2022 International Conference on Emerging Techniques in **Computational Intelligence (ICETCI 2022)**

Hyf ercbad, India 25-27 August 2022



IEEE Catalog Number: CFP22Z80-POD **ISBN:**

978-1-6654-7942-4

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:	CFP22Z80-POD
ISBN (Print-On-Demand):	978-1-6654-7942-4
ISBN (Online):	978-1-6654-7941-7

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



Friday, August 26

Friday, August 26 2:45 - 4:00

Session 1: Deep Learning & Computer Vision - 1

Chair: Arya Kumar Bhattacharya (Mahindra University, India)

Crop Type and Stress Detection Using Transfer Learning with MobileNet...1

Penmetsa Anurag Varma and Hitendra T Sarma (Vasavi College of Engineering, India)

3-Dimensional Object Recognition Using 1-Dimensional Capsule Neural Networks...5

Amlan Basu and Keerati Kaewrak (University of Strathclyde, United Kingdom (Great Britain)); Lykourgos Petropoulakis (Senior Knowledge Exchange Fellow, United Kingdom (Great Britain)); Gaetano Di Caterina and John J Soraghan (University of Strathclyde, United Kingdom (Great Britain))

Deep Learning Based 3D Object Detection with Time-Of-Flight...13

Daisy Monica Roy (National Institute of Technology Calicut & Analog Devices India Private Limited, India); Shihabudheen KV (NIT Calicut, India); Santosh Singh (Senior Engineer, Analog Devices India Private Limited, India); Aravind Navada (Engineering Director, Analog Devices India Private Limited, India)

3D-D2D: An Efficient Hybrid Model for Hyperspectral Image Classification...21

Sohan Kundaranahalli Ramesh (India); Satish Kumar Singh (Netaji Subhas University of Technology & New Delhi, India)

Complex Valued, Multi-Layer Hopfield Neural Network...26

Garimella Ramamurthy (Mahindra University, India); Tata Jagannadha Swamy (Gokaraju Rangaraju Institute of Engineering and Technology Hyderabad, India)

Session 2: General Topics in Computational Intelligence - 1

Chair: Atul Negi (University of Hyderabad, India)

- ICT- Assisted Growth Management System for Mud Crabs (ICT-AGMAS): Deployment and Evaluation...32 Rossian V Perea and Jesus Paolo B Cullado (Cavite State University Naic, Philippines)
- A Lightweight 1-D Convolution Neural Network Model for Multi-Class Classification of Heart Sounds...40 Puneet K Jain (National Institute of Technology Rourkela, India); Ravi Raj Choudhary and Mamta Rani (Central University of Rajasthan, India)

Crop Disease Alert System: A Review...45

Hansini I Ekanayaka (Kotelawala Defence University, Sri Lanka)

Road Accident Prediction Using Xgboost...50

Shagun Ravi Jain, Katha Mehta, Amisha Agarwal and Archana Bomnale (NMIMS University, India)

Advance Quantum Inspired Evolutionary Optimization Algorithm...57 Om Prakash Patel (Mahindra University, India)

Saturday, August 27

Saturday, August 27 3:00 - 4:15

Session 3: Deep Learning & Computer Vision - 2

Chair: Vijender Reddy (Isro, India)

Feature Extraction Mechanism for Each Layer of Deep Echo State Network...65 Keikou Kanda and Sou Nobukawa (Chiba Institute of Technology, Japan)

- INCNet: Brain Tumor Detection Using Inception and Optimization Techniques...71 Sreedhar Kollem, Leo Joseph and Desai Usha (SR University, India)
- Profile Decentralized Application for Education...76 Swaroop B s, Sudharmenda G v and Gokul L (PES University, India)
- Playing Football Game Using Al Agents...84 Koyel Datta Gupta (MSIT, India)

Session 4: General Topics in Computational Intelligence - 2

Chair: Garimella Ramamurthy (Mahindra University, India)

Intertwining of Communities, Core and Periphery in Complex Networks...89

Sai Sujay Masina, Sathvik Nimmaneni, Navaneeth Gatttagoni, Yayati Gupta and Sanatan Sukhija (Mahindra University, India)

- Bayesian-Based Projectile Angle Parameter Estimation, CRLB and Analysis...97 Mahesh Bitragunta (Sri Venkateswara College of Eng. and Technology (SVCET), India); B. Sainath (BITS Pilani, India)
- Leveraging Network Similarity Measures for Recommendation Systems...102 Shagufta Anjum, Mohammed Rayid Masood, Yayati Gupta and Sanatan Sukhija (Mahindra University, India)
- A Two-Stage Classification of Heart Sounds Using Tunable Quality Wavelet Transform Features...110 Ravi Raj Choudhary (Central University of Rajasthan, India); Puneet K Jain (National Institute of Technology Rourkela, India); Mamta Rani (Central University of Rajasthan, India)
- Scope and Challenges of Blockchain in Indian Supply Chain Transformation for MSMEs...115 Chandra Prakash Gupta (Symbiosis Institute of Business Management Pune & Symbiosis

Session 5: Computational Sequence Modelling

Chair: Sunny Rai (Mahindra University, India)

Violence Detection Using Deep Learning Techniques..121

Syed Taqi Ali and Himanshu Gupta (Visvesvaraya National Institute of Technology, Nagpur, India)

Predicting Atmospheric Variables in the MERRA-2 Database Using Neural Networks...125 Bhavye Mathur (Indus International School, India)

4G Spectrum Occupancy Analysis in Chennai-India...132

Prabhu Chandhar (Chandhar Research Labs Pvt Ltd, India); Tamizhelakkiya K (Chandhar Research Labs Pvt Ltd & SRM Institute of Science and Technology, TamilNadu, India); Sathish Babu (Chandhar Research Labs Pvt Ltd, India); Vikram Krishnakumar (SASTRA Deemed University, Thanjavur, Tamil Nadu & IEEE, IEEE ComSoc, India); Ajay Sivakumar and Vignesh G (SASTRA Deemed University, India); Winston Samuel Raj Viswanathan (Goa College of Engineering, India)

Isotropization of Complex-Valued Reservoir Computing on 2-D Dynamical System...136

Bungo Konishi, Akira Hirose and Ryo Natsuaki (The University of Tokyo, Japan)

Electric Load Forecasting Using Dual Stage Attention Network with Cosine Annealed Warm Restart Schedule...141

Mahesh Nagubandi and Gopinath Pillai (Indian Institute of Technology Roorkee, India); Raman Walia (Indian Institute of Technology, Roorkee, India); Abhishek Karanath (Indian Institute of Technology Roorkee, India)