

# **2023 4th International Conference on Signal Processing and Communication (ICSPC 2023)**

**Coimbatore, India  
23-24 March 2023**



**IEEE Catalog Number: CFP23K92-POD  
ISBN: 979-8-3503-0078-9**

**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:	CFP23K92-POD
ISBN (Print-On-Demand):	979-8-3503-0078-9
ISBN (Online):	979-8-3503-0077-2

**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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# TABLE OF CONTENTS

Sl. No.	Title & Authors	Page No.
1.	DESIGN OF A SMART EMBEDDED VISION SYSTEM BASED ON FPGA FOR MEDICAL APPLICATIONS Amar Babu Yandrapati, Venkata Krishna Pratap Reddy Singam, Banbhushan Namburu, Venkatesh Paladugu, Tirumala Krishna Karakula	1
2.	A NOVEL DEEP LEARNING APPROACH FOR DETECTION OF SLEEP APNEA FROM ECG SIGNAL Thivya Anbalagan, Malaya Kumar Nath, Danduri Srutha Keerthi, Kambham Pranathi, Kothapalli Satyanarayana	6
3.	ANALYSIS OF GALL BLADDER & KIDNEY STONE USING SPECTROSCOPIC TECHNIQUE: A REVIEW Abhyanand Kumar, Lokesh Phagna, Sagar Rawat, Neha Gupta	11
4.	ENSEMBLE LEARNING FOR THE SURVIVABILITY PREDICTION OF BREAST CANCER PATIENTS USING METABRIC AND SEER DATASETS E. Jenifer Sweetlin, S.Saudia	16
5.	REVOLUTIONIZING POULTRY FARMING WITH IOT: AN AUTOMATED MANAGEMENT SYSTEM R. Murugeswari, P. Jegadeesh, G. Naveen Kumar, Sk. Nazim Babu, B. Samar	22
6.	SKIN CANCER PREDICTION USING DEEP LEARNING TECHNIQUES R Raja Sekar, Y Jagan Mohan Reddy, K Nani, C Sai Prathap Reddy, K Chiranjeevi, K Vikram	28
7.	SECURITY AND PRIVACY THREATS OF IOT DEVICES: A SHORT REVIEW Ramachandras Veluvarthi, Avinash Rameswarapu, Sai Kalyan K.V., Jayashree Piri, Biswaranjan Acharya	32
8.	HYBRID POWER MANAGEMENT USING INTERLEAVED LANDSMAN CONVERTER IMPLEMENTED THROUGH MACHINE LEARNING Mahalakshmi G, Arun Kumar S, Abhisek K, Arthi J, Ellanchikkumar T	38
9.	A NOVEL FRAMEWORK FOR NETWORK INTRUSION DETECTION IN HEALTHCARE DOMAIN Sherine Wise Betsy, Anitha Murugesan, N. Bala Sundara Ganapathy, N. Pughazendi	43
10.	ONLINE SALES PREDICTION IN E-COMMERCE MARKET USING MACHINE LEARNING S.Ajaykrishna, T.S. Suganya, Beema Rao, N. Pughazendi	47
11.	A SURVEY ON IOT BASED AIR POLLUTION MONITORING SYSTEM James Vijay P, Madhuri A, Madhuri A, Sri Venkata Siva Naga Prasad Y	52

