

2021 IEEE International Conference on Intelligent Systems, Smart and Green Technologies (ICISSGT 2021)

**Visakhapatnam, India
13 – 14 November 2021**



**IEEE Catalog Number: CFP21Z92-POD
ISBN: 978-1-6654-4726-3**

**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:	CFP21Z92-POD
ISBN (Print-On-Demand):	978-1-6654-4726-3
ISBN (Online):	978-1-6654-0416-7

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

2021 IEEE International Conference on Intelligent Systems, Smart and Green Technologies (ICISSGT) **ICISSGT 2021**

Table of Contents

Message from the General Chairs	xi
Message from the Program Committee	xii
Organizing Committee	xiii
Keynote Address	xv
Invited Talks	xvii
Reviewers	xxi
Sponsors	xxiii

Session 1

Chair: C.V.K. Bhanu

Assessing the Energy Consumption of Different Communication Technologies in IoT using CupCarbon Simulator	1
<i>Manikanta Manohar Pattisapu (Raghu Engineering College, India) and Venkata Divakara Rao Dusi (Raghu Engineering College, India)</i>	
Fuzzy Methodologies for Forecasting Usage and Wet-Bulb Data Variables	6
<i>Avatharam Ganivada (University of Hyderabad)</i>	
An Intelligent System Design and Analysis for Transient Stability Assessment using Four Sample Input Feature Vector Approach	11
<i>Sreenadh Batchu (NIT Andhrapradesh, India), Raghuvamsi Yarlagadda (NIT Andhrapradesh, India), and Kiran Teeparthi (NIT Andhrapradesh, India)</i>	
A Novel Approach to Recommend Products in E-Commerce	17
<i>Sandeep Kone (Sasi Institute of Tech. & Engg., India), Sk Meenaz Farheen (Sasi Institute of Tech. & Engg., India), B. Lokesh (Sasi Institute of Tech. & Engg., India), and T. Sai Pavani (Sasi Institute of Tech. & Engg., India)</i>	
Leaf Disease Identification: Enhanced Cotton Leaf Disease Identification using Deep CNN Models	22
<i>P Sivakumar (Sasi Institute of Technology & Engineering, India), N. Sri Ram Mohan (Sasi Institute of Technology & Engineering, India), P. Kaoya (Sasi Institute of Technology & Engineering, India), and P. Vinay Sai Teja (Sasi Institute of Technology & Engineering, India)</i>	

Session 2

Chair: P.S.R. Chowdary

A Secure and Compact Multimodal Biometric Authentication Scheme using Deep Hashing	27
<i>P. Sivakumar (Sasi Institute of Technology & Engineering, India), B. Ruthu Rathnam (Sasi Institute of Technology & Engineering, India), S. Divakar (Sasi Institute of Technology & Engineering, India), M. Anil Teja (Sasi Institute of Technology & Engineering, India), and R. Rajendra Prasad (Sasi Institute of Technology & Engineering, India)</i>	
Smart Monitoring and Water Quality Management in Aquaculture using IOT and ML	32
<i>P. KiranKumar (Sasi Institute of Technology and Engineering, India), G. Keertana (Sasi Institute of Technology and Engineering, India), S.U. Abhinash Sivarao (Sasi Institute of Technology and Engineering, India), B. Vijaykumar (Sasi Institute of Technology and Engineering, India), and Sh. Chetan Shah (Sasi Institute of Technology and Engineering, India)</i>	
Blood Bank Clustering: Improving Performance of Clustering using Entropy Weighted K-Means	37
<i>M. Satya Srinivas (Sasi Institute of Technology and Engineering, India), P. Vijaya Lakshmi (Sasi Institute of Technology and Engineering, India), V. Kalyan Durga Shyam Kumar (Sasi Institute of Technology and Engineering, India), and V. Siva Sai Balaji (Sasi Institute of Technology and Engineering, India)</i>	
Prediction of Corona Virus Outbreak using Machine Learning	42
<i>PCS. Nagendra Setty (Sasi Institute of Technology and Engineering, India), V. Thabitha (Sasi Institute of Technology and Engineering, India), P. Prem Sree Prasad (Sasi Institute of Technology and Engineering, India), G. Bhavani Swathi (Sasi Institute of Technology and Engineering, India), and S. Sameer Ahamed (Sasi Institute of Technology and Engineering, India)</i>	
Disease Prediction: Smart Disease Prediction System using Random Forest Algorithm	48
<i>Swarupa A.N.V.K (Sasi Institute of Technology and Engineering, India), Hema Sree V. (Sasi Institute of Technology and Engineering, India), Nookambika S. (Sasi Institute of Technology and Engineering, India), Kiran Sai Kishore Y. (Sasi Institute of Technology and Engineering, India), and Ravi Teja U. (Sasi Institute of Technology and Engineering, India)</i>	
Design Optimization of Quad-Pole Electromagnetic Ejection Device using Particle Swarm Optimization	52
<i>Manohar Kintali (GITAM deemed to University, India) and Srichandan Kondamudi (GITAM deemed to University, India)</i>	

