

First International Conference on Circuits, Signals, Systems and Securities (ICCSSS 2020)

IOP Conference Series: Materials Science and Engineering
Volume 1084

Sathyamangalam, India
11-12 December 2020

Part 1 of 2

Editors:

**R Harikumar
C Ganesh Babu
C Poongodi**

**D Deepa
R Deepa
P Sivaraman**

ISBN: 978-1-7138-4587-4
ISSN: 1757-8981

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution 3.0 International Licence.
Licence details: <http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2022)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

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
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

PART 1

Preface	
Peer review declaration	
Modified Vgg Deep Learning Architecture For Covid-19 Classification Using Bio-Medical Images	1
<i>R Anand, V Sowmya, Vijay Krishna Menon, E.A. Gopalakrishnan, K.P. Soman</i>	
Ensemble Flower-Pollination Algorithm for Automatic Breast Cancer Classification using Haar Features	10
<i>S R Sannasi Chakravarthy, Harikumar Rajaguru</i>	
Analysis of EEG Signal for the Estimation of Concentration Level of Humans.....	18
<i>R. Velnath, V. Prabhu, S. Krishnakumar</i>	
Feature Fusion In Multimodal Emotion Recognition System For Enhancement Of Human-Machine Interaction.....	25
<i>S Veni, R Anand, Divya Mohan, Eldho Paul</i>	
Performance Analysis of Dimensionality Reduction using PCA, KPCA and LLE for ECG Signals.....	35
<i>J Haris Mita, C Ganesh Babu, M Gowri Shankar</i>	
Design of Density Clustering In Diabetic Retinopathy Based Eye Fundus Segmentation	43
<i>Naluguru Udaya Kumar, Thelapolu Nikitha, Srinivas Bachu</i>	
Security of Finger Prints with Video Watermarking Techniques Based On DWT and SVD.....	49
<i>Naluguru Udaya Kumar, Gumasta Sandhya, Srinivas Bachu</i>	
DCAECSCS: Divide and Conquer Algorithm Based Electro Cardiac Signal Compression Scheme	57
<i>Srinivas Bachu, Thelapolu Shalini, Naluguru Udaya Kumar</i>	
Ecg Arrhythmia Signals Classification Using Particle Swarm Optimization-Support Vector Machines Optimized With Independent Component Analysis.....	63
<i>M. Ramkumar, C. Ganesh Babu, G.S. Priyanka, R. Sarath Kumar</i>	
Fake News Detection Using Source Information and Bayes Classifier.....	73
<i>T S Reshmi, S Daniel Madan Raja, J Priya</i>	
ResNet: A convolutional Neural Network for detecting and diagnosing of coronavirus pneumonia.....	79
<i>R. Angeline, R. Vani</i>	
A Generative Adversarial Network Based Segmentation and Classification using Deep CNN: Systematic Review	87
<i>R S Sabeenian, V Vijitha</i>	
Wavelet Region implanting watermark upgrades the security framework in Digital Speech Watermarking.....	95
<i>S. China Venkateswarlu, Naluguru Udaya Kumar, Annam Karthik</i>	
Comparison of Paul Viola – Michael Jones algorithm and HOG algorithm for Face Detection.....	104
<i>K P Nithish Sriman, P Raj Kumar, A Naveen, R Saravana Kumar</i>	

