lokuliyana, Janaka Wijekoon, Sanjeevi Chandrasiri</i>	
A Dynamic Factor Approach to Forecasting the Index of Industrial Production of Sri Lanka.....	142
<i>Saumya Karunadhika, Rajith Munasinghe, Gayan Dharmarathne</i>	
Analyzing the Evolution of Source Code to Predict Vulnerabilities.....	148
<i>Kalana Ranasinghe, Chamath Keppitiyagama</i>	
Supervising Plant Growth in a Greenhouse.....	154
<i>D. L. Alexander, G. A. G. Hathnapitiya, Aruna I. Gamage, P. M. P. C Bandara, G. W. M. N. U. I. B Giragama, N. H. P. Ravi Supunya Swamakantha</i>	
tAssessee: Automatically Assessing Quality of Tea Leaves Using Image Processing Techniques.....	160
<i>Jeyasakthi Sivalingam, L. N Sivachandrabose, Mathura Loganathan, Janany Sivakumaran, Rrubaa Panchendrarajan</i>	
Sinhala Hate Speech Detection in Social Media Using Machine Learning and Deep Learning.....	166
<i>W. S. S. Fernando, Ruvan Weerasinghe, E. R. A. D. Bandara</i>	
Graph Neural Network Based Alzheimer’s Disease Classification Using Structural Brain Network.....	172
<i>S. Subaramya, T. Kokul, R. Nagulan, U. A. J. Pinidiyaarachchi</i>	
An Analysis on Different Distance Measures in KNN with PCA for Android Malware Detection.....	178
<i>Sayuru Dissanayake, Sankha Gunathunga, Dimalka Jayanetti, Kavindu Perera, Chethana Liyanapathirana, Lakmal Rupasinghe</i>	

Aspect-Based Sentiment Analysis on Mobile Application Reviews 183
Sadeep Gunathilaka, Nisansa De Silva

Author Index