Session 3: Special Session on IoT, Data Science and Smart Computing Systems

Chair: P.A. Harshavardhini

An Effective Colour Image Retrieval with Fusion Based CNN Frameworks	57
<i>Koteswaramma Nelapati (JNTUA, India) and Murali Mohan Babu Y (SITAMS, India)</i>	

Design and Implementation of Internet of Things Based Spybot	63
<i>Navya Ananthula (Vignan Institute of Technology and Science, India)</i> <i>and P A Harsha Vardhini (Vignan Institute of Technology and Science, India)</i>	
Monitoring Cardiac Output using Impedance Cardiography: A Technical Review	68
<i>Priya Darshini Kumari (National Institute of Technology Meghalaya, India), Ksh Milan Singh (National Institute of Technology Meghalaya, India), Zefree Lazarus Mayaluri (C V Raman Global University Bhubaneswar, India), and Sujeevan Kumar Agir (Jayaprakash Narayan College of Engineering, India)</i>	
Enhancement in Manufacturing Systems using Grey-Fuzzy and LK-SVM Approach	72
<i>TP Latchoumi (SRM Institute of Science and Technology, Ramapuram campus), G. Kalusuraman (Kalasalingam Academy of Research and Education), J. Faritha Banu (SRM Institute of Science and Technology, Ramapuram campus), T.L. Yookesh (VFSTR (Deemed to be University)), TP Ezhilarasi (Saveetha University), and K. Balamurugan (VFSTR (Deemed to be University))</i>	
Embedded System Based Anytime Medicine Vending Machine	79
<i>Anil Kumar D B (Reva University, India), Doddabasappa N. (Reva University, India), Mohammed Muhiudin (Reva University, India), Ananda M H (Reva University, India), Manish R K (Reva University, India), and Vamshi Krishana (Reva University, India)</i>	
A Bluetooth Based Intercommunicative Product for Spotting Medicine in Pharmacies	83
<i>Sujo Oommen (REVA University, India), Akhil B H (REVA University, India), Akash V T (REVA University, India), Deeraj S (REVA University, India), and Aman Irshad (REVA University, India)</i>	
An Empirical Network-on-Chip Topology Design for Multicore Architectures	87
<i>Sanskruiti Dongre (Dept. Computer Engineering and IT College of Engineering Pune (COEP), India) and Amit Joshi (Dept. Computer Engineering and IT College of Engineering Pune (COEP), India)</i>	
Hybrid Regression Model for Medical Insurance Cost Prediction and Recommendation	93
<i>N Venkata Sailaja (VNR Vignana Jyothi Institute of Engineering and Technology, India), Mounika Karakavalasa (VNR Vignana Jyothi Institute of Engineering and Technology, India), Meera Katkam (VNR Vignana Jyothi Institute of Engineering and Technology, India), Devipriya M (VNR Vignana Jyothi Institute of Engineering and Technology, India), Sreeja M (VNR Vignana Jyothi Institute of Engineering and Technology, India), and D.N. Vasundhara (VNR Vignana Jyothi Institute of Engineering and Technology, India)</i>	