Wavelet Based CNN for Diagnosis of COVID 19 using Chest X Ray	109
<i>Suresh Gunasekaran, Santhiya Rajan, Leeban Moses, S Vikram, M Subalakshmi, B Shudhersini</i>	
Multi-objective economic dispatch of distributed generation using differential evolution algorithm.....	117
<i>Arumugababu Mariakuttikan, Mahalakshmi Rajaram, Bhuvanesh Ananthan, Kannan Subramanian, Karuppasamy Pandiyan Murugesan</i>	
Deep Learning Based Multilevel Classification of Alzheimer’s Disease using MRI Scans.....	123
<i>Manu Raju, M Thirupalani, S Vidhyabharathi, S Thilagavathi</i>	
Fake news detection using machine learning and Natural Language Inference (NLI).....	130
<i>K R Sabarmathi, K Gowthami, S Sanjay Kumar</i>	
Machine Learning Based Model to Predict Stock Prices: A Survey	138
<i>R Harikrishnan, Aksh Gupta, Namrata Tadanki, Ninad Berry, Ramya Bardae</i>	
Visual Speech Recognition using Convolutional Neural Network.....	146
<i>B Soundarya, R Krishnaraj, S Mythili</i>	
Machine learning & image processing for hand written digits and alphabets recognition from document image through MATLAB simulation.....	151
<i>Satrughan Kumar Singh, Jainath Yadav</i>	
Brain Tumor Detection Using Spatial Filtering Algorithm	159
<i>P Sritha, R S Valarmathi, K Brundha, V Dhanusri</i>	
Detection and Classification of Breast Cancer Using improved Grey Wolf Algorithm.....	165
<i>T Senthil, J Deepika, R. Nithya</i>	
Probabilistic Feature Extraction Techniques for Electrocardiogram Signal-A Review	173
<i>M. Ramkumar, C. Ganesh Babu, S. Karthikeyani, G.S. Priyanka, R. Sarath Kumar</i>	
Selective activation of Forearm muscles for improving Wrist Joint Stability	180
<i>A Arulkumar, P Babu</i>	
Content Based Image Retrieval Using Deep Learning Convolutional Neural Network.....	188
<i>Arshiya Simran, P.S Shijin Kumar, Srinivas Bachu</i>	
Automatic number plate recognition using deep learning	194
<i>V Gnanaprakash, N Kanthimathi, N Saranya</i>	
Sentimental analysis using Machine learning techniques on python.....	201
<i>K P Sampooram, B Hemalatha, M Kaaviyasri, K Jaya Priyanka</i>	
Analysis of Epilepsy Risk Levels from EEG Features through Support Vector Machine and Minimum Relative Entropy Model.....	207
<i>Harikumar Rajaguru, Monish Ramesh, K Manoranjith</i>	
Performance Analysis of classifiers in Detection of Abnormalities from Ultrasonic Images - A Review.....	212
<i>R Harikumar, R Karthikamani</i>	
Review of PPG signal using Machine Learning Algorithms for Blood Pressure and Glucose Estimation.....	219
<i>R Gayathri Priyadarshini, M Kalimuthu, S Nikesh, M Bhuvaneshwari</i>	

Investigation on enhancing the binary classification accuracy of supervised classifiers using various transforms.....	226
<i>K. Issac, K. Bharadwaj, N Bharanidharan, Harikumar Rajaguru</i>	
Usage of Particle Swarm Optimization to Improve the Performance of Supervised Classifiers	232
<i>N Bharanidharan, M Nivetha, A Balakrishna, P Dhanaraju</i>	
Digital Watermarking For Medical Images Using DWT And SVD Technique	239
<i>M Pravin Savaridass, R Deepika, R Aarnika, V Maniraj, P Gokilanandhi, K Kowsika</i>	
A Novel Method of Billing System Using Deep Learning.....	247
<i>J Haritha, K Prakash, B Navina, S Saveetha</i>	
Analysis on Wavelet Feature and Softmax Discriminant Classifier for the detection of epilepsy	253
<i>R Deepa, Harikumar Rajaguru, C Ganesh Babu</i>	
A Review on Natural Language Processing Report: Statistics and Facts.....	260
<i>PM Dinesh, J. Hariraj Kumar, S Chandra Sekar, M. Swarnambiga, S. Ranjani</i>	
Optimization of Beamforming in Subarray Antennas Using Firefly Algorithm	265
<i>C. Raju, M. Ramkumar Raja, M. Mano Raja Paul, M. Leeban Moses</i>	
Domain Translation of Images Using Auto Encoders and Coupled GANs with Unsupervised Learning	273
<i>Vigneshkumar Arunachalam, Harikumar Rajaguru, Vinubama Krishnamoorthy, Viswanathan Varadaraj, Pavithra Ravikumar</i>	
Virtual Tollgate using Machine Learning.....	281
<i>P Manojkumar, N Raja Sekaran, M Dhanapal, C Srinivasan</i>	
Joint Sparsity and Total Variation Based Unmixing of Mixed Noise	288
<i>Srinivas Bachu, Moturi Mounika, K Nagabhushanam</i>	
Analysis of LSE and MMSE Pilot Based Channel Estimation Techniques for MIMO-OFDM System	295
<i>R Gayathri, T Perarasi, S Saranya, S Harikirubha, K Roobini</i>	
Design of Dual Feed Antenna for ultra Wide Band Applications	304
<i>S. Priyadharsini, B. Nataraj</i>	
Analysis and Modeling of various Tapered Coplanar Waveguide	312
<i>B Nataraj, K R Prabha</i>	
Adaptive Cross Entropy-Based Kalman Filter Hybrid Precoding For Frequency Selective mmWave MIMO Channel: Time Domain approach.....	321
<i>K Shoukath Ali, C Raju, K Keerthana</i>	
Adaptive Beam forming algorithms for wireless Communication using LABVIEW	330
<i>M. Ramya, V. Thamizharasan, V. Parthipan</i>	
Garuda Vyuha based Microstrip patch antenna structure with high-gain for dual-band wireless applications.....	341
<i>P. Sampath, T. Perarasi</i>	
Analyzing The Performance Of On-Demand Routing Protocols Based On Rainfall Intensity In Wi-Fi Networks	350
<i>N Hariprasath, T Jayaram, R Prema</i>	