12.	DEEP NEURAL NETWORKS BASED DETECTION AND ANALYSIS OF FAKE TWEETS Mareeswari G, Erana Veerappa Dinesh	56
13.	BATTERY MANAGEMENT FOR ELECTRIC VEHICLE USING LOW VOLTAGE DC-DC CONVERTER Vinoth Kumar. P, Athithya R S, Isai Valli R, Abinaya S, Hema B	62
14.	GLCM BASED SVM CLASSIFIER FOR COVID-19 DETECTION FROM CHEST X-RAYS Jeslin Shah P A, Deepa Sankar	68
15.	MENTAL HEALTHCARE ANALYSIS USING POWER BI & MACHINE LEARNING Jash Virani, Nikita Daredi, Aayush Bhanushali, Madhu Shukla, Pooja Shah	73
16.	IOT BASED LOCALIZATION AND TRACKING BY USING MIMO ANTENNA TECHNOLOGY Prakash.P, Manoj.G, Samson Immanuel.J	77
17.	NAVIGATOR FOR VISUALLY IMPAIRED PERSON Swati Patil, Nikhil Kanitkar, Dewoo Kudtarkar, Mandar Naik, Pranit Patil,	87
18.	PLANT-PATHOGEN DETECTION USING DIFFERENT MACHINE LEARNING TECHNIQUES Binal Kaka, Amit Ganatra	91
19.	ENHANCING PUBLIC SAFETY THROUGH LICENSE PLATE RECOGNITION FOR COUNTER TERRORISM THROUGH DEEP LEARNING TECHNIQUE Jenefa A, Vikas, Joshua Samuel, Bharanishwar, Srinivasan, Giri Balan, Joshua Premkumar	96
20.	REAL-TIME RAIL SAFETY: A DEEP CONVOLUTIONAL NEURAL NETWORK APPROACH FOR OBSTACLE DETECTION ON TRACKS Jenefa A, Aaron Ande, Thejas Mounikuttan, M.D. Anuj, Jenulin Makros G, G Rachel Rejoice, T Mary Shalini	101
21.	A ROBUST DEEP LEARNING-BASED APPROACH FOR NETWORK TRAFFIC CLASSIFICATION USING CNNs AND RNNs Jenefa A, Shebin Sam, Varun Nair, Boney George Thomas, Anson Saju George, Rino Thomas, Alwin Dany Sunil	106
22.	DESIGN OF FUZZY LOGIC CONTROLLER FOR SOLAR PV FED BLDC MOTOR WITH ZETA CONVERTER FOR PRECISION CONTROLLED SYSTEM Mahalakshmi G, Brijesh M, Gokul Raj M, Gowchik S, Barathkavi A	111
23.	MODELLING AND ANALYSIS OF MIXED MODE EM EMISSION IN EV FOR ELECTRO-MAGNETIC COMPATIBILITY Arokia Mary Caroline P, Vasanthanayaki C	116
24.	NEURAL NETWORK-BASED FAULT CLASSIFICATION IN MULTI-LEVEL INVERTERS N. Kavitha, J. Femila Roseline	123

25.	AN EXTENSIVE LITERATURE ON HEART SOUND CLASSIFICATION USING INTEGRATED SIGNAL PROCESSING AND DEEP LEARNING TECHNIQUES K Naga Sai Nikhithanjani, D Narmadha, G Naveen Sundar, K Martin Sagayam	128
26.	DEEP LEARNING MODEL FOR DISEASE PREDICTION USING GASTROINTESTINAL-ENDOSCOPIC IMAGES Slobodan Iyer, D Narmadha, G Naveen Sundar, S. Jeba Priya, K Martin Sagayam	133
27.	SURVEILLANCE SYSTEM FOR IMPROVED ENERGY EFFICIENCY USING LORA TECHNOLOGY Padmaja M, Sindhu Priya V, Hema Naga Dontu CH, Hema Naga Dontu CH, Praveen Kumar P	138
28.	THRESHOLDING BASED TOMATO LEAF DISEASE CLASSIFICATION S. Ledbin Vini, P. Rathika	143
29.	DESIGN OF GPS ANTENNA FOR VEHICULAR APPLICATION Anne Abhiram, Sunkesula Hasan Basha, Sakthi Abirami Balakrishnan, Devi Sowjanya P	148
30.	IMPROVED MFO ALGORITHM BASED PTS SCHEME IN OFDM SYSTEMS FOR PAPR REDUCTION Priyanka P, Rajiya Begum Shaik, Vijaya Kumar P, Sasi Prasanth S, Ruthvik P, Ravi Raja A	153
31.	SMART FARM PROTECTION SYSTEM USING IOT Rajendra B. Mohite, Amit J. Chinchawade, Uttam P. Waghmode, Uttam P. Waghmode, Vijay B. Mane, Vaibhav E. Pawar	158
32.	A VISION-BASED APPROACH FOR THE DIAGNOSIS OF DIGITAL ASTHENOPIA Nancy Jane Y, Krishna Padmanabhan, Karthika S, Blessing Christiana K	163
33.	EXPLORING SOLUTIONS FOR TEXT-TO-SPEECH SYNTHESIS OF LOW-RESOURCE LANGUAGES Anushiya Rachel Gladston, Pradeep K. V.	168
34.	OPTIMIZATION OF FINE TUNED DEEP LEARNING MODEL FOR MULTICLASS CLASSIFICATION OF CHEST X-RAYS Sreena V G, D Narain Ponraj	173
35.	GENDER DETECTION AND CLASSIFICATION FROM FINGERPRINTS USING CONVOLUTIONAL NEURAL NETWORK Anju Narayanan, Quazi Mateenuddin Hameeduddin	178
36.	A MINIATURIZED METASURFACE BASED DIELECTRIC RESONATOR ANTENNA FOR WIRELESS COMMUNICATIONS B.Y.V.N.R.Swamy, V.Sathvika, V.Venkatesh, K.Narendra Reddy	182
37.	DESIGN AND PARAMETRIC ANALYSIS OF QUAD BAND METAMATERIAL ABSORBER Jeena Viji, Titto Anujan	187