Session 4

Chair: G. Sree Lakshmi

An Outcome-Based Method for Computing Happiness Index from Mental Health Related Tweets of Twitter users	99
<i>Sudha Tushara Sadasivuni (Georgia State University, USA) and Yanqing Zhang (Georgia State University, USA)</i>	

Hybrid Compression Method for Hyper Spectral Images using 3-Way SVD Tensor Decomposition and Discrete Wavelet Transform	103
<i>Sucharitha Boda (Electronics and Communication Engineering, Jawaharlal Nehru Technological University Hyderabad, India) and K. Anitha Sheela (Electronics and Communication Engineering, Jawaharlal Nehru Technological University Hyderabad, India)</i>	
Methodology: Automatic Database Index Tuning using Machine Learning	109
<i>Mounicasri Valavala (University of the Cumberland, USA) and Wasim Alhamdani (University of the Cumberland, USA)</i>	
A Survey on the Security Vulnerabilities of IoT Smart Home Application	114
<i>Vasumathi Chalasani (University of the Cumberland, United States) and Wasim Alhamdani (University of the Cumberland, United States)</i>	

Session 5

Chair: V. Sandeep

Technical and Economic Feasibility of a Fully Solar-Powered Airport in Nepal	122
<i>Ashish Sedai (Chandigarh University, India), Gurmeet Singh (Chandigarh University, India), Rabin Dhakal (Texas Tech University, USA), Aamod Khatiwada (Vortex Energy Solution, Nepal), Kshitiz Khanal (Vortex Energy Solution, Nepal), Binod Kumal (Vortex Energy Solution, Nepal), Subash Gautam (Vortex Energy Solution, Nepal), and Anjay Kumar Mishra (Madan Bhandari Memorial Academy Nepal, Nepal)</i>	
Technical and Economic Analysis of Site Implementations of Gravitational Water Vortex Power Plant	128
<i>Ashish Sedai (Chandigarh University, India), Gurmeet Singh (Chandigarh University, India), Rabin Dhakal (Texas Tech University, USA), Binod Babu Kumal (Vortex Energy Solution, Nepal), Niskarsha Ghimire (Vortex Energy Solution, Nepal), and Bharosh Kumar Yadav (Tribhuvan university, Nepal)</i>	
Renewable Energy Forecasting for Energy Storage Sizing : A Review	134
<i>Anita Seervi (Centre for Energy and Environment, MNIT, India), Vikash Kumar Saini (Centre for Energy and Environment, MNIT, India), Rajesh Kumar (MNIT, India), and M. A. Mahmud (Deakin University, Australia)</i>	
A Simulation Model of the Impact of Solar Panel Dust Cover on them Performance	140
<i>G. Sree Lakshmi (CVR College of Engineering, India), Olena Rubanenko (Systems Vinnytsia National Technical University, Ukraine), Dmytro Danylchenk (National Technical University, Kharkiv Polytechnic Institute, Ukraine), and Andrii Potryvai (National Technical University, Kharkiv Polytechnic Institute, Ukraine)</i>	
Design of Grid Independent EV Charging Station	144
<i>Saranya Palakurthi (Gayatri Vidya Parishad College of Engineering for Women Visakhapatnam, India), Sai Madhulikha Kethagani (Gayatri Vidya Parishad College of Engineering for Women Visakhapatnam, India), Yamini Chunduri (Gayatri Vidya Parishad College of Engineering for Women Visakhapatnam, India), Taruni Sri Pendurthi (Gayatri Vidya Parishad College of Engineering for Women Visakhapatnam, India), and Hema Chander Allamsetty (National Institute of Technology Puducherry, India)</i>	