Reduction of Peak Power in ofdm Signal Using Cyclic Shifting in Partial Transmit Method	360
<i>D. Deepa, C. Poongodi, P. Sandhiyadevi, G.K. Mohanapriya</i>	
Design and Implementation of AMBA APB Protocol	371
<i>J Mukunthan, A Daniel Raj, S Keerthivadana, R Kiruthika, T Shruthi, S Snegasri</i>	
Routing in a Wireless Sensor Network using a Hybrid Algorithm to Improve the Lifetime of the Nodes.....	380
<i>M. Senthilkumar, V.R. Kavitha, M. Suresh Kumar, P. Anantha Christu Raj, D. Ruth Anita Shirley</i>	
Wireless Sensor Networks: A Review on Sensor Deployment and Routing Protocols for Different Application	388
<i>L Pavithra, M Abdullah, S P Prakash, S Karthick, B Ragavi, V D Nandhini</i>	
Analysis of Linear Precoding Techniques for Massive MIMO-OFDM Systems under various scenarios	396
<i>D. Subitha, R. Vani</i>	
High Speed VLSI Architectures of FIR Filters for Image Applications – A Review.....	403
<i>Tintu Mary John, Shanty Chacko</i>	
Design of a Memory Array Using Tail Transistor and Sleep Transistor Based 7T SRAM with Low Short Circuit and Standby Power	414
<i>R Krishnaraj, B Soundarya, S Mythili, N Vikram</i>	
Implementation of efficient MAC for DSP applications using Modified Booth Encoding algorithm technique	422
<i>S Tamilselvan, S Dharani, R Ramesh, K HemaPriya</i>	
A New Architecture for Transformation of Binary to Double Base Number System (DBNS) with Bases 2 and 5 using Different Search Algorithms.....	430
<i>Satrughna Singha, Amitabha Sinha</i>	
VLSI Implementation Of High Speed Low Power Design Using Hybrid Power Gating Technique	438
<i>S Pousia, K Murugan</i>	
Ultra-Low Power Memory Circuit Unit for Space Application	446
<i>S.P. Karthi, K. Kavitha, Ganesh Babu, J R Dinesh Kumar, C Visvesvaran, N Girinath</i>	
Modelling of Parallel Unsigned 2^n-1 Modular Arithmetic Multiplier for RNS.....	452
<i>S Elango, P Sampath, Sajan P Philip, S Raja Sekar</i>	
Design And Optimization Of Floating Point Division And Square Root Using Minimal Device Latency	460
<i>K Hema Priya, L Arulmurugan, S Praveen Kumar, R Ramesh</i>	
High Speed and Performance analysis of Multiplier in Field Programming Gate Array	471
<i>M Gowthami, Kehkeshan Jalall S, Tony Aby Varkey M, K Kiruthika</i>	
Determination of Switching Angle from Inductance Profile of Converter Fed Switched Reluctance Generator in Wind Energy Conversion System.....	479
<i>B Mohamed Arafath Rajack, S Ganesh, S Sarojini Mary, JS Richard Jimreeves</i>	
A Critical Review on Fume Extraction System for Pipe and Plate Welding.....	487
<i>K V Satheesh Kumar, M Dharmaraj, P Thangavel, K A Srikishore, R Sudharsan, M Vimal</i>	