38.	COMPARATIVE ANALYSIS OF GRAPHENE NANOANTENNA FOR DIFFERENT SUBSTRATE AT TERAHERTZ FREQUENCY	192
	Hanna Lalu, Titto Anujan	
39.	MACHINE LEARNING, DEEP LEARNING MODELS FOR AGRO-METEOROLOGY APPLICATIONS	196
	Prakash Kumar Jala, R. Meenal, P. Nagabushanam, A. Immanuel Selvakumar, Jude Hemanth. D, E. Rajasekaran	
40.	ELECTRIC VEHICLE MOTOR CONTROLLER DESIGN USING ATMEGA64M1	201
	Anand Sutar, Swati Mahamuni, Simran Bagwan, Sagar Jamadar, Yogesh Patil, Priyal Thakur	
41.	DESIGN OF LOW POWER PASS TRANSISTOR LOGIC BASED ADDERS FOR MULTIPLIER IN 90NM CMOS PROCESS	206
	Durai Balaji R, D.S.Shylu Sam, Manoj G, D. Jayanthi, Samson Immanuel J, Shaik Babafakruddin, Shriashwinraja E G V	
42.	DESIGN AND ANALYSIS OF FREQUENCY SYNTHESIZER FOR IMPLANTABLE CARDIOVERTER DEFIBRILLATOR (ICD) IN 90 NM TECHNOLOGY	211
	Shaik Babafakruddin, Manoj G, Samson Immanuel J, D. S. Shylu Sam, Durai Balaji R, Shriashwinraja E G V	
43.	8 BIT SAR LOW POWER DATA CONVERTER DESIGN IN 90NM TECHNOLOGY FOR LOW FREQUENCY SIGNAL ACQUISITION	216
	Shriashwinraja E G V, Samson Immanuel J, Manoj G, Aneesh K, D S Shylu, Shaik Babafakruddin, Durai Balaji R	
44.	SMART ASSISTIVE BAG FOR THE VISUALLY IMPAIRED	220
	John Bosco John Paul, Thusnavis Bella Mary I, Martin Saaghayam K, Hubert Spencer I, Rachana C Nair, Aleena Ajith	
45.	INTERNET OF THINGS CONTROL CENTER	225
	Vibha Thomas, Sebastian Terence, Bishnu Agrawal, Jude Immaculate	
46.	MODIFIED 2D-UNET FOR BRAIN TUMOR SEGMENTATION	229
	Deepa P L, D Narain Ponraj	
47.	A REVIEW OF BLOCKCHAIN TECHNOLOGY IN DIFFERENT SECTORS: CHALLENGES AND SOLUTIONS	234
	Dendukuri Venkata Datta Bhargava, Chinnam Sandeep, Mithinti Venkata Sai Sri Prem Gopal, Mohammad Sahil, G Bindu, Iwin Thanakumar Joseph S	
48.	REAL-TIME SUSPICIOUS COUNTER-FLOW DETECTION	240
	Atif Faridi, Farheen Siddiqui, Md Tabrez Nafis, Mohd Abdul Ahad	
49.	COMPACT MULTIBAND FILTER FOR WIRELESS COMMUNICATION	245
	Mariselvam V, Dhanush D, Bharanidharan G, Dinesh Kumar S	
50.	GENERATING SYNTHETIC DATASET FOR COTTON LEAF USING DCGAN	249
	Lakkshmi Yogesh N A, Bharathraj G, Sanjay Prasanth A S, Shreyas S, Rajesh C B	