Analysis of THD for Multilevel Inverters with Novel Pulse Width Modulation Techniques	150
<i>Lokeshwar Reddy Ch (CVR College of Engineering, India) and Sree Lakshmi Gundebommu (CVR College of Engineering, India)</i>	
A Unipolar Phase Disposition Pulse Width Modulation Technique for an Asymmetrical Multilevel Inverter Topology	156
<i>Bharath Kumar Kasoju (Mahatma Gandhi Institute of Technology, India), Bhanuchandar A (National Institute of Technology Warangal, India), Bandela Supriya (CBIT(A), India), Dongari Vamshy (Mahatma Gandhi Institute of Technology, India), Kowstubha Palle (CBIT(A), India), and Rajakumar Sakile (National Institute of Technology Jamshedpur, India)</i>	

Session 6

Chair: D.V.S.S. Siva Sarma

Analysis of SAR for Human Head with Transparent Single Shields using TLM	162
<i>Sai Spandana Pudipeddi (GITAM Deemed to be University, India), Jayasree P.V.Y. (GITAM Deemed to be University, India), and Harshini Ganti (GITAM Deemed to be University, India)</i>	
An Accurate and Fast Computational Python Based Module for Linear Regression Analysis in Data Science Applications	167
<i>Vikram Koti Mourya Vangara (Central University of Karnataka, India), Sandeep Vuddanti (National Institute of Technology Andhra Pradesh, India), and Bhaskar Kakani (BITSILICA Pvt. Ltd., India)</i>	
An Analytical Study on Challenges and Road map to Autonomous Vehicles in Indian Context	171
<i>Sandeep V. (National Institute of Technology, India), Bhardwaj Sai (Central University of Karnataka, India), and Kushagra Kapoor (Bharati Vidhyapeeth's College of Engineering, India)</i>	
A Review on Sign Language Recognition (SLR) System: ML and DL for SLR	177
<i>Soumen Das (NIT Silchar, India), Saroj Kr. Biswas (NIT Silchar, India), Manomita Chakraborty (VIT-AP University, India), and Biswajit Purkayastha (NIT Silchar, India)</i>	
Analysis of Machine Code using Natural Language Processing	183
<i>Naman Khurpia (Tata Consultancy Services, India)</i>	
Double E Shaped Slotted Reconfigurable Square Patch Antenna for X-Band Wireless Applications	188
<i>Bharath Kumar Kammara (CMR Technical Campus, India), Sravanthi M. (CMR Technical Campus, India), and Srinivasa Nookala (Osmaniya University, India)</i>	

Session 7

Chair: N. Sreenivasa Rao

Health and Disease Prognosis System using Machine Learning	192
<i>Shafrin S (Sri Ramakrishna Engineering college, India), Sowmiya S (Sri Ramakrishna Engineering college, India), Varsha S (Sri Ramakrishna Engineering college, India), and Anuradha Radhakrishnan (Sri Ramakrishna Engineering college, India)</i>	

An Analytical Study on Machine Learning Approaches for Simulation-Based Verification	197
<i>Rajesh Koti Mourya Vangara (Central University of Karnataka, India), Bhaskar Kakani (BITSILICA Pvt. Ltd., India), and Sandeep Vuddanti (National Institute of Technology Andhra Pradesh, India)</i>	
Smart Voting System using Face Detection and Recognition Algorithms	202
<i>M. Kandan (Aditya Engineering College, India), Koppula Durga Devi (Sasi Institute of Tech. & Engg, India), Kasani Durga Navya Sri (Sasi Institute of Tech. & Engg, India), Nunna Ramya (Sasi Institute of Tech. & Engg, India), and Nunna Krishna Vamsi (Sasi Institute of Tech. & Engg, India)</i>	
Implementation of Crop Yield Forecasting System Based on Climatic and Agricultural Parameters	207
<i>M. Kandan (Aditya Engineering College, India), Garapati Sravani Niharika (Sasi Institute of Tech. & Engg, India), Mallula Jhansi Lakshmi (Sasi Institute of Tech. & Engg, India), Kallakuri Manikanta (Sasi Institute of Tech. & Engg, India), and Korlepara Bhavith (Sasi Institute of Tech. & Engg, India)</i>	
Author Index	213