Corrosion Detection of an Orifice Plate for Flow Rate Measurement using Heat Transfer Mechanism	501
<i>V. Prabhu, R. Velnath, K.S. Vairavel</i>	
Development of Latex Transducer for Rubber Tapping Process.....	506
<i>J. Arthur Vasanth</i>	
Monitoring & Tracking System for Elephants Using GPS/GSM with Smart Electric Fencing	514
<i>K. Rajalashmi, V.S. Hemachandira, S. Saravanan, M Chandru, R.S. Kaviyadevi</i>	

PART 2

A Novel Low Noise Instrumentation Amplifier for Bio-Medical applications	521
<i>N Girinath, C Ganesh Babu, JR Dinesh Kumar, SP Karthi</i>	
Zigbee Based Hazard Detecting Helmet.....	530
<i>J Reena Catherine, R Priyanka, Andril Alagusabai, K Renuka</i>	
Auto gain Ultra low signal transimpedance amplifier for Blood Diagnostic machine	538
<i>Saroj R Desai, Nilima V Warke, Shivaji S Nawatake</i>	
Raspberry Pi based Multi-optional Wireless Wheelchair Control and Gesture Recognized Home Assist System	547
<i>K Renuka, R Harini, V Balaji, N Ashok</i>	
Smart Solar Powered Agricultural Fertilizer Sprayer.....	559
<i>Srinivasan Mallan, K Karthick, B Cheran, S Karthickram</i>	
Implementation of Dual Axis Solar Tracking System.....	566
<i>V Mohanapriya, V Manimegalai, V Praveenkumar, P Sakthivel</i>	
Mercury Detection in Marine Environment using Electrospun Nanofibers as Colorimetric Sensor	579
<i>T Blesslin Sheeba, V. Nandagopal, P. Rajalakshmy, T. Kesavan, A.G. Aneesh Kumar</i>	
Wireless Home Automation System.....	587
<i>P Hamsagayatri, S Subash, S Susheel, K M Venkatesh</i>	
Architecture of a HV Power Battery Protection Devices for Hybrid Electric Vehicles (HEV)	598
<i>Mohan P. Thakre, Yogesh V. Mahadik, Nikhil Sardar</i>	
Potentially Affect Of A Vehicle To Grid On The Electricity System	605
<i>Mohan P. Thakre, Yogesh V. Mahadik, Dipak S. Yeole</i>	
Matlab based simulation for overcurrent protection in induction motor drive	614
<i>K.V. Santhosh Kumar, R. Senthilkumar</i>	
Current-mode Positive and Negative Rectifier based on DDCC suitable for Higher Frequency operations	622
<i>Sweta Kumari, Deva Nand</i>	
Unwavering Quality Appraisal and Distributed Generation in Bus Dissemination Framework by LOLP Procedure.....	630
<i>Leeban Moses, Perarasi, Raju, Gayathri, L Lino</i>	
Optimal Congestion Management by Load Curtailment in Electricity Market.....	641
<i>J. Senthil Kumar, C. Kumar, S. Balavignesh, A. Dheepanchakkravarthy</i>	