51.	HUMAN FALL DETECTION USING MACHINE LEARNING AND DEEP LEARNING TECHNIQUES: A SURVEY Sherin Zebiah S, Ancy Vetha Shalomy, Jyotsana Kachhap, Nikita Tete, Nancy R, A.Ananthi, J.Prasanna, M.S.P.Subathra, S.Thomas George	253
52.	USER INTERFACE OF BLOCKCHAIN-BASED AGRI-FOOD TRACEABILITY APPLICATIONS Kiruthika J K, Yawanikha T, Kannika A, Megaranjani C, Rajalakshme R S, Kalaiyarasu D	258
53.	FLIGHT DELAY PREDICTION USING DIFFERENT REGRESSION ALGORITHMS IN MACHINE LEARNING A. Evangeline, R. Catherine Joy, A. Albert Rajan	262
54.	ANXIETY AND FEAR BASED SAFETY DETECTOR USING KNN CLASSIFICATION ALGORITHM M Karthiga, V Gowri Priyaa, A Stephen Sagayaraj, J Vinu, R P Rupesh, R Karthik	267
55.	TIME SERIES FORECASTING OF ETHEREUM PRICE BY FB-PROPHET Yuvarani P, Bharani P, Dharun B, Dinesh P	272
56.	EMPOWERING WOMEN'S SAFETY WITH SMART IOT TECHNOLOGY: A ROBUST PROTECTION SYSTEM N.V.K.Ramesh, Akhila Alaparathi, Sai Charan G, Rishitha Settipalli, Pranathi Velga, B. Veena Vani	278
57.	ANALYSIS OF CACHE MEMORY CIRCUIT FOR COMPUTE IN MEMORY APPLICATIONS A. Trephena Patricia, Ewins Pon Pushpa.S, A. Diana Andrushia	282
58.	INVESTIGATION OF MACHINE LEARNING TECHNIQUES AND SENSING DEVICES FOR MENTAL STRESS DETECTION Smirthy M, Dhanushree M, Ashisha G R	287
59.	PRIORITY QUEUE-BASED EXTRACTIVE TEXT SUMMARIZER V. Sherlin Solomi, Ch. Keertana Sarvani, N. Supriya	292
60.	IOT BASED HEALTH MONITORING AND TRACKING IN COMBAT Govarthan R, Hariharan S, Thusnavis Bella Mary, J John Paul, M A P Manimekalai, K Thilagavathi	297
61.	QUAD SRR SLOT DUAL BAND ANTENNA FOR N48/N78 BAND AND WLAN APPLICATIONS Janet Jackcy A, G Shine Let, Suja Saffrin S, Sai Kishore G, Yaswanthi G, Anto Amala A	302
62.	EFFECTIVE DETECTION OF COPY MOVE FORGERY USING SURF Rakhi R A, Aldin Justin Sundararaj, R. Catherine Joy, J. Jenkin Winston	306
63.	FUNCTIONAL VERIFICATION OF SPI PROTOCOL USING UVM BASED ON AMBA ARCHITECTURE FOR FLASH MEMORY APPLICATIONS Shaila C K, G Manoj, Divya P.S., Vijila. M	311

64.	REAL-TIME CLASSIFICATION OF VEHICLE LOGOS ON ARDUINO NANO BLE USING EDGE IMPULSE	316
	Desu Abhinay, Sattaru Vijay Vighnesh, Laxmi kantham Durgam, Ravi Kumar Jatoth	
65.	A NOVEL ENSEMBLE CLASSIFIER FRAMEWORK FOR ACCURATE FETAL HEART RATE CLASSIFICATION	321
	R. Hephzibah, A. Hephzibah Christinal, R.Jayanthi, D. Abraham Chandy, Chandrajit Bajaj	
66.	AUTOMATIC DISEASE CLASSIFICATION OF PADDY LEAF IMAGES USING DEEP LEARNING ALGORITHMS	325
	Durgadevi Velusamy, Mounika A, Ragulraj D, Vigneshwaran K	
67.	DESIGN OF HIGH-PERFORMANCE CARRY SELECT ADDER USING MULTIPLEXER BASED LOGIC IN 90NM TECHNOLOGY	330
	Kanugula John Wesly, Sompalli Rajesh, Minnadivel Raj Rajeswaran, Muttaluru Aswartha Naidu, Ruby Grace, D S. Shylu S	
68.	PERFORMANCE ANALYSIS OF NOVEL COPLANAR WAVEGUIDE FED SLOT ANTENNA FOR ECG MONITORING	334
	Angel Shiny Chellathurai, D. Sugumar, T. Kishor, Leya Sara Jacob, Aldrin Antony A, Shamith M	
69.	DESIGN AND IMPLEMENTATION OF LOW POWER UNIDIRECTIONAL SHIFT REGISTER	339
	G. Cundanewara Reddy, Ch. Nikhilesh Reddy, Vandana Bandi, M. Sreenivasulu, D S Shylu	
70.	OPTIMIZING MRF FOAM DAMPER PARAMETERS USING ARTIFICIAL NEURAL NETWORKS AND GENETIC ALGORITHMS FOR IMPROVED DAMPING FORCE PERFORMANCE	343
	S.Sarath, P.Sam Paul, G.Lawrance, D.S.Shylu Sam	
71.	DESIGN OF AN AUTONOMOUS MOWER WITH HEIGHT ADJUSTABLE CUTTING MOTOR	348
	S. Diwakaran, M. Dhanush Vasavi Kumar, P. Syam Mohanreddy, Ch. Rishika, Ch. Rishika, M. Sivasubramanian	
72.	IOT BASED FIRE PROTECTION SYSTEM	353
	D. Deepak kumar, B. Bharathraj, V. Naveen Vishak, S. Jasith, L. Raja	
73.	A CRR BASED THZ METAMATERIAL ABSORBER FOR BIOMEDICAL APPLICATIONS	358
	T.Ajay, G.Manoj Kumar Reddy, M.Naga Sai Ganesh, Anugrah Hembram, H. Victor Du John	
74.	RATE MAXIMIZATION OF CELL-EDGE USERS THROUGH COOPERATIVE NON-ORTHOGONAL MULTIPLE ACCESS	361
	Helen Sheeba J, Vinoth Babu Kumaravelu, Agbotiname Lucky Imoize	



