2024 Tenth International Conference on Bio Signals, Images, and Instrumentation (ICBSII 2024)

Chennai, India 20-22 March 2024



IEEE Catalog Number: CFP24K33-POD ISBN: 979-8-3503-5096-8

Copyright © 2024 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:
 CFP24K33-POD

 ISBN (Print-On-Demand):
 979-8-3503-5096-8

 ISBN (Online):
 979-8-3503-5095-1

ISSN: 2768-6418

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



1.	Madhumithaa S, Masoodhu Banu N M, Jehosheba Margaret M, Padmanabha Sarma A	1
2.	A Computer Aided Detection System for Breast Cancer using Lightweight CNN Models for Smart Healthcare Varun C, Ajay Kumar Poreddy, Thunakala Balakrishnan, Priyanka Kokil	6
3.	A Multi-input Deep Neural Network Framework for Non-invasive Detection of Anemia using Finger Nail Images Krithika S , Ajay Kumar Poreddy, Thunakala Balakrishnan, Priyanka Kokil	12
4.	Machine Learning-Based Early Seizure Detection: A Random Forest Classifier Approach for Pre-Ictal Stage Prediction in Epilepsy M Anaz Mohammed Vishar, Hepsiba D, Prasanna R, Vijay Anand L D	18
5.	Integrating Custom GAN Segmentation with Advanced Deep Learning Classifiers for Enhanced Acute Lymphoblastic Detection Naveen Prashanth G, Lalith Kumar M, Abinaya S, Alagu S	23
6.	Classification of Human Tissues from Histopathology Images Using Deep Learning Techniques A Ramanathan, Trilok Kantheti, Chen Zhou, Soundar Kumara, Carlos A Torres-Cabala, Swaminathan P. Iyer	30

1.	Exoskeleton Poojitha K, R.Asha, S.Poonguzhali	35
2.	Mobile Robotic Manipulator for material transfer with disinfection nit Nithyaa A.N, Premkumar R, Geetha Anandhi C, Gokul M, Durga R	40
3.	E- Crutch: A Promising tool for Rehabilitative Patients Josephin Arockia Dhivya A, R. J. Hemalatha, Jaya Rubi	47
4.	Graphene Quantum Dots based sensor for early detection of stroke Kirthana Sivakumar	52
5.	Implementation of a compensated two stage operational amplifier C.Krithika, K.Lokesh Krishna, D.Srinivasulu Reddy, B Guru Lakshmi, K.Muni Bhaskar, K.G.Vijay Sai	55
6.	Investigation of IOT Enabled Maternal Health Monitoring System for Antenatal Care Kanimozhi S, C. Kaushik Viknesh	61
7.	Decoding Sleep: Microphone-Based Snoring Analysis Using Embedded Machine Learning for Obstructive Sleep Apnea Detection Delpha Jacob, Priyanka Kokil, Subramanian S, Jayanthi Thiruvengadam	68

1.	Digital Diagnosis of Mouth Disease Using Deep Learning Algorithms G.Sudha, M.Mohammadha Hussani, N. Bagyalakshmi, R.Avanthika, M.Saraswathi, S.Renuka	74
2.	3D Fast Fourier Transform Analysis for The Detection of Alzheimer's Disease in MRI Images R.J.Hemalatha, Thamizhvani TR	83
3.	Multimodal Analysis of Bone Mineral Density Classification Sneha K, C.Sridevi, B. Yazhini, Amridha Lakshmi Venkkautaesh	87
4.	Image Analysis for Diagnosis of Glaucoma Using Soft Computing Methods Ponni S, Tejaswini S, Sushmitha S, Premkumar J, Bethanney Janney J, Sindu Divakaran	92
5.	Detection Of Anemia from Palpebral Image of Anterior Conjunctiva Using SVM Classifier Sofia Bobby J, Mythily V, Annapoorani C, Purnima S	96
6.	Identification of Gastric Abnormalities with Synchronous Biopsy Site Location from Endoscope Imaging in Gastrointestinal Tract using Deep Learning Technique Gnanapriya, Reshma, Varun M	101
7.	Structural MR Brain Image Based Diagnosis of Alzheimer's Disease Using Extreme Learning Machine Janavi T S, Keerthana V, Ayesha Jumana	107

1.	Deep Learning Model for Edge Devices for COVID-19 Detection from CXR Images Umar Farooq, Shahid Kamal, Mohammad Sarfraz	113
2.	Music Emotion Classification using Harris Hawk Optimization based LightGBM Classifier Hemprasad Yashwant Patil, Priyanka Bhagwan Patil, Anishkaa Balasubramaniam, Lackesh Shanmugasundaram	119
3.	Automatic Monkeypox Disease Detection from Preprocessed Images using MobileNetV2 Ramya Mohan, Robertas Damasevicius, David Taniar, N. Sri Madhava Raja, V. Rajinikanth	125
4.	Vision Transformer Based Diabetic Foot-Ulcer Detection: A Study Ramya Mohan , N. Sri Madhava Raja, Robertas Damasevicius, David Taniar, S. Prabha, V. Rajinikanth	129
5.	Convolution Neural Network (CNN) Based Posture Detection System to Prevent Hunched Posture Syndromes C.Sathish Kumar, Selva Sherin, Suriya V, Vinu P, Dhanush M, Karthik S, Surenderkumar, Arun Kumar	133
6.	Mathematical Modeling of the Impact of a 5 Day Interim Relaxation at 21 Days in 42 days Lockdown Strategy on COVID-19 Transmission in India Flavia Immaculyne, Bakiya Ambikapathy, Kamalanand Krishnamurthy, Lourduraj De Britto	140
7.	Patient Treatment Classification using Machine Learning M.C.Jobin Christ, P.Mohamed Sajid, V.Mythily, V.A.Sairam, A. Sanjo Christ	145

1.	Cost Effective Blood Collection Monitor for Emergency Patients Sofia Bobby J, Annapoorani CL, Nivetha S, Lavanya S, Kabini D, Padmapriya D	154
2.	Enhancing Lung and Colon Cancer Diagnosis: An Imagenet trained Transfer Learning approach for Histopathological Image Analysis Mullakuri Anusha, D Srinivasulu Reddy	160
3.	Renal Anomalies through Ultrasound Imaging and Segmentation Techniques T. Mangayarkarasi, D.Najumnissa Jamal, S.Kaja Mohideen	164
4.	Enhanced Lung Tumor Detection via Deep Learning Techniques in CT Imaging S Rubin Bose, V Karrthik Kishore K R, Angelin Jeba, Regin R	170
5.	Efficient Skin Cancer Diagnosis and Classification via High-Speed Deep Learning Architecture S Rubin Bose, M Izzath Suhail, Shaik Roshni, Angelin Jeba, Regin R	176
6.	Machine Learning Based Computer Aided Diagnosis of Breast Tumor from Dynamic Contrast Enhanced MRI Images Hetvi Manojkumar Dhimmar, Angeline Kirubha S P, Jeya Prabha A, Sameera Fathimal M	182
7.	Revolutionizing Alzheimer's Disease Prediction Using EfficientNetB6 in Deep Learning Vungarala Sai Praneeth, Naraganti Gowtham, SivaRamaChandran, R.Jansi	188

1.	A novel miniaturized hexagonal shaped patch antenna for medical applications Rashika. K, Thirisha. S, G.S.Uthaykumar, Mohan. C	195
2.	Mitochondrial Network Segmentation from Fluorescence Microscopy Images using VGG-UNet Ramya Mohan, S. Prabha, V. Rajinikanth	199
3.	Automatic Skin Melanoma detection from dermoscopy Images Using Resnet Variants V. Rajinikanth, A. Rama, Ramya Mohan	203
4.	Manifold Cervical Abnormality Categorization using Deep Learned Features and Support Vector Machine Ramesh Munirathinam, M Muthulakshmi, M Latha, Kotagiri Uttejitha, Naveen A, M Tamilnidhi	207
5.	Comparison of Deep Learning Models for Efficient Classification of Gastric Abnormalities Ramesh Munirathinam, M Latha, M Muthulakshmi, Maram Prathibha Reddy, Naveen A, M Tamilnidhi	213
6.	Investigation of Thyroid Nodule Detection Using Ultrasound Images with Deep Learning C. Kaushik Viknesh, S.Kanimozhi, Thirumalai Selvi R	220

1.	Analysis And Optimization of Foot Pressure Patterns in Pes Planus- A Comprehensive Study Sakthivel Sankaran, Thanga Suriya T, M.Peerkkanriyash, Preethika Immaculate Britto	441
2.	Development Of IoT Based Assistive System for Stroke Survivors Banu Rekha B, Vibin Vs, Archidha R, Sree Subiksha M K, Kathiravan S,	232
3.	Modification Of Artificial Womb in Combination with Modern Neonatal Incubator Principles M.Neela Harish, Prasanthi Srinivasan, Anushiya. K	238
4.	Emotion – Based Media Playback system for Autistic children Nithyaa A.N., R.PremKumar, J.NizuShahain, R.Sriraman	243
5.	CNN based breast detection using non-invasive techniques M. Neela Harish, S. Sathish, Dharun K, Keerthivasan R, Rudhresh V	250
6.	Sensor-Based Gait Analysis and Machine Learning for Predictive Fall Risk Assessment in Adults Gayathri T, Boopathi Sakthivel, Indiera M, Sanjay Kumar C, Pravin Kumar S, SudalaiMani B	255
7.	Feeding Aid Stabilizer for People with Essential Tremors Caused by Thalamic Haemorrhage Allwyn Gnanadas A, Hamshavarthini S, Rithanya K V, Kaviya P, Isabella S	261

1.	Hybrid Analysis for Detection of Alzheimer Disease Using Computer Aided Diagnostic Tool Kiran Kumar N, Kaushik Viknesh C	266
2.	Detection of fetal and mother heart rate with uterine contractions Seetharaman R, Anika Thirukkonda Karthikeyan,Harsha Ruban P S, Ambhika C, Harihara Subramanian L, Sasikumar S, Gayathri S	275
3.	Artificial Bee-Optimized CNN for Osteoporosis Detection using Leg X-ray Images Bakiya A, Vetrivel V, Kamalanand K, Anitha A, Aswath S, Valliammal M, Sridevi S	281
4.	An Intelligent Braille Communication Using Translation Glove Subathra Y, Silviya Jebastina A, Swetha R, Dharanika G R	286
5.	Swift Fingerprint Enhancement Technique with Parabolic Mask Filtering Algorithm Seetharaman R, Selvakumar M, Jeffery R, Soumya K, Ambhika C, Harihara Subramanian L, Nedumaran D	291
6.	Comparative Analysis of Brain Tumor Detection in MRI Images: A Study of Neural Networks for Enhanced Classification Performance Sowjanya B, Suganthi Lakshmanan	297

l.	Emotional Resonance in Brainwaves: EEG based Classification of Emotions Manishaa K, C Sridevi, Kiran B, M Tharun Ganesh Roy	303
2.	Cardiac Arrhythmia Diagnosis Using Deep Learning: A 1D CNN-GRU Approach with Multiclass SVM and DWT Analysis	314
	Hepsiba. D, L.D. Vijay Anand, Jencia. J, Vinotha. R, Amy Fedora F, Reshma Immaculate S	
3.	A compact spatial attention model for automated epileptic seizure detection using multichannel EEG Swathy Ravi, Ashalatha Radhakrishnan	321
4.	EEG-Based Cognitive Impairment Classification using Support Vector Machine Algorithm Karuppathal E, Kalpana R, Deepsika D, Senthil nadhan J	326
5.	Dynamic Connectivity Patterns in Resting State and Task-Based MEG: An Instantaneous Amplitude Correlation Approach Suhas M V, N. Mariyappa, Anitha H, Sanjib Sinha, Dr. Ravindranadh Chowdary M, Dr. Raghavendra K, Dr. Ajay Asranna, Dr Viswanathan L.G	333
6.	A Robust Algorithm for respiration rate monitoring during cognitive load using PPG Signals Muthu Pavithran, M. S. Ganeshmurthy, Dr. R. Periyasamy	339
7.	Implementation of a Novel Personalized Non-invasive Glucometer using Machine Learning Rajasingam N, Bhuvaneswari B, Imrankhan R, Padmanaban S, Madhan Kumar U, Kesavarani G	345

1.	Simulation Study for Designing Lung On-Chip Perumal D, Sweta Jha, Thiyam Deepa Beta, Smriti Ghimrie, Shelishiyah R	350
2.	Hydrogel-Based Bilayered Scaffold Incorporating Hydroxyapatite and Glycosaminoglycans for Advanced Osteoarthritis Therapy Abiramy Soundararajan, Varsha Santhosh, Nandhitha T	356
3.		361
4.	Applications of Polymers in Tissue Engineering – A Review Trupti Jain, Arun Karthick Selvam, Vijayavarsine R, Tejashree R, Mithila R, Haritha S, Monica V, Devi Baskar	367
5.	Review on Biosensor: A Diagnostic tool for cardiovascular diseases Meghna Rathish, Arun Karthick Selvam, Neeraja T, Madhumitha B S, Haritha S, Devi Baskar, Shivangi Pandey	371
6.	Chitosan-Based Bio Patches Impregnated with Amaranthus spinosus herbal Drug for Wound Healing Application. Arun Swathy M, Ramya E, Shruthi MG, Lokeshan R, Abinesh S	375
7.	3D printing in orthopedics and healthcare applications - A review Tejhaswini L K, Arun Karthick Selvam, Preetham Sai, Srimathi S, Shivangi Pandey, Devi Baskar, Haritha S	379

1.	pediatric patients Janya Jagan	38:
2.	Microfabrication of 3D Spheroid Tumor Models and Imaging using Spectral Domain Optical Coherence Tomography Pauline John, Pavithra Sivakumar, Christopher Sami, Mohammad A Qasaiemeh, Azhar Zam	389
3.	CricShotClassify: Application of Machine Learning for Classifying Aggressive Stroke-play of Cricketers based on One-Dimensional Vertical Ground Reaction Force Data	394
	Ananth Krishnan V, Adalarasu K, Visshvesh A L, Ragu Ragav P, Ummed Singh R, Jagannath M	
4.	Survival Prediction of Cirrhosis Patients Using Polynomial Features and Differential Evolution Hemprasad Yashwant Patil, Priyanka Bhagwan Patil, Lackesh Shanmugasundaram, Anishkaa Balasubramaniam	400
5.	Effect of Motion Sickness Drugs [Cinnarizine, Dimenhydrinate, Promethazine] on Gut Bacteria [E. coli] Subashini R, Shreya M, Srivibha Parthasarathy, Supraja Vaidyanathan	400