Design and Implementation of Intelligent Head Protective Gear for Accident Detection and Notification.....	651
<i>K T Maheswari, R Srimathi, S Jaanaa Rubavathy, R Karpagam, V Thanish Jackson</i>	
Pulse Width Modulation Technique for Nine-phase Electric Vehicle Drive System.....	661
<i>J S Sakthi Suriya Raj, Ajith Kumar Prabhakaran</i>	
Simulation Of Dc-Dc Converter Topology For Solar Pv System Under Varying Climatic Conditions With Mppt Controller.....	670
<i>P. Selvabharathi, S. Veerakumar, V. Kamatchi Kannan</i>	
Predictive control for Islanded mode DG with Voltage Source Inverter.....	679
<i>T Sathiyarayanan, K Nivesh Kumar</i>	
PV Based Battery Less Cooling and Lighting Solution.....	687
<i>K. Nivesh Kumar, L. Mothinathan, T. Sathiyarayanan, S. Arun Jayakar</i>	
Performance Evaluation of speed control using Fuzzy dependent Genetic Algorithm in PMSM.....	695
<i>F. Vijay Amirtha Raj, V. Kamatchi Kannan, P. Ponmurugan, K. Chitra, M. Lakshmanan</i>	
Power Flow Management in Hybrid Renewable Sources	709
<i>Alex Stanley Raja, R Vidhyalakshmi, S Sundar, V Suresh, M Suresh, P Maniraj</i>	
Diversified Applications Of Hydrogen Bond Liquid Crystals	722
<i>M L N Madhu Mohan</i>	
Performance Evaluation with Multivariable and Multiloop control for a class of square MIMO systems	734
<i>S Sudhahar, C Ganesh Babu, D Sharmila</i>	
Robust Controller And Industrial Internet For The Industrial Nonlinear Level Process	746
<i>S Arun Jayakar, G.M. Tamilselvan, S. Sakthiya Ram, M. Kalimuthu</i>	
A Novel Approach on PLCC Based Domestic Data Communication.....	757
<i>J Sridhar, G Lingeswaran</i>	
Body Mass Index based Health drink vending machine using Programmable Logic Controllers.....	766
<i>M Kalaiyarasi, C Ganesh Babu, K Ramya Deekshitha, B V Sakthi</i>	
Review on Sensor based Colour Sorting Robot for Candy Manufacturing	771
<i>S. Krishnakumar, K. Sneha, A. Reethika</i>	
Identification of Fruits and Vegetables using Embedded Sensor	776
<i>L Rajasekar, C Ganesh Babu, D Sharmila</i>	
Modeling of an Adaptive Energy Based Route Broadcasting Algorithm (AERBA) Using Route Optimization in MANET.....	783
<i>S B Manoojkumar, C Poongodi</i>	
Certain Investigations and an experimental approach for the kerbside Rainwater collection	790
<i>S Mythili, M Kalamani, R Krishnaraj, B Soundarya</i>	
Survey of an Effective Outcome Based Teaching Learning Taxonomy in Professional Undergraduate Courses	795
<i>A. Shyamalaprassanna, R. Velnath, S. Pousia, M. GuruVimal Kumar</i>	

Design and Simulation of Modular Multilevel Inverter Using PWM	806
<i>Nandhakumar Arumugam, Mugilraj Suresh, Mohanrajan N Dharmalingam</i>	
Modelling and Simulation of PV-BES Based Microgrid System Operating in Standalone Mode	815
<i>M. Gaayathri, K. Ranjith Kumar</i>	
Super Core Magnetic Material based Switched Reluctance Motor for Electric Vehicle Applications.....	823
<i>S Bhuvaneswari, P Sivaraman, K T Maheswari, A Matheswaran</i>	
Design and Development of Automatic Quality Domestic Water Distribution and Wastage Reduction Management System	831
<i>C Ganesh Babu, G Saran, V Balamurugan, G K Harirajan, M Kavinprasanth</i>	
An Efficient Privacy-Preserving Ranked Keyword Search Method.....	840
<i>E. Nirmala, S. Muthurajkumar, D. Subitha</i>	
Power Quality Issues Compensation using ANN Techniques.....	850
<i>S Veerakumar, P Selvabharathi, S Sathishkumar</i>	
Piezo Electric Rainfall Energy Harvester with Proactive Protection Mechanism with Integrated IOT device	864
<i>S Bhuvaneswari, K T Maheswari, K Chandraprakash, S Deepak</i>	
Energy Conservation on Vapour Compression Refrigeration System using PCM.....	871
<i>P Saji Raveendran, P C Murugan</i>	
Experimental Studies on the Application of Biomass Gasifier for Drying Tapioca in Remote Areas	877
<i>P C Murugan, P Saji Raveendran</i>	
Performance Evaluation of Standalone Solar Powered Water Irrigation System Using DC Pump.....	884
<i>A. Matheswaran, C. Ganesh Babu, K. Lakshmi, P. Sivaranjani, R.K. Dhanuja, M. Nidhya Shree</i>	
Fault identification in a grid connected solar PV system using Back propagation Neural Network	893
<i>M. Mano Raja Paul, R. Kannan, M. Leeban Moses, A. Bhuvanesh</i>	
Strong product of two S^+ -valued graphs.....	901
<i>M. Sundar, M. Chandramouleeswaran</i>	
Experimental Study On Counting Of Eggs In Egg Breaking System And Level Maintenance In Collecting Tanks.....	908
<i>K S Vairavel, V Prabhu, R Poorna Divya</i>	
Industry 4.0 technologies incorporated with Delta PLC based Smart Home Automation for Rural Development	913
<i>E Sarangapani, N Narmadhai, N Santhosh</i>	
Implementation of Low intensity Dye Sensitized Solar Cell for Electricity Generation.....	920
<i>R. Kavin, T. Sathesh Kumar, P. Leninpugalhanthi, R. Gobu, K. Gaayathry, S. Sivaranjani, T. Kesavan</i>	
Modeling and Stability Analysis of Dual Rotor Axial Flux PMG for Wind Turbine Applications	926
<i>V. S. Hemachandira, K. Rajalashmi, R. Bharani Kumar</i>	
A Smart Approach to Facilitate Cafeteria	933
<i>I Swami, N Das</i>	

Smart Helmet.....	943
<i>S Sobhana, S R Sowmeeya, M Srinathji, S Tamilselvan</i>	
Corona smart watch – the reminder friend	953
<i>R Shanmathi Sri, U Sasireka, M Shwetha, S Tamilselvan</i>	
An Agricultural Irrigation Management System Based on the Internet of Things With MQTT Protocol	960
<i>M. Karthikkumar, V. Premchandran, E. Sathish</i>	
Internet of Things in the implementation of a Smart City	967
<i>A Jeevanandham, C Srinivasan, S Balavignesh</i>	
Low Power and Energy Efficient Street Light System Using IoT.....	973
<i>M Srinivasan, P Manojkumar, A Dheepancharavarthy</i>	
Design and Implementation of IoT Based Soil Moisture Data Logger for Irrigation and Research Applications.....	980
<i>Abin Satheesan, Sanjoy Deb, J.P. Shri Tharanyaa</i>	
IoT Based Water flow Monitoring, Theft Avoidance and Alert system for Water Supply	988
<i>J P Shri Tharanyaa, Abin Satheesan, R Saravanakumar, D Sharmila</i>	
Design and Monitoring of Smart Roads Based on Weather Data by using IoT	996
<i>Srinivas Bachu, K Sudheer Kumar Reddy, K Nagabhushanam</i>	
Voice-O-Mata Using IOT.....	1004
<i>K. Mohan Raj, N. Balaji, G. Jayanthi, P. Naveen, S. Vengatesan, A.M. Aakash</i>	
IOT Automatic Water Conservation System.....	1010
<i>P Saranya, Y Bhavya Reddy, U Bhavya Vani, CH Sai Durgesh</i>	
Investigations of Antifriction bearing defects using Vibration Signatures.....	1016
<i>V. Hariharan, P. Thangavel, G. Rajeshkumar, D Deepa</i>	
A Review on Bio-Composite Materials.....	1030
<i>S Manikandan, L Gokulanathan, P Thangavel, S Sathishkumar</i>	
Coordinated Multipoint Transmission and Reception in Downlink and Uplink LTE Systems.....	1041
<i>C Poongodi, D Deepa, D Muthumanickam</i>	
Design of Op-Amp Based ECG Signal Acquisition Using MULTISIM.....	1048
<i>N. Ikram, E.R. Aboorva, A. Heebasathya, M. Janani</i>	

Author Index