75.	MACHINE LEARNING BASED FUZZY LOGIC APPROACH FOR AUTO HARMONIZATION OF MELODIES IN C MAJOR Abraham George, X. Anitha Mary, Pochiraju Udaya Sai Venkatesh, Gurram Aakash, Bhupathiraju S S M Karthikeya Varma, Kocherlakota Snigdha	367
76.	AN NOVEL ALGORITHM FOR CLOUD SECURE STORAGE USING CLOUD DISPERSION AND BLOCK CHAIN SYSTEM R.Vijaya Manikandan, K.Gurunathan, D.Ravindran, M.Sanjai, V.P.Pranav Raja	372
77.	MACHINE LEARNING ALGORITHMS FOR CROP YIELD PREDICTION IN REAL-TIME SCENARIOS N. V Suresh Krishna, Pokala Neeraj, Bathina Surya, B.V. Prudhvi, V. Hima Deepthi	377
78.	A VOICE-CONTROLLED ROBOTIC ARM FOR MATERIAL HANDLING Saravanan.M, Saran Karthik C, Sri Ragavendra Balaji P, Surya Prasath J, Harish Ramanan A, P Naveen	382
79.	COMPARATIVE ANALYSIS OF GLAUCOMA DIAGNOSIS ON RETINAL FUNDUS IMAGES USING AI TECHNIQUES Bibiya Susan Abraham, Dalaali Gousiya Bhanu, Anna Thomas, J. Anitha	386
80.	EARLY DIABETES PREDICTION WITH OPTIMAL FEATURE SELECTION USING ML BASED PREDICTION FRAMEWORK G. R. Ashisha, X. Anitha Mary, H. Mohamed Ashif, I. Karthikeyan, J. Roshan	391
81.	SLOTTED HEXAGONAL ULTRAWIDEBAND MICROSTRIP ANTENNA (SHUMA) FOR TELEMETRY APPLICATIONS Melbin Elsa Cheriyan, Rahul Krishnan, Ramu R, Glintu Joy, Abina Ann Mathew, Shefin Shaji	396
82.	FPGA BASED POWER QUALITY IMPROVEMENT OF GRID CONNECTED EV BATTERY SYSTEM Porselvi T, Nandhagopal M, Shalini Priya J, Hemalatha M, Jaiakash S, Sai Ganesh CS	400
83.	PERFORMANCE ANALYSIS OF DIFFERENT HARDWARE PLATFORMS IN WIRELESS SENSOR NETWORKS P. Esther Jebarani, Amir Anton Jone, Tony Jose, J. John Paul, Shelja Jose, Pradeep Kumar	406
84.	PERFORMANCE IMPROVEMENT OF SOLAR CELL USING MODIFIED BOOST CONVERTER S. Visalakshi, R. Issan Raj, M. Aswin, R. Santhosh, A. Yuwaraj	412
85.	A NOVEL WIRELESS RADIO TECHNOLOGY PARADIGM FOR NEXT GENERATION WIRELESS NETWORKS Prabakaran Kasinathan, Angulakshmi M, Iswarya K, D.Elangovan, K.Chanthirasekaran, G Parthasarathy	417
86.	VLSI IMPLEMENTATION OF MEDIAN FILTER FOR NOISE REMOVAL IN EMG SIGNAL Malathi D, Naveen P, Sahasra V, Rithika S	422

---

87. DESIGN OF RISC-V PROCESSING UNIT USING POSIT NUMBER SYSTEM 427  
Malathi D, Sneha R, Shanmugapriya.M, Sethurajan S

---

88. DEEP LEARNING BASED COMPRESSIVE SENSING – RADIAL BASIS FUNCTIONAL NEURAL NETWORK FOR IMAGE FUSION 432  
M. Gayathri Devi, I.S